Strategic Report

Chair's message

In 2024, we continued to do what Shell does best, connecting energy and people.

In total, we served around 33 million customers at Shell-branded retail sites every day, and around 1 million business customers across more than 70 countries. We used the power of our people, brand, technology and trading network to provide our customers with the oil and gas they need today. At the same time, we increasingly helped them to make low-carbon choices, from biofuels to charging for electric vehicles.

In this second year under our Chief Executive Officer, Wael Sawan, Shell went from strength to strength. We improved Shell's operational performance, and made good progress against the financial and climate targets and ambition we set out at our Capital Markets Day in 2023 and in our Energy Transition Strategy 2024.

We demonstrated that our strategy to deliver more value with less emissions is producing strong results, and compelling shareholder returns. By the beginning of 2025, we had announced $3 billion or more in buybacks for 13 consecutive quarters.

New projects

Shell has pioneered ways to provide energy for more than a century. As the energy system and energy mix keep evolving, we will continue to provide the energy people need through the complex transition to low-carbon energy.

We will help to keep the world moving with oil and gas, while developing the low-carbon alternatives our customers need to decarbonise. To that end, we have built on our leadership positions in liquefied natural gas (LNG) and deep-water oil and gas production with some important new projects. We announced a final investment decision for Manatee, an undeveloped gas field in Trinidad and Tobago, which will have a key role in providing gas to the country's Atlantic LNG facility.

Our deep-water Whale platform in the Gulf of America started production in January 2025. At its peak, we expect that Whale will produce around 100,000 barrels of oil equivalent a day, enough to fuel the daily journeys of 2.7 million cars in the USA. It will operate with 30% lower carbon intensity over its life cycle than Vito, another US deep-water platform. In February 2025, our next-generation Penguins facility started production in the North Sea. It will produce mostly oil but also enough gas to heat around 700,000 UK homes a year, with around 30% lower operational emissions than its predecessor, Brent Charlie [A].

Less emissions

We kept our focus on reducing emissions as we worked to become a net-zero emissions energy business by 2050. In 2024, we achieved our short-term target to reduce the net carbon intensity of the products we sell, compared with 2016. We achieved this mainly by reducing sales of oil products and growing power sales.

By the end of 2024, we had achieved 60% of our target to halve Scope 1 and 2 emissions from our operations by 2030, compared with 2016 levels.

We continued to transform our business. In January 2024, we announced the decision to stop processing crude oil into petrol, jet fuel and diesel at the Wesseling site of our Energy and Chemicals Park Rheinland, Germany, and to produce premium oils instead. In April 2024, we opened our bioLNG liquefaction plant in Germany, which can produce enough bioLNG to fuel around 5,000 LNG trucks a year.

Technology and innovation

Innovation remains vital for a successful transition to low-carbon energy. In 2024, we spent around $500 million on projects that contributed to decarbonisation, almost half of our total spending on research and development. In December, I saw some of that work for myself when I visited the Energy Transition Campus Amsterdam in the Netherlands. I was especially excited to see how our research is building on Shell's leadership in gas-to-liquids (GTL) technology, something we pioneered almost half a century ago.

Today, the Pearl GTL gas-to-liquids plant in Qatar uses natural gas to produce an alternative fuel to conventional diesel for transport, as well as oils and lubricants. We have also used GTL technology to develop immersion cooling fluids for data centres. These fluids reduce costs, energy consumption and emissions compared with conventional cooling. This will be increasingly important as the growth in artificial intelligence leads to greater use of energy-intensive data centres.

Now our scientists in Amsterdam are researching how to use that same GTL technology to produce sustainable aviation fuel made from renewable power and captured carbon on a commercial scale. In another exciting development for the energy transition, they are also

[A] Based on a five-year average 2016–2020 for Brent Charlie emissions, and the highest expected emissions for Penguins.

looking at how to produce synthetic methane, made from renewable hydrogen and captured carbon, to decarbonise the production of LNG.

We are creating the business case for other pioneering solutions, such as carbon capture and storage, which will be critical for the energy transition. In 2024, we took a final investment decision for two projects in Canada that will capture and store carbon from our Shell Energy and Chemicals Park Scotford in Alberta. These build on the success of our Quest CCS project in Canada which has captured more than 9 million tonnes of CO_2 since 2015.

The Northern Lights joint venture with Equinor and TotalEnergies in Norway is developing the world's first project to offer commercial carbon transport and storage as a service. The first CO_2 shipments are expected in 2025.

Unique capabilities

Our strengths go way beyond production. Through our integrated portfolio, we can buy and blend energy products to meet our customers' needs. We can use our unique capabilities, including trading, to connect energy to our customers through the energy transition.

For example, we became one of the world's largest traders and suppliers of sustainable aviation fuel in 2024. We achieved this because of our long-term agreements with producers, the strength of our customer relationships, and strategic investments in logistics around key terminals and airports.

In 2024, we continued to build an organisation with an outstanding brand, as well as outstanding people, and trading, technology and innovation capabilities. Today, we sell nearly three times the energy products that we produce, meeting our customers' demand for oil and gas and low-carbon products through our integrated model.

Working together

We believe that the energy transition will be achieved by governments, companies like Shell, and customers all working together. Governments need to put in place effective policies to progress the energy transition, and energy producers need to help develop the solutions of the future. The transition also requires demand from customers who are willing to pay for low-carbon energy. We are playing our part. I am confident that Shell can continue to bring its deep experience to help advance the energy transition.

In 2024, we demonstrated that you can still be sure of Shell. As a customer, you can be sure that Shell will provide you with the right products and solutions today and through the energy transition. And as an investor you can be sure that this is the right management team with the right strategy, setting Shell up for success in the years to come.

Sir Andrew Mackenzie
Chair

1. The Whale deep-water platform started production in January 2025.

2. The Northern Lights joint venture in Norway is developing the world's first project to deliver commercial carbon transport and storage as a service.

3. The Penguins facility in the North Sea will produce enough gas to heat around 700,000 UK homes a year.

Chief Executive Officer's review

2024 at a glance

1.5 ■
Serious injury, illness and fatality frequency (SIF-F) in Shell-operated ventures
(2023: 2.6)

90.0 ■
Tier 1 and Tier 2 process safety incidents
(2023: 63.0)

$16.5 billion
Income for the period
(2023: $19.6)

$23.7 billion
Adjusted Earnings*
(2023: $28.3)

$54.7 billion ■
Cash flow from operating activities (2023: $54.2)

$39.5 billion
Free cash flow*
(2023: $36.5)

$19.6 billion
Capital expenditure
(2023: $23.0)

$21.1 billion
Cash capital expenditure*
(2023: $24.4)

$13.9 billion ●
Share buyback programme
(2023: $14.6)

$8.7 billion ●
Dividends paid
(2023: $8.4)

58 million tonnes ●
Scope 1 and 2 emissions CO_2e
(2023: 57)

71 gCO_2e/MJ ●
Net carbon intensity (NCI)
(2023: 72)

● Performance against our longer-term targets (see pages 14-15).
■ Key performance indicators (see pages 18-19).
* Non-GAAP measure (see page 445).

In 2024, the world experienced continued geopolitical volatility. The Russia-Ukraine war entered its third year and conflict escalated in the Middle East, bringing personal tragedy to many. It was a time of political change, with elections in more than 60 countries.

Energy security and affordability rose higher on political agendas, even as the share of renewable energy grew. This came into sharp focus during Europe's winter of 2024. Wind and solar power reached record levels in the region, while liquefied natural gas (LNG) played a critical role in keeping homes and businesses running when there was not enough wind or sunlight.

With global demand for energy increasing, coupled with the challenge of climate change, Shell continues to focus on its strategy to deliver more value with less emissions. We believe the world needs to maintain secure and affordable energy supplies while moving to low-carbon energy.

In 2024, my second year as Chief Executive Officer, I am proud of the progress we have made in putting our strategy into action. I want to thank everyone at Shell for their contribution. We are growing shareholder returns, while working to reduce emissions from our operations and products. We are positioning Shell to win through the energy transition on our journey to become a net-zero emissions energy business by 2050.

Integrated energy company

Our strategy aims to grow our world-leading LNG business, which provides flexibility alongside renewable energy, and a lower-carbon alternative to coal. We expect that supplying LNG will be the biggest contribution we will make to the energy transition over the next decade, as we help to build the energy system of the future.

Building on our deep knowledge and strong partnerships, we are also responsibly producing the oil that will be needed for decades to come, with a focus on cost and carbon competitiveness. We intend to be the most customer-focused energy marketer and trader in the world, providing people with the energy they need to power their lives and businesses. We are developing commercial models for low-carbon solutions, such as biofuels. My vision is for Shell to become the world's leading integrated energy company, delivering impact at scale, connecting energy and people, matching supply to demand.

We have set out to transform Shell into a more focused and more competitive energy business, and I am pleased to say that in 2024, we moved forward at pace in that direction. Following our principles of performance, discipline and simplification, we have made good progress against the targets and ambition we presented at our Capital Markets Day in 2023 and in our Energy Transition Strategy 2024.

More value

In 2024, we achieved our target to reduce structural costs* by $2-3 billion by the end of 2025, against 2022, one year ahead of time. We continued to make disciplined investments, and difficult choices, such as pausing construction of our biofuels plant in Rotterdam, the Netherlands, to assess the most commercial way forward.

We are building a strong track record of performance. Shell reported the second-highest cash flow from operations in our history in 2024, outperforming our target for free cash flow growth. By the end of the year, we had delivered at the top end of our target to distribute 30-40% of cash flow from operations to our shareholders*, mainly through buybacks.

Our Prelude floating LNG facility off the coast of Australia had record production in 2024, as did our QGC natural gas business in Queensland, Australia, boosting our operational performance. We added major new projects. We took a final investment decision on Bonga North, off the coast of Nigeria, which is expected to start up by the end of the decade and reach peak production of 110,000 barrels of oil equivalent a day. Our US deep-water platform Whale started production in January 2025, with estimated peak production of 100,000 barrels of oil equivalent a day.

Our agreement to acquire Pavilion Energy in Singapore further strengthened our LNG portfolio with more sales and flexibility. I also signed an agreement in Abu Dhabi to invest in the Ruwais LNG project [A], which is designed to operate with lower carbon intensity than traditional LNG plants. LNG Canada is expected to start producing in the middle of 2025, the largest private-sector energy investment in Canada's history.

Another example of our transformation is the sale of Shell Pakistan, which is helping us to achieve our aim to divest around 500 retail sites every year until 2025.

Less emissions

In 2024, we worked hard towards our climate goals. We abated more than 1 million tonnes of CO_2 from our operations through projects such as reduced flaring and the use of renewable electricity. This allowed us to keep our Scope 1 and 2 emissions roughly flat compared with 2023, despite increased oil and gas production and asset utilisation. By the end of 2024, we had achieved 60% of the reduction required to meet our 2030 Scope 1 and 2 target.

Shell remains a leader in reducing emissions of methane, a potent greenhouse gas that can be released during oil, gas and LNG production. By the end of 2024, we had reduced total methane emissions from assets under our operational control by 76% compared with 2016. Total routine flaring from our upstream oil and gas assets remained stable in 2024, and, as of January 1, 2025, we no longer routinely flare from these assets.

When it comes to our sales, we achieved our short-term target to reduce the net carbon intensity of the energy products we sell with a 9% reduction compared with 2016, moving us closer to our target of a 15-20% reduction by 2030 compared with 2016 levels.

By the end of 2024, we had installed more than 70,000 public charge points for electric vehicles, a year ahead of schedule. I am encouraged by the progress we are making in carbon capture and storage, with plans for two linked projects in Canada. In Norway, our Northern Lights joint venture is ready to offer commercial carbon transport and storage as a service. I saw for myself another exciting initiative, our first megawatt charger for electric trucks and ships in Amsterdam.

Beyond our operations, 2024 was an important year because the Court of Appeal of The Hague dismissed Milieudefensie's claim against Shell. I believe the decision was the right one for the energy transition and our company. On February 11, 2025, Milieudefensie announced that it was taking its case to the Netherlands' Supreme Court. I am confident in the strength of our position.

Shell people

The safety of everyone at Shell remains our top priority. I am deeply saddened by the deaths of four people working for Shell in 2024 and early 2025. These tragic incidents took place in India, Malaysia, the Netherlands and Nigeria. My heart goes out to the families and friends of these four people. We must continue to protect everyone working for Shell, and we will learn from these and other incidents.

Shell's success depends on our people. I experienced the dynamism and diversity of our teams when I visited our operations in Brazil, China, India, Kuwait, Oman, Poland, Qatar, and the USA. I was impressed by how they are embracing the principles of performance, discipline and simplification in their everyday work.

I also spent Safety Day with our team at the Shell Polymers Monaca chemical plant in the USA. Once again, I had the opportunity to witness first-hand how far we have advanced our safety culture and processes in recent years.

Investment case and partner of choice

I am convinced that we are the best positioned energy company to navigate the energy transition because of our people, our connections to customers, and our portfolio of world-class assets. We are building on these strengths by transforming Shell. We are becoming a more focused and competitive business, so that we are the investment case and partner of choice through the energy transition. We had another strong year in 2024, and we have more to do. I am confident that our strategy, executed with conviction and determination, is working. We are on the path to becoming the world's leading integrated energy company.

Wael Sawan
Chief Executive Officer

[A] Subject to completion.
* Non-GAAP measure (see page 445).

This is Shell

Shell is a global group of energy and petrochemical companies, employing around 96,000 people [A] across more than 70 countries. We have activities ranging from oil and gas exploration and production to the marketing of fuels and lubricants, and research and development. We are increasingly offering our customers low-carbon energy solutions.

For more than a century, Shell has connected people and energy. We provide the energy people need to fuel their homes, hospitals, schools, vehicles, machinery and factories. Our purpose is to power progress together, by working with each other, our customers and our partners. Our vision [B] is to be the world's leading integrated energy company – delivering impact at scale, connecting energy and people, matching supply to demand.

Shell's strategy is to deliver more value with less emissions as we work to become a net-zero emissions business by 2050. As we navigate the energy transition through the next decade, we will leverage our global footprint, the trust in our brand, and our innovation and technology capabilities to be the energy company that customers and countries choose to be their partner.

Our people and values

Whether they work on our platforms and pipelines, or in our offices and research labs, people are key to our success. They collectively determine our culture and we expect them to behave according to our values: honesty, integrity and respect for people.

We expect everyone at Shell to also comply with relevant laws and regulations to help us conduct business in an ethical and transparent manner. We firmly believe in the fundamental importance of trust, openness, teamwork and professionalism. The Board assesses and monitors our culture and how it is embedded in our attitudes and behaviours, including in our activities and stakeholder relationships.

To realise our vision, we are transforming Shell to become a more focused and competitive business. Our extraordinary community of talent will approach the next decade of the energy transition with courage and determination. We expect Shell's people to care about each other, our work, and about doing business the right way with a focus on safety, people and sustainability.

The Shell General Business Principles set out our responsibilities to all our stakeholders. As part of these principles, we commit to contribute to sustainable development, and we have embedded this commitment into our strategy, our processes and decision-making. This requires balancing short- and long-term interests, integrating economic, environmental and social considerations into business decision-making. As we implement our strategy, we will also maintain our relentless focus on achieving our Goal Zero ambition: to do no harm to people and to have no leaks across operations. The Shell Code of Conduct explains how employees, contractors and anyone else acting on behalf of Shell must behave.

Strong relationships

We seek to build strong, trusted relationships with all our stakeholders, including our approximately 1 million commercial and industrial customers, and the around 33 million people we serve daily at our Shell-branded retail stations. Our stakeholders include: our employees, contractors and pensioners; the investor community; customers; our suppliers and strategic partners; regulators and governments; non-governmental organisations, civil society, academia and think tanks; and the communities where we work.

[A] At December 31, 2024, and including portfolio companies.
[B] A vision statement defines the desired future state of a company rather than a series of firm, binding commitments.

Our core values

Honesty
We encourage our employees and business partners to speak up and celebrate those who do the right thing.

Integrity
We empower our employees and business partners to make the right decisions.

Respect for people
We embrace diversity, equality and inclusivity.

Our guiding principles

Performance
We maintain a relentless focus on improving operational and financial performance.

Discipline
We allocate shareholders' capital with discipline and make clear choices about where we can create value.

Simplification
We streamline the way we do things, removing complexity, and manage the portfolio to support disciplined capital allocation.

Our Goal Zero ambition
We aim to do no harm to people and to have no leaks across our operations. We call this our Goal Zero ambition. Everyone working for Shell strives to achieve Goal Zero each day.

Our business directorates in 2024	Reporting segments
Integrated Gas and Upstream	**Integrated Gas** explores for and extracts natural gas which we then process to produce liquefied natural gas (LNG) or convert into gas-to-liquids (GTL) products. Our activities include the operation of the upstream and midstream infrastructure that is needed to deliver gas and gas products to the market. We earn revenues from the trading and optimisation, marketing and distribution of LNG, GTL and natural gas. See pages 31-37 for a review of our performance.
	**Upstream** explores for and extracts crude oil, natural gas and natural gas liquids. Shell has activities in deep water and conventional oil and gas. The business also operates the infrastructure necessary to transport the oil and gas to the market or to process it in our integrated energy and chemicals parks. See pages 38-46 for a review of our performance.
Downstream, Renewables and Energy Solutions	**Marketing** supplies fuels and lubricants, for transport, manufacturing, mining, power generation, agriculture and construction. Shell is also a major blender and trader of biofuels. Shell Mobility operates our retail network, including electric vehicle charging and convenience retail. See pages 55-59 for a review of our performance.
	**Chemicals and Products** includes manufacturing plants and refineries which we are repurposing into energy and chemicals parks. We turn crude oil and other feedstocks into products for households, industry and transport. The segment also includes the pipeline business, trading and optimisation of crude oil, oil products and petrochemicals, and oil sands activities. See pages 60-67 for a review of our performance.
	Renewables and Energy Solutions generates, markets and trades power from wind, solar and pipeline gas. The business also includes hydrogen production and marketing, commercial carbon capture and storage (CCS) hubs, carbon credits and nature-based solutions to avoid or reduce carbon emissions. See pages 68-71 for a review of our performance.

What sets us apart

Deep-water expertise	We have almost five decades of deep-water expertise and continue to develop innovative designs for oil and gas assets, replicating successful projects to deliver more value with less emissions. Our deep-water business has a track record of sustained cash flow.
Integrated gas and LNG capability	We have a world-leading LNG business with a sizeable portfolio, a global network of customers, extensive shipping and storage assets, and access to regasification plants. Our diversified and global portfolio of plants and terminals enhances our resilience to market shocks and allows us to capitalise on price volatility.
Technology and innovation	Shell has a long history in technology and innovation. We have a global network of R&D centres and work closely with our customers, suppliers and partners. We also collaborate with some of the world's leading technology companies to deploy digital solutions at scale across our business.
Integrated business model – trading and optimisation	Shell produces energy and is also one of the world's largest and most experienced energy traders and suppliers. We can identify and meet a customer's needs quickly. Our value chains are enhanced by purchases from third parties, and we have a leading global position in energy markets.

How we create value

We aim to meet the world's growing need for more and sustainable energy solutions in ways that are economically, environmentally and socially responsible. Through our business activities we create value for our shareholders, customers and wider society. This is a non-exhaustive illustration of Shell's key business activities that deliver the energy needed for today.

Our inputs [A]

Financial capital

Equity attributable to Shell plc shareholders ($ billion) [B]:
178 2023: 187

Total debt ($ billion) [B]:
77 2023: 82

Net debt* ($ billion) [B]:
39 2023: 44

Average capital employed* ($ billion) [B] [E]:
225 2023: 234

Cash capital expenditure* ($ billion):
21 2023: 24

Operations

Refinery and chemical plant availability: ■
92% 2023: 91%

Oil & gas production available for sale (kboe/d):
2,836 2023: 2,791

LNG liquefaction volumes (million tonnes): ■
29 2023: 28

Our People

Number of employees (thousands) [B]:
96 2023: 103

Number of training days (thousands):
264 2023: 295

Relationships

Ranking in the Global 500 list of most valuable oil and gas companies [C]:
1 2023: 1

Customers, joint arrangements, government relations, suppliers. Number of operating countries [B]:
>70 2023: >70

Intellectual capital

Research and development expenses ($ million):
1,099 2023: 1,287

Number of patents [B][D]:
8,677 2023: 8,829

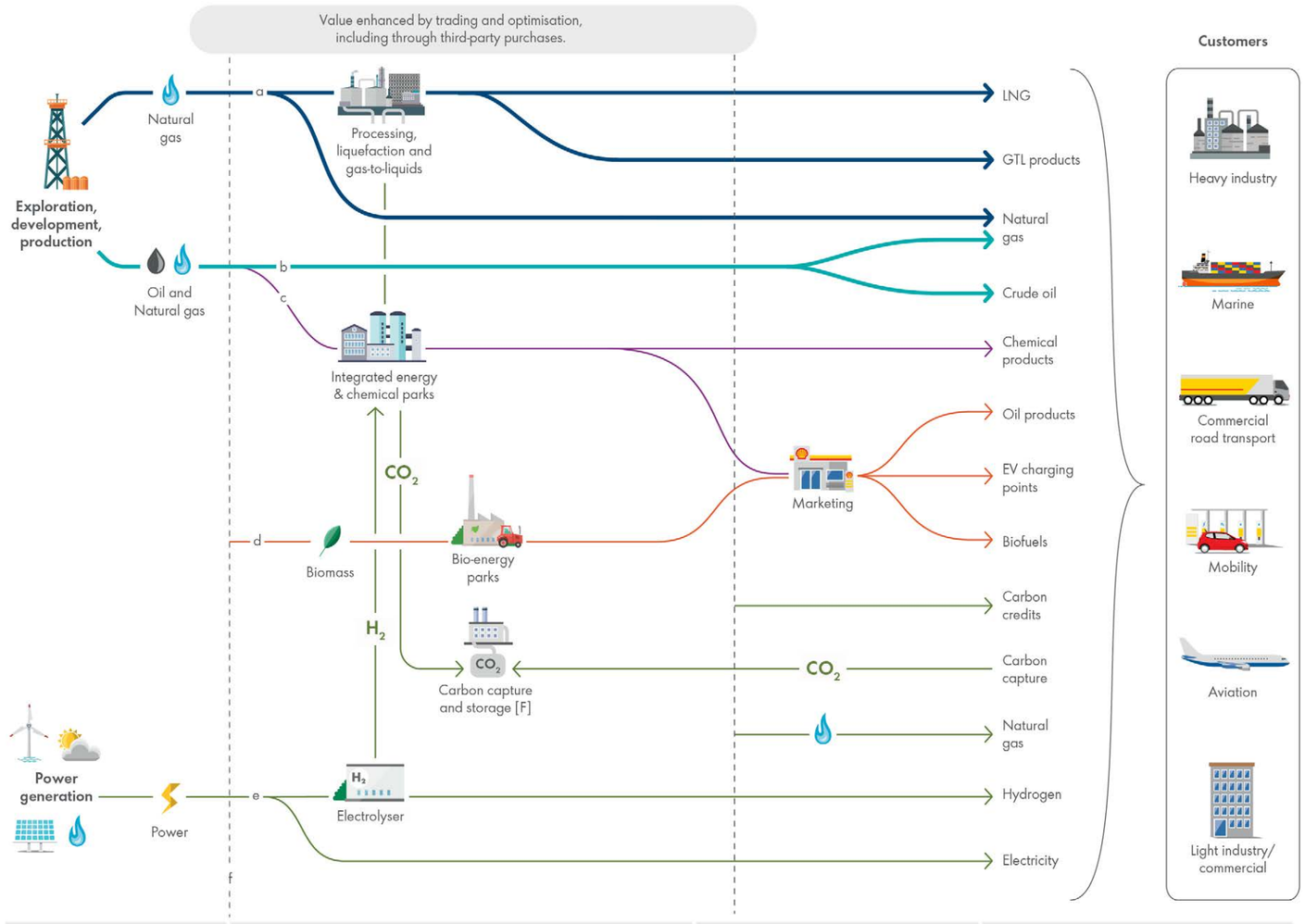
Natural resources

Proved oil and gas reserves (million boe) [B]:
9,620 2023: 9,787

Energy consumed (million MWh):
212 2023: 205

* Non-GAAP measure (see page 445).
[A] In 2024 unless stated otherwise.
[B] At December 31, 2024.
[C] Source: Brand Finance Global 500.
[D] Includes patents granted and pending patent applications.
[E] Reporting methodology has been changed, see Non-GAAP measures (page 445).

Business activities



■ Key performance indicators see page 18-19.
● Performance against our longer-term targets see page 14-15.

[F] Carbon capture and storage (CCS) hubs developed to offer CCS-as-a-service to our customers is reported in the Renewables and Energy Solutions segment. Where existing or future CCS projects help to decarbonise our own assets, they will be reported in the segment where the asset sits.

Outcomes and impacts for our stakeholders [A]

Generating Shareholder Value

Cash flow from operating activities ($ billion): ■
55 2023: 54

Free cash flow*
($ billion):
40 2023: 36

Shareholder distributions* [B]
($ billion): ●
23 2023: 23

Adjusted Earnings* ($ billion):
24 2023: 28

Achieving Net-Zero Emissions

Absolute emissions (Scope 1 and 2 – million tonnes of CO_2 equivalent): ●
58 2023: 57 | 2016: 83

Net carbon intensity [C] (grams of CO_2 equivalent per megajoule): ●
71 2023: 72 | 2016: 78

Methane emissions intensity: ●
0.04% 2023: 0.05%

Customer emissions from the use of our oil products [D] (million tonnes CO_2 equivalent)
491 2023: 517 | 2021: 569

Powering Lives

Women employees in senior leadership positions [E]:
33% 2023: 32%

Total spend on goods and services* ($ billion):
42 2023: 49

Respecting Nature

Total waste disposed (million tonnes):
1.9 2023: 2.3

Operational spills of more than 100 kilograms (thousand tonnes):
1.23 2023: 0.37

* Non-GAAP measure (see page 445).
[A] In 2024 unless stated otherwise.
[B] Total shareholder distributions* were $23 billion, comprising $9 billion in cash dividends and $14 billion in share buybacks.
[C] In 2024, we revised NCI from 79gCO_2e/MJ (g) to 78g for 2016, and from 74g to 72g for 2023. See page 98 for details.
[D] Scope 3, Category 11.
[E] At December 31, 2024.

Our strategy

Our strategy is to deliver more value with less emissions.

Our vision [A] is to be the world's leading integrated energy company and our strategy is to deliver more value with less emissions. We are positioning Shell to become the investment case and partner of choice through the energy transition.

More value

We are committed to enhancing value for our investors through disciplined investments, enhanced shareholder distributions and maintaining a strong balance sheet. Our focus remains on providing secure and reliable products, both now and throughout the energy transition, to meet the evolving needs of our customers. At Capital Markets Day 2023 (CMD23), we outlined our specific targets, and the progress we have made against these targets is presented on page 14.

Less emissions

We are committed to becoming a net-zero emissions energy business by 2050. We have set climate targets and an ambition, outlined in our Energy Transition Strategy 2024 (ETS24), to help us reach net zero. ETS24 was approved by 78% of shareholders who voted at our Annual General Meeting (AGM) in May. Progress against our climate targets and ambition is presented on page 93.

Shell aims to lead in the energy transition where we have competitive strengths, see strong customer demand, and identify clear regulatory support from governments. We will continue to provide our customers with the energy and other products they need, and we will provide this affordably and reliably, while also increasingly offering them low-carbon energy solutions to help them decarbonise their activities.

Moving forward

In 2024, we delivered our strategy against the four themes of generating shareholder value, achieving net-zero emissions, respecting nature and powering lives. These themes are presented on pages 12-13.

Like all businesses, we will continue to adapt how we implement our strategy as the world evolves. This adaptability is crucial for navigating the dynamic energy landscape enabling long-term success.

Capital Markets Day on March 25, 2025, presents an update to our financial targets for investors. See pages 16-17.

[A] A vision statement defines the desired future state of a company rather than a series of firm, binding commitments.

Photo: Staff at Shell QGC's training centre in Chinchilla, Queensland, Australia.

We will deliver more value with less emissions by:
- Growing our integrated gas and LNG business.
- Sustaining liquids production.
- Focusing Downstream, Renewables and Energy Solutions.

Growing our integrated gas and LNG business

We are investing in our gas production and growing our LNG business to deliver the secure energy the world needs. LNG is a critical fuel for the energy transition because it is a lower-carbon alternative to coal in power generation and can be easily transported to where it is needed.

Sustaining liquids production

We aim to sustain liquids production of at least 1.4 million barrels a day through to 2030 with increasingly lower carbon intensity. We are focusing our exploration activities in locations where hydrocarbons have already been discovered.

Focusing Downstream, Renewables and Energy Solutions

We are expanding our premium marketing businesses while streamlining our portfolio with a focus on value over volume. We will build on the options we have invested in for low-carbon growth through the energy transition. Our global customer reach and our supply and trading capabilities position us well to deliver the low-carbon solutions people and businesses need.

We are seeking to change the mix of energy products we sell to our customers as their needs for energy change. We believe we can make the greatest contribution to the energy transition by helping to enable our customers to switch to low-carbon energy products and services.

This is reflected in Shell's strategy to build a portfolio that seeks to:

- develop low- and zero-carbon alternatives to traditional fuel, including biofuels, and other low- and zero-carbon gases;
- provide more renewable power solutions to customers in select markets;
- work with customers across different sectors to help them decarbonise their use of energy, for example by substituting the use of coal with LNG; and
- address any remaining emissions from conventional fuels with solutions such as CCS and high-quality carbon credits.

As we implement our strategy, we will continue to focus on performance, discipline and simplification. This applies not only to our financial and operational outcomes, but also to safety and sustainability. Our Goal Zero ambition is fundamental to the success of our company.

See "Safety" on page 122.

We believe that no business can succeed without an unwavering commitment to respecting the environment and the communities within which it works. At Shell, we seek to protect the environment, increase our reuse and recycling, make a positive contribution to biodiversity and use water and other resources efficiently. We also work to make a positive impact on people around the world, and power lives through our products and activities, and by supporting an inclusive society.

See "Respecting nature" on page 109, and "Powering lives" on page 114.

More value with less emissions

Growing our integrated gas and LNG business
Grow liquefied natural gas (LNG) sales 4-5% per year through to 2030

Sustaining liquids production
Grow Integrated Gas and Upstream total production by 1% per year to 2030

Sustain liquids production of at least 1.4 million barrels per day through to 2030

Focusing Downstream, Renewables and Energy Solutions
Disciplined capital allocation to drive cash flow resilience and higher returns

With a focus on safety, people and sustainability

Generating shareholder value

We aim to generate more value for shareholders through disciplined capital allocation, strong financial performance and by maintaining a strong balance sheet.

We seek to provide enhanced shareholder distributions through our progressive dividend policy and share buyback programmes.

2024 performance

- Total shareholder distributions* were $23 billion, comprising $9 billion in cash dividends and $14 billion in share buybacks.
- Total shareholder distributions* were 41% of cash flow from operating activities.
- Cash flow from operating activities was $55 billion.
- Cash capital expenditure* was $21 billion.
- Total debt was reduced to $77 billion and net debt* was $39 billion as of December 31, 2024. Net debt excluding leases* was $10 billion.
- Structural cost reductions* were $3.1 billion from a 2022 baseline and against a $2-3 billion target by the end of 2025.
- The annual dividend was $1.390 per share, and the quarterly dividend increased to $0.358 per share for the fourth quarter.

Information on our progress against our longer-term targets included at Capital Markets Day 2023 can be found on page 14.

As we implement our strategy, we will work to:

- Enhance shareholder distributions from 30-40% to 40-50% of cash flow from operating activities* through the cycle.
- Increase the structural cost reduction* target from $2-3 billion by the end of 2025 to a cumulative $5-7 billion by end of 2028, compared to 2022.
- Invest for growth while maintaining capital discipline,with spend of cash capital expenditure lowered to $20-22 billion*per year from 2025-2028.
- Grow normalised free cash flow per share* on average by more than 10% per year through to 2030.

* Non-GAAP measure (see page 445).

Achieving net-zero emissions

We have a target to become a net-zero emissions energy business by 2050 and will work with customers to help them decarbonise.

We are transforming our business, including selling more low-carbon products and services. We are working with our customers and others to help accelerate the energy transition. We advocate policies, legislation and regulation that will generate demand for investment in a low-carbon energy system.

2024 performance

- Scope 1 and 2 emissions were down by 30% compared with the 2016 reference year [A].
- Methane emissions intensity of 0.04% continued to be below our 0.2% target.
- Net carbon intensity (NCI) decreased by 9.0% compared with the 2016 reference year and was within the 2024 target range.
- Routine flaring from upstream operations remained stable at 0.1 million tonnes and, with effect from January 1, 2025, Shell no longer carries out any routine flaring at its upstream operations.
- Customer emissions from the use of our oil products (Scope 3, Category 11) were reduced by 5% in 2024 to a total of 14% compared with 2021 [B].

As we implement our strategy, we will work to:

- Achieve net-zero emissions by 2050 (Scope 1, 2 and 3).
- Reduce by 50% Scope 1 and 2 absolute emissions from activities under operational control by 2030, compared with 2016 levels on a net basis.
- Achieve near-zero methane emissions intensity by 2030.
- Reduce net carbon intensity by 15-20% by 2030, compared with the 2016 reference year.
- Reduce customer emissions from the use of our oil products by 15-20% by 2030, Scope 3, Category 11 [B], compared with the 2021 reference year.

Progress against our longer-term emissions targets can be found on page 14 and in "Our journey to net zero" on page 93.

[A] Reduced from 83 million tonnes of CO_2e in 2016 to 58 million tonnes of CO_2e in 2024.
[B] Customer emissions from the use of our oil products (Scope 3, Category 11) were 517 million tonnes CO_2e in 2023 and 569 million tonnes CO_2e in 2021.

Powering lives

We power lives through our products and activities, and by supporting an inclusive society.

We provide vital energy for homes, businesses and transport. We also aim to create a desirable workplace that is accepting and inclusive and representative of the communities we are a part of. Additionally, our activities generate revenues for governments through the taxes and royalties we pay, and the taxes we collect on their behalf.

2024 performance

- In 2024, we spent around $42 billion on goods and services* from suppliers around the world.
- In 2024, taxes paid* were $18 billion.
- In 2024, representation of women in Senior Leadership [A] grew to 33%.
- As of December 31, 2024, 15% of Shell's Senior Management [B] identifies as being from an ethnic minority group.
- Our 2024 Shell People Survey showed a result of 81 points out of 100 for all questions relating to diversity, equity and inclusion (DE&I).

As we implement our strategy, we will work to:

- Collaborate with suppliers that behave in an economically, environmentally and socially responsible manner.
- Be a good neighbour through strong community engagement, managing negative impacts from our activities and seeking to enhance positive impacts [C].
- Respect human rights as set out in the UN Universal Declaration of Human Rights.
- Continue to achieve 15% ethnic minority group representation in Senior Management [B] by 2027.
- Have at least one Board member from an ethnic minority background.
- Increase representation of women in senior leadership positions to 40% by 2030.
- Achieve gender balance on the Board, with at least one senior Board position held by a woman.

[A] Senior Leadership is a Shell measure based on compensation grade levels. This measure is distinct from "senior manager" as per statutory disclosure requirements. See "Our people" on page 117.
[B] As per the latest Parker Review recommendations, Senior Management refers to Senior Leadership based in the UK and is a Shell measure based on compensation grade levels.
[C] See Powering Lives for examples of how we seek to be a good neighbour.
* Non-GAAP measure (see page 445).

Respecting nature

We seek to protect the environment, increase our reuse and recycling, make a positive contribution to biodiversity and use water and other resources efficiently.

Our businesses use natural resources such as land and water for their operations. Our activities can impact nature through discharges and emissions to the environment, and through changes to the use of land and water. We assess and manage the impact of our operations on local ecosystems and communities.

2024 performance

- We continued to embed respect for nature into our activities, standards and business processes, including by ensuring that these are reflected in our Safety, Environment and Asset Management (SEAM) Standards.
- In partnership with Monash University, we are executing an ecological restoration programme on Browse Island, Australia, to eradicate invasive alien species, improve reef health and promote the return of breeding seabirds.
- At the Pearl GTL gas-to-liquids facility in Qatar, we diverted waste to local cement kilns for use as clinker in cement production, thereby reducing use of raw materials and the amount of waste sent to landfill.

As we implement our strategy, we will work to:

- Achieve net-zero deforestation from new activities by replanting forests, while maintaining biodiversity and conservation value.
- Achieve a net positive impact on biodiversity, based on reference year 2021, for new projects in critical habitats.
- Better understand the types of waste we generate and identify options to increase circular approaches.
- Implement water stewardship principles across our businesses, including the sustainable management of fresh-water resources, particularly in water-stressed areas.

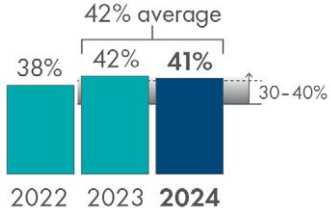
Progress against our longer-term targets

In 2024, we continued to make good progress in delivering on the longer-term targets as set out at our Capital Markets Day in June 2023 and in our Energy Transition Strategy 2024. We are ahead of schedule across the majority of our key targets, delivering more value with less emissions.

More value

Targets included at Capital Markets Day 2023 [A]

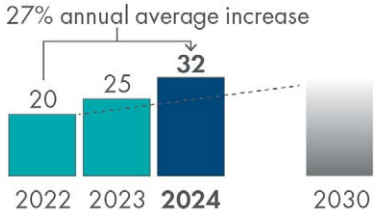
Shareholder distributions 30-40% of CFFO* through the cycle [B]
(%)
◇



Shareholder distributions as % of CFFO is used to demonstrate Shell plc's progress on increasing returns to shareholders through the cycle.

Total shareholder distributions* in 2024 of $23 billion comprised of $9 billion in dividends and $14 billion in share buybacks, representing 41% of CFFO. Average shareholder distributions since the end of 2022 of 42% of CFFO, at the top of our target range of 30–40%.

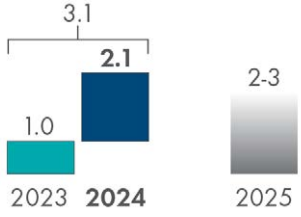
Price-normalised FCF growth* > 6% per year through 2030 [C]
($ billion)
◇



Price-normalised FCF growth demonstrates the growth in underlying business performance and removes the impact of macroeconomic price movements for a more comparable figure.

Average annual growth in price-normalised FCF of 27% since 2022 continued to outperform our targeted growth of more than 6% per year. This reflects our improved operational performance, discipline in cash capital expenditure and structural cost reduction.

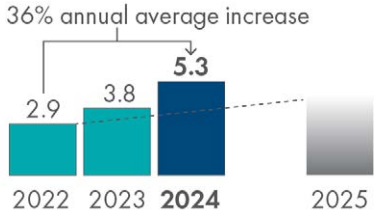
Structural cost reduction* of $2-3 billion by end of 2025 [D]
($ billion)



Structural cost reduction is used to demonstrate how management drives cost discipline across the entire organisation by simplifying our processes and portfolio, and streamlining the way we work.

Structural cost reduction* of $3.1 billion delivered since the end of 2022, one year ahead of our target date of end of 2025 and above the range of $2-3 billion set in 2023. Of the cost reduction delivered, $1.2 billion relates to portfolio changes and $1.9 billion relates to operational efficiencies across our businesses, a leaner corporate centre, and faster decision-making in project development.

Price-normalised FCF growth/share* > 10% per year through 2025 [C]
($/share)
◇



The price-normalised FCF growth per share demonstrates the increase in cash distribution to shareholders and removes the impact of macroeconomic price movements for a more comparable figure.

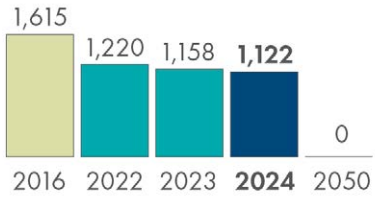
Average annual growth in price-normalised FCF per share of 36% since 2022 continued to outperform our targeted growth of more than 10% per year. This reflects our price-normalised FCF growth as well as a lower number of shares in issue as a result of our ongoing share buyback programme.

* Non-GAAP measure (see page 445).
[A] Targets announced at our Capital Markets Day 2025 are included in Outlook (See page 16)
[B] CFFO: cash flow from operating activities.
[C] FCF: free cash flow.
[D] 2025 target reflects annualised savings achieved by end-2025.

◇ FCF and shareholder distributions (taken into account as part of Total shareholder return) are used when calculating Executive Directors' remuneration.

Less emissions
Targets included in our Energy Transition Strategy 2024

Net-zero emissions by 2050 (Scope 1, 2 and 3) [D], [E]
(million tonnes of CO_2e)

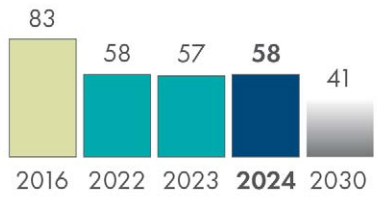


Net-zero emissions demonstrate our progress towards achieving our target to become a net-zero emissions energy business by 2050.

Net absolute emissions continued to decrease in 2024, principally driven by a reduction in our sales of oil products.

Halving Scope 1 and 2 emissions by 2030 under operational control (2016 baseline) [D]
(million tonnes of CO_2e)

◆

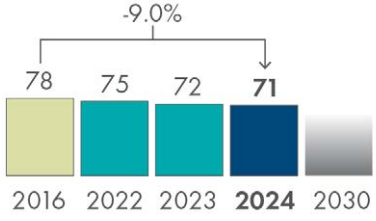


We have set a target to halve the emissions from our operations (Scope 1) and the energy we buy to run them (Scope 2) by 2030 compared with 2016 levels, on a net basis.

Combined Scope 1 and 2 emissions in 2024 reflect a 30% reduction compared with the 2016 baseline. The slightly higher emissions compared to 2023 were due to higher utilisation and production, offset by reductions from abatement projects.

Reduce the net carbon intensity (NCI) of the products we sell by 15-20% by 2030 [D], [F]
(gCO_2e/MJ)

◆



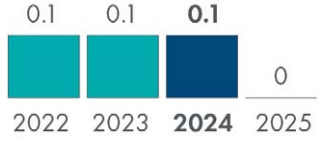
The NCI metric is used to track progress in reducing the overall carbon intensity of the energy products we sell, compared with a 2016 baseline. NCI is the average intensity, weighted by sales volume of the energy products we sell. With a reduction of 9.0% compared with the 2016 baseline, our interim target to reduce our NCI by 9-12% in 2024 is met.

The decrease in NCI compared with 2023 is mainly driven by a reduction in our sales of oil products, continued growth in our power sales and a reduction in average oil product intensity.

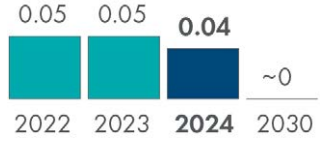
Eliminate routing flaring from upstream operations by 2025 [D], [G] and achieve near-zero methane emissions by 2030 [D], [H]

◆

Routine flaring
(million tonnes)



Methane emissions intensity
(%) [I]



In 2024, total routine flaring from our upstream oil and gas assets remained stable compared with 2023. From January 1, 2025, our target of ending routine flaring from upstream operations has been met (independent of the March 13, 2025 completion of the sales of SPDC). We continued to deliver methane emissions intensities well below our 0.2% target.

In addition to these targets we have an ambition to reduce the customer emissions from the use of our oil products by 15-20% by 2030, compared with 2021 (Scope 3, Category 11). See "Our journey to net zero" on page 102.

◆ This target is used to determine Executive Directors' remuneration.

[D] See "Our journey to net zero" on pages 76-108.
[E] Estimated total GHG emissions included in NCI (net) were revised from 1,645 to 1,615 million tonnes of CO_2e for 2016, from 1,240 to 1,220 million tonnes of CO_2e for 2022 and from 1,185 to 1,158 million tonnes of CO_2e for 2023. See page 98 for details.
[F] Grams of carbon dioxide equivalent per megajoule. In 2024, we revised NCI from 79gCO_2e/MJ (g) to 78g for the 2016 base year, from 76g to 75g for 2022 and from 74g to 72g for 2023. See page 98 for details.
[G] Subject to completion of the sale of SPDC.
[H] On an intensity basis.
[I] Methane emissions intensity of Shell-operated oil and gas assets with marketed gas.

Outlook

Capital Markets Day on March 25, 2025, presents an update to our financial targets for investors.

Our vision [A] is to be the world's leading integrated energy company.

Shell is transforming to become simpler, more resilient and competitive. We want to become the world's leading integrated gas and LNG business and the most customer-focused energy marketer and trader, while sustaining a material level of liquids production.

We are building on the significant progress we have made in executing our strategy to deliver more value with less emissions. As we do this, we will maintain our focus on performance, discipline and simplification. We aim to grow returns for shareholders, while reducing our emissions and helping our customers reduce theirs.

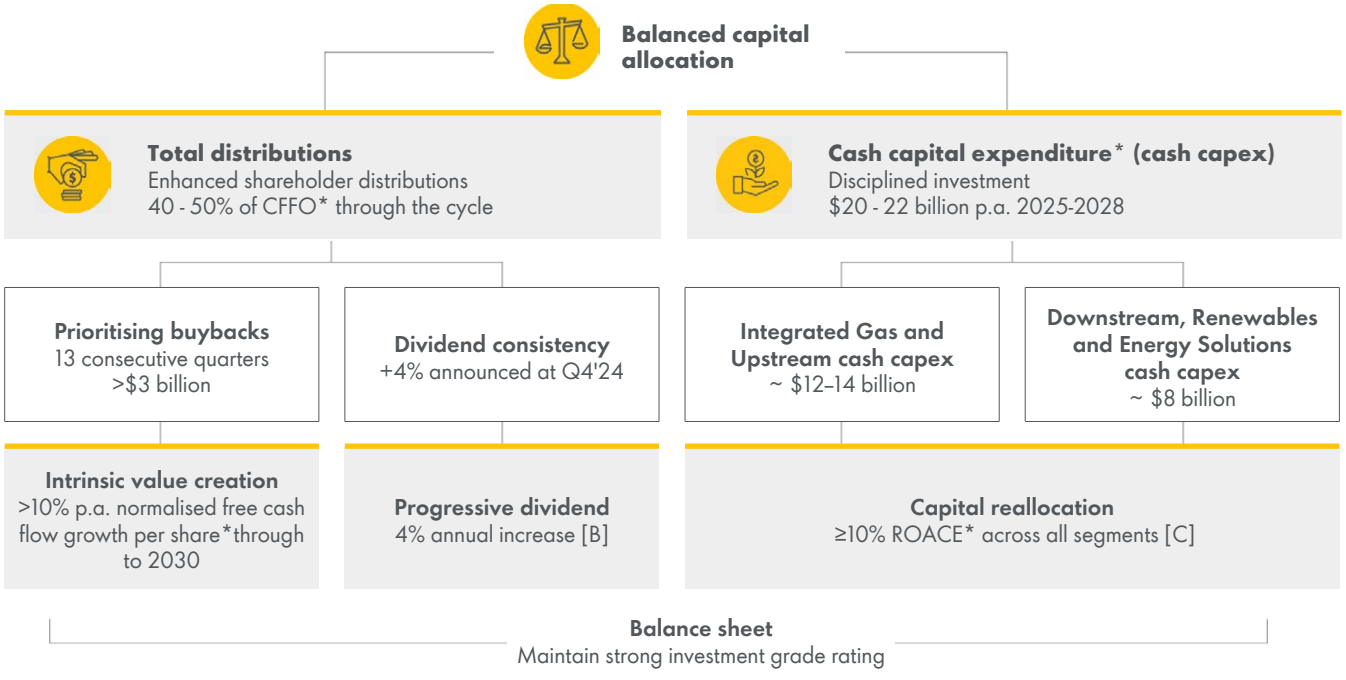
To successfully implement our strategy, we will take a value-led approach through a financial framework which enhances shareholder distributions, and maintains discipline in capital allocation and a balance sheet with a strong investment grade rating.

Financial discipline and strategic focus
We will maintain our focus on performance, cost and capital discipline, investing in areas of competitive strength to maximise returns.

Updates to our financial targets:
- Enhance shareholder distributions from 30–40% to 40–50% of cash flow from operations* through the cycle, continuing to prioritise share buybacks while maintaining the 4% a year progressive dividend policy [B].
- Increase the structural cost reduction* target from $2–3 billion by the end of 2025 to a cumulative $5–7 billion by the end of 2028, compared with 2022.
- Invest for growth while maintaining capital discipline with cash capital expenditure* lowered to $20–22 billion a year for 2025–2028 compared with $21 billion in 2024.
- Grow normalised free cash flow per share* on average by more than 10% a year through to 2030.

[A] A vision statement defines the desired future state of a company rather than a series of firm, binding commitments.

Shell financial framework: Capital Markets Day 2025



[B] Subject to Board approval as well as shareholder approval at the 2025 Annual General Meeting.
[C] Price normalised ROACE on an Adjusted Earnings plus non-controlling interest basis.

* Non-GAAP measure (see page 445).

The Board intends to enhance shareholder distributions through a combination of dividends and share buybacks, maintaining a 4% progressive dividend policy.

When the Board sets the level of shareholder distributions, it looks at a range of factors including the macro environment, underlying business earnings and Group cash flows, the current balance sheet, future investment, acquisition and divestment plans, and existing commitments.

Growth and resilience through the energy transition

Shell believes the world is facing a complex, multi-decade energy transition in which there will be growing demand for secure, affordable and, increasingly, low-carbon energy.

In liquefied natural gas (LNG), we will reinforce our leadership position by growing sales 4–5% a year through to 2030.

We will also grow production across our combined Upstream and Integrated Gas business by 1% a year to 2030, sustaining our 1.4 million barrels a day of liquids production with increasingly lower carbon intensity.

And, we will drive cash flow resilience and higher returns in Downstream, Renewables and Energy Solutions by:

- Pursuing focused growth in our high-return Mobility and Lubricants businesses.
- Leveraging competitive strengths to drive profitable and scalable businesses across our lower-carbon platforms [A] where we expect to have up to 10% of capital employed by 2030.
- Unlocking more value from our strong portfolio of Chemicals assets. This will be done by exploring strategic and partnership opportunities in the USA and through high-grading and selective closures in Europe. We believe this will enable the business to prosper while improving returns and reducing capital employed by 2030.

[A] Shell's lower-carbon platforms include low-carbon fuels, carbon capture and storage, and hydrogen, as well as power which includes renewable generation and gas fired power.

Shell will continue to deliver more value with less emissions, growing in areas where we have competitive strengths. We believe we are providing a compelling investment case for our shareholders, now, and into the future.

Performance culture and commitment

We will continue to embed a performance culture, empowering our people with greater ownership and faster decision-making, helping to ensure safe and responsible operations.

Shell is committed to delivering on our promises, transforming to become more resilient and competitive, and driving growth and value creation through disciplined execution of our strategy. We are confident in our ability to navigate the energy transition and deliver enhanced returns for our shareholders.

Photo: Shell employees and contractors on the Vito deep-water platform in Ingleside, Texas, USA.

Performance in the year

Performance indicators

These indicators enable management to evaluate Shell's performance against our annual Operating Plan. They are also used as part of determining Executive Directors' remuneration. See "Directors' Remuneration Report" on pages 188-190.

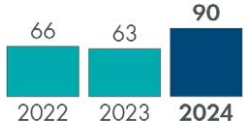
Safety

Personal safety
(SIF-F cases per 100 million working hours)

Serious injury, illness and fatality (SIF) is defined as a serious work-related injury or illness that resulted in a fatality or permanent impairment. For SIF Frequency (SIF-F), the number of SIF employee and contractor incidents is divided by 100 million working hours.

2024 performance
Despite improvement, the result reflects two fatalities and five serious injuries reported in 2024, which is too many. We will continue to strengthen the safety culture among our employees and contract staff.

Process safety
(number of Tier 1 and Tier 2 events)



Operational process safety events are defined as the unplanned or uncontrolled release of any material from a process with the greatest actual consequence resulting in harm to employees, contract staff, a neighbouring community, or damage to equipment, or exceeding a threshold quantity.

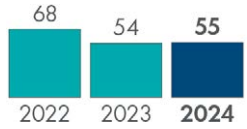
2024 performance
The increase in process safety tiered events was driven by our Downstream and Renewables businesses. We are actively addressing these challenges by refining our operational strategies, renewing our focus on fundamentals and leveraging new technologies to return to the downward trend of previous years.

For details on our safety performance see "Safety" on pages 122-124

[A] 2022 adjustment on SIF-F from 1.7 to 2.0 is due to a change in classification for one injury after publication of the 2023 Annual Report and Accounts.

Financial delivery

Cash flow from operating activities
($ billion)



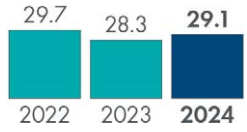
Total cash receipts and payments associated with oil, gas, chemicals and other product sales. This reflects our ability to generate cash to service and reduce debt, invest and make shareholder distributions.

2024 performance
Driven mainly by a strong operational performance.

See "Liquidity and capital resources" on pages 24-27.

Shell's journey in the energy transition

LNG volumes
(million tonnes)

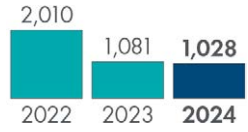


Shell's share of sales of equity LNG volumes from liquefaction plants owned by Shell subsidiaries, Shell joint ventures and associates, and Shell's share of LNG produced from liquefaction plants which operate under tolling arrangements with Shell.

2024 performance
LNG liquefaction volumes increased mainly due to lower maintenance in Australia.

See "Integrated Gas" on page 31.

Reducing operational emissions
(Scope 1 and 2; thousand tonnes CO_2)

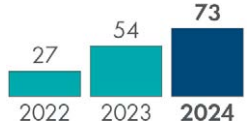


Operational emission reductions achieved from GHG abatement projects (e.g. reduced flaring, increased energy efficiency, and use of renewable electricity), site closures and decommissioning or transformations, resulting in sustained GHG reductions.

2024 performance
This was mainly due to catalyst improvements at Pearl GTL in Qatar, routine flaring reduction (Forcados Yokri Gas Project) in Nigeria and optimisation of the liquefaction control system at QGC in Australia.

See "Our journey to net zero" on pages 76-108.

Electric vehicle (EV) charge points
(thousand)



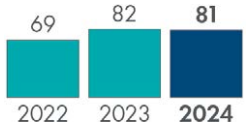
Number of public electric vehicle charge points owned, controlled, or Shell branded. The definition has been revised to exclude operated only charge points. Prior year figures have been restated.

2024 performance
Performance was largely due to growth in top adoption markets, and we achieved our goal of installing 70,000 public charge points a year ahead of schedule.

See "Marketing" on pages 55-59.

Operational excellence

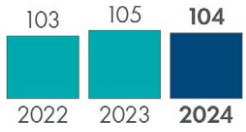
Project delivery on schedule
(%)



Our capability to complete major projects on time, measured as the percentage of projects delivered on schedule.

2024 performance
Highlights for this year include the successful start-up of 10 projects, half of which came on-stream ahead of schedule.

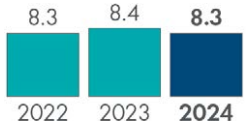
Project delivery on budget
(%)



Aggregate cost against the aggregate baseline for those projects, where a figure greater than 100% means over budget.

2024 performance
The result was impacted by the decision to pause on-site construction at our biofuels plant in Rotterdam.

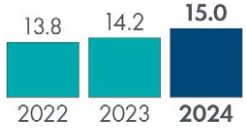
Customer satisfaction
(index)



This quantitative measurement of customer experience performance is calculated as a simple average of customer satisfaction scores from the global business-to-business transactional survey programme.

2024 performance
The result reflects focus on prioritisation, continuous improvement of e-commerce platforms, and the resilience of our teams.

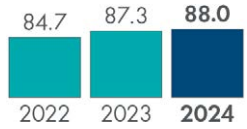
Brand Share Preference
(%)



The percentage of customers answering "Shell" when asked: "Assuming that all the fuel station companies that you would consider are conveniently located, which one company do you prefer most?" The responses are taken from survey respondents in more than 60 countries covering both fuel and non-fuel retail consumers.

2024 performance
Our Brand Share Preference continued to rise, performing ahead of expectations in all regions.

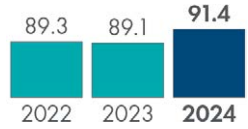
Upstream controllable availability
(%)



Reflects our ability to optimally run our Upstream assets and includes all Shell-operated assets and selected assets not operated by Shell but for which Shell has strategic influence. It excludes the impact of extreme unexpected events that are outside our control, such as government restrictions and hurricanes. Reliability issues, turnarounds and maintenance at own-operated or third-party facilities impact controllable availability.

2024 performance
Performance improved, particularly in Kazakhstan, Nigeria, Norway, Oman and the USA, partially offset by lower performance in the UK.

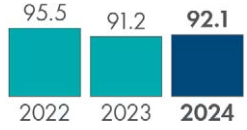
Midstream availability
(%)



The extent to which LNG assets are ready to process product as a comparison with capacity, considering the impact of planned and unplanned maintenance.

2024 performance
Improved performance, especially in Australia, Qatar and Oman.

Refinery and chemical plant availability
(%)



Weighted average of plants' actual uptime, as a percentage of their maximum possible uptime, is a measure of the operational excellence of our refinery and chemical plant facilities. The weighting is based on the capital employed, adjusted for cash and non-current liabilities.

2024 performance
Improvements this year were mainly in Shell Polymers Monaca in the USA and Bukom Refinery in Singapore.

See "Chemicals and Products" on page 60.

Generating shareholder value

We are committed to enhancing shareholder distributions with a focus on performance, discipline and simplification.

Group results

Key metrics

	$ million, except where indicated		
	2024	2023	2022
Income attributable to Shell plc shareholders	16,094	19,359	42,309
Income for the period	16,521	19,636	42,874
Total segment earnings*[A] [B]	16,792	20,281	41,562
Adjusted Earnings*[A] [C]	23,716	28,250	39,870
Adjusted EBITDA*[A]	65,803	68,538	84,289
Cash flow from operating activities	54,687	54,191	68,414
Cash flow from investing activities	(15,155)	(17,734)	(22,448)
Free cash flow*	39,533	36,457	45,965
Cash capital expenditure*	21,085	24,392	24,833
Operating expenses*[D]	36,917	39,960	39,476
Underlying operating expenses*[D]	35,707	39,201	39,456
ROACE on an Adjusted Earnings plus Non-controlling interest basis* [E]	11.3%	12.8%	18.0%
Total debt at December 31 [F]	77,078	81,541	83,795
Net debt* at December 31 [F]	38,809	43,542	44,837
Gearing* at December 31	17.7%	18.8%	18.9%
Oil and gas production available for sale (thousand boe/d)	2,836	2,791	2,864
Proved oil and gas reserves at December 31 (million boe)	9,620	9,787	9,578
Basic earnings per share ($)	2.55	2.88	5.76
Adjusted Earnings per share* ($)	3.76	4.20	5.43
Dividend per share ($)	1.3900	1.2935	1.0375

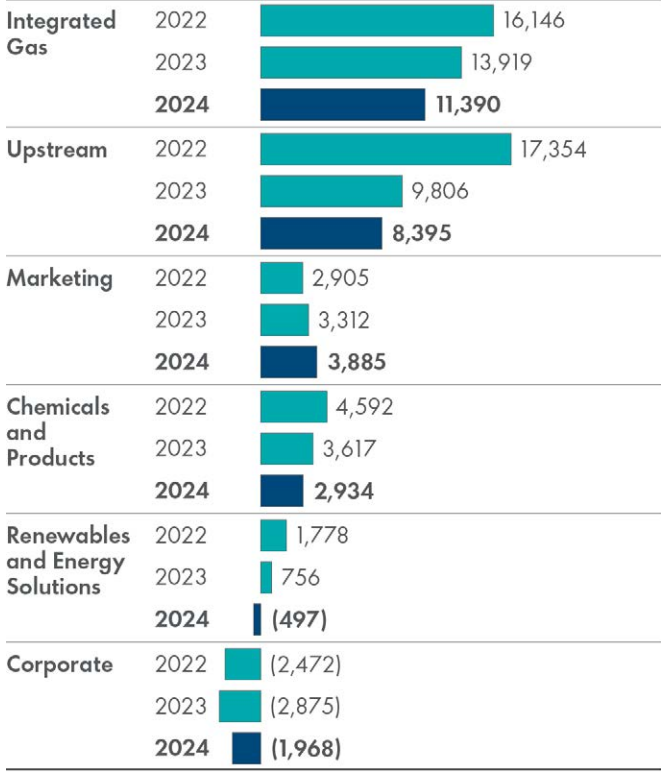
[A] Segment earnings, Adjusted Earnings and Adjusted EBITDA are presented on a current cost of supplies basis.
[B] See Note 7 to the "Consolidated Financial Statements" which includes an explanation of the reporting segment changes applicable from 2024.
[C] Adjusted Earnings exclude the non-controlling interest component.
[D] The most comparable GAAP financial measure is Production and manufacturing expenses (2024: $23 billion; 2023: $25 billion).
[E] Effective first quarter 2024, the definition has been amended and comparative information has been revised. Refer to Non-GAAP measures section for details.
[F] See Note 21 to the "Consolidated Financial Statements".
* Non-GAAP measure (see page 445).

"2024 was another year of strong performance across Shell, with significant progress against all our financial targets."

Sinead Gorman
Chief Financial Officer

Segment earnings*[A] [B]

Segment Adjusted Earnings*[A] [B]



We made significant progress towards the financial targets that we set at Capital Markets Day 2023. Our focus on performance, discipline and simplification has been key to achieving these results, enabling us to deliver more value with less emissions. In 2024, we reported the second-highest cash flow from operations in our history. Our operational performance has also improved. We have brought a number of projects online and we have taken disciplined final investment decisions that will help strengthen Shell further.

Earnings 2024-2023

Income attributable to Shell plc shareholders in 2024 was $16,094 million, compared with $19,359 million in 2023. With non-controlling interest included, income for the period in 2024 was $16,521 million, compared with $19,636 million in 2023. After current cost of supplies adjustment, total segment earnings* in 2024 were $16,792 million, compared with $20,281 million in 2023.

Adjusted Earnings* in 2024 were $23,716 million, compared with $28,250 million in 2023. The decrease was mainly driven by lower LNG trading and optimisation margins, lower realised prices, lower refining margins as well as lower trading and optimisation margins of power and pipeline gas in Renewables and Energy Solutions, partly offset by lower operating expenses and higher realised Chemicals margins.

2024 income attributable to Shell plc shareholders also included net impairment charges and reversals of $4,371 million, reclassifications from equity to profit and loss of cumulative currency translation differences related to funding structures, unfavourable movements relating to an accounting mismatch due to fair value accounting of commodity derivatives, and charges related to redundancy and restructuring. These charges, reclassifications and movements are included in identified items amounting to a net loss of $7,365 million.

Integrated Gas

Integrated Gas segment earnings* in 2024 were $9,590 million, compared with $7,057 million in 2023. The increase was mainly driven by lower unfavourable movements relating to an accounting mismatch due to fair value accounting of commodity derivatives, lower net impairment charges and reversals, higher volumes, lower operating expenses, and favourable deferred tax movements, partly offset by the combined effect of lower contributions from trading and optimisation and lower realised prices.

See "Integrated Gas" on page 31.

Upstream

Upstream segment earnings* in 2024 were $7,772 million, compared with $8,540 million in 2023. The decrease was mainly driven by unfavourable tax movements, lower realised prices and higher exploration well write-offs, partly offset by the comparative favourable impact relating to gas storage effects.

See "Upstream" on page 38.

* Non-GAAP measure (see page 445).

Marketing

Marketing segment earnings* in 2024 were $1,894 million, compared with $3,057 million in 2023. The decrease was mainly driven by higher net impairment charges and reversals, net losses related to sale of assets, unfavourable tax movements and higher depreciation charges. These were partly offset by higher Marketing margins including higher unit margins in Lubricants and Mobility, partly compensated by lower Sectors and Decarbonisation margins. Segment earnings also reflected lower operating expenses.

See "Marketing" on page 55.

Chemicals and Products

Chemicals and Products segment earnings* in 2024 were $1,757 million, compared with $1,482 million in 2023. The increase was mainly driven by lower net impairment charges and reversals, lower operating expenses and higher Chemicals margins. These were partly offset by lower Products margins, largely due to lower refining margins, unfavourable movements relating to an accounting mismatch due to fair value accounting of commodity derivatives and unfavourable tax movements.

See "Chemicals and Products" on page 60.

Renewables and Energy Solutions

Renewables and Energy Solutions segment earnings* in 2024 were an expense of $1,229 million, compared with a gain of $3,089 million in 2023. The decrease was mainly driven by lower favourable movements relating to an accounting mismatch due to fair value accounting of commodity derivatives, lower margins, largely from trading and optimisation primarily in Europe due to lower volatility and higher net impairment charges and reversals, partly offset by lower operating expenses.

See "Renewables and Energy Solutions" on page 68.

Corporate

Corporate segment earnings* in 2024 were an expense of $2,992 million, compared with an expense of $2,944 million in 2023. The increase was mainly driven by reclassifications from equity to profit and loss of cumulative currency translation differences related to funding structures, partly offset by favourable tax movements, favourable net interest movements and favourable currency exchange rate effects.

See "Corporate" on page 72.

Prior year earnings summary

Our earnings summary for the financial year ended December 31, 2023, compared with the financial year ended December 31, 2022, can be found in the Annual Report and Accounts (page 32) and Form 20-F (page 30) for the year ended December 31, 2023, as filed with the Registrar of Companies for England and Wales and the US Securities and Exchange Commission, respectively.

Cash flow from operating activities

Cash flow from operating activities was $54,687 million in 2024, compared with $54,191 million in 2023. Cash flow from operating activities in 2024 was primarily driven by Adjusted EBITDA, and working capital inflow of $2,062 million, partly offset by tax payments of $12,002 million.

Cash capital expenditure

Cash capital expenditure* was $21,085 million in 2024, compared with $24,392 million in 2023.

See "Our journey to net zero" on page 87.

Operating expenses and Underlying operating expenses

Operating expenses* were $36,917 million in 2024, compared with $39,960 million in 2023. Underlying operating expenses* were $35,707 million, compared with $39,201 million in 2023. The decrease in both Operating expenses and Underlying operating expenses was mainly driven by structural cost reductions delivered through operational efficiencies across our businesses, a leaner corporate centre, faster decision-making in project development, and portfolio changes.

Return on average capital employed on an Adjusted Earnings plus Non-controlling interest (NCI) basis

Our ROACE on an Adjusted Earnings plus Non-controlling interest basis* decreased to 11.3%, compared with 12.8% in 2023, mainly driven by lower earnings.

Significant accounting estimates and judgements

See Note 2 to the "Consolidated Financial Statements" on pages 245-255.

Legal proceedings

See Note 32 to the "Consolidated Financial Statements" on pages 308-310.

* Non-GAAP measure (see page 445).

Production available for sale

Oil and gas production available for sale in 2024 was 2,836 thousand boe/d, compared with 2,791 thousand boe/d in 2023. This increase was mainly driven by growth from new fields and partly offset by divestments.

Oil and gas production available for sale [A][B]

Thousand boe/d

	2024	2023	2022
Crude oil and natural gas liquids	1,452	1,454	1,460
Synthetic crude oil	51	52	46
Natural gas [C]	1,333	1,285	1,357
Total	2,836	2,791	2,864
Of which:			
Integrated Gas	954	939	921
Upstream	1,831	1,800	1,897
Oil sands (part of Chemicals and Products)	51	52	46

[A] See "Oil and gas information".
[B] Reflects 100% of production of subsidiaries except in respect of PSCs, where the figures shown represent the entitlement of the subsidiaries concerned under those contracts.
[C] Natural gas volumes are converted into oil equivalent using a factor of 5,800 scf per barrel.

Proved reserves

The proved oil and gas reserves of Shell subsidiaries and the Shell share of the proved oil and gas reserves of joint ventures and associates are summarised in "Oil and gas information" on pages 47-54 and set out in more detail in "Supplementary information – oil and gas (unaudited)" on pages 313-332.

Before taking production into account, our proved reserves increased by 917 million boe in 2024. Total oil and gas production was 1,084 million boe. Accordingly, after taking production into account, our proved reserves decreased by 167 million boe in 2024, to 9,620 million boe at December 31, 2024.

Liquidity and capital resources

Liquidity and capital resources

Shell generated free cash flow* of $39.5 billion in 2024, aided by disciplined capital management, portfolio simplification and operational performance improvements. Net debt* decreased to $38.8 billion at December 31, 2024 (December 31, 2023: $43.5 billion). Total debt decreased to $77.1 billion at December 31, 2024 (December 31, 2023: $81.5 billion). Gearing* decreased to 17.7% at December 31, 2024, compared with 18.8% at December 31, 2023.

See Note 21 to the "Consolidated Financial Statements" on pages 284-285.

Liquidity

Shell satisfies its funding, liquidity and working capital requirements by using cash generated from our operations, taking on debt and through divestments. In 2024, access to the international debt capital markets remained strong, with Shell's debt principally financed from these markets through central debt programmes consisting of:

- a $10 billion global commercial paper (CP) programme, with maturities between 183 days and 364 days;
- a $10 billion US CP programme, with maturities not exceeding 397 days;
- an unlimited Euro medium-term note (EMTN) programme (also referred to as the Multi-Currency Debt Securities Programme). This programme lapsed in November 2024, and will be renewed in the first half of 2025 or as required to issue debt; and
- an unlimited US universal shelf (US shelf) registration.

The debt issued under the CP, EMTN and US shelf has been issued by Shell International Finance B.V., the issuance company for Shell, with its debt being guaranteed by Shell plc. In 2023, Shell incorporated a new US subsidiary, Shell Finance US Inc., and in 2024 a portion of the debt issued by Shell International Finance B.V. was moved into this entity through an exchange offer. This debt remains guaranteed by Shell plc, as will any new debt issued by Shell Finance US Inc. under the US shelf.

We also maintain an $8 billion committed credit facility maturing in 2026. This remained fully undrawn at December 31, 2024. This facility was reduced from $10 billion in the third quarter of 2024 due to the strong liquidity position of the Group. This reduced core facility and cash on balance sheet provide back-up coverage for our CP programmes. Other than certain borrowings by subsidiaries in their local jurisdictions, we do not have any other committed credit facilities.

Our total debt decreased by $4.5 billion to $77.1 billion at December 31, 2024. The total debt excluding lease liabilities matures as follows: 14% in 2025; 8% in 2026; 5% in 2027 and 73% in 2028 and beyond. The portion of debt maturing in 2025 is expected to be repaid from some combination of cash balances, cash generated from operations, divestments and the issuance of new debt. In 2024, we did not issue any debt under our US shelf registration, EMTN programme or CP programmes. The Group had no CP outstanding at December 31, 2024.

While our subsidiaries are subject to restrictions, such as foreign withholding taxes on the transfer of funds in the form of cash dividends, loans or advances, such restrictions are not expected to have a material impact on our ability to meet our cash obligations.

* Non-GAAP measure (see page 445).

Market risk, credit risk and pension commitments

Financial risks

We use various financial instruments for managing exposure to foreign exchange and interest rate movements. Our treasury operations are highly centralised and seek to manage credit exposures associated with our substantial cash, foreign exchange and interest rate positions.

Our portfolio of cash investments is diversified to avoid concentrating risk in any one instrument, country or counterparty. Other than in exceptional cases, the use of external derivative instruments is confined to specialist trading and central treasury organisations that have the appropriate skills, experience, supervision, control and reporting systems.

We operate with procedures and policies designed to ensure that trading risks are managed within a prescribed control framework. The framework sets out authorised limits and requirements that trading should only be performed by employees with the appropriate skills and experience. Senior management regularly reviews these authorised trading limits. In addition, a department that is independent from our traders monitors our market risk exposures daily, using techniques such as value-at-risk alongside other risk metrics.

We have counterparty credit risk policies in place which seek to ensure that products are sold to customers with appropriate creditworthiness. These policies include detailed credit analysis and monitoring of customers against counterparty credit limits. Where appropriate, netting arrangements, credit insurance, prepayments and collateral are used to manage credit risk.

Management believes it has access to sufficient debt funding sources (capital markets) and to undrawn committed borrowing facilities to meet foreseeable requirements.

A pensions forum chaired by the CFO oversees Shell's input to pension strategy, policy and operation. A risk committee supports the forum in reviewing the results of assurance processes with respect to pension risk. Local trustees manage the funded defined benefit pension plans and set the strategic asset allocation for the plans, including the extent to which currency, interest rate and inflation risks are hedged, and the contributions paid are based on independent actuarial valuations that align with applicable local regulations. Pension fund liquidity is managed by holding appropriate liquid assets and maintaining credit facilities. Where appropriate, transactions to transfer pension liabilities to third parties are also considered. Our total employer contributions were $0.4 billion in 2024 and are estimated to be $0.9 billion in 2025.

See "Risk factors" on page 139, Note 24 and Note 26 to the "Consolidated Financial Statements" on pages 290-296 and 298-304.

Capitalisation table

$ million

	December 31, 2024	December 31, 2023
Equity attributable to Shell plc shareholders	178,307	186,607
Current debt	11,630	9,931
Non-current debt	65,448	71,610
Total debt [A]	77,078	81,541
Total capitalisation	255,385	268,148

[A] Of total debt of $77.1 billion (2023: $81.5 billion), $48.1 billion (2023: $53.4 billion) was unsecured and $29.0 billion (2023: $28.2 billion) was secured; $46.0 billion is fully and unconditionally guaranteed by Shell plc (December 31, 2023: $51.3 billion), with the following amounts issued by Shell Group subsidiaries: $31.8 billion by Shell International Finance B.V., a wholly owned finance subsidiary of Shell plc (December 31, 2023: $48.4 billion); $11.4 billion by Shell Finance US Inc., a wholly owned finance subsidiary of Shell plc (December 31, 2023: $nil billion); and $2.8 billion by BG Energy Capital plc (December 31, 2023: $2.9 billion).

See Note 21 to the "Consolidated Financial Statements" for further disclosure on total debt and net debt.

Guarantees and other off-balance sheet arrangements

There were no guarantees or other off-balance sheet arrangements at December 31, 2024, or December 31, 2023, that were reasonably likely to have a material impact on Shell.

See Note 32 to the "Consolidated Financial Statements" on page 308 for further details on guarantees where the potential obligations related to issuance are assessed to be remote.

Consolidated Statement of Cash Flows

Cash flow from operating activities in 2024 was $54.7 billion, compared with $54.2 billion in 2023. The cash flow from operating activities in 2024 was primarily driven by Adjusted EBITDA and working capital inflow of $2.1 billion (compared with working capital inflow of $7.1 billion in 2023), partly offset by tax payments of $12.0 billion (compared with tax payments of $13.7 billion in 2023). The cash flow from operating activities in 2024 also included favourable commodity-related derivative financial instrument movement of $2.5 billion (compared with unfavourable movement of $5.7 billion in 2023).

Cash flow from investing activities in 2024 was an outflow of $15.2 billion, compared with an outflow of $17.7 billion in 2023. The cash flow from investing activities in 2024 included cash capital expenditure* of $21.1 billion (compared with cash capital expenditure of $24.4 billion in 2023), partly offset by divestment proceeds* of $2.8 billion (compared with divestment proceeds* of $3.1 billion in 2023) and interest received of $2.4 billion (compared with interest received of $2.1 billion in 2023).

Cash flow from financing activities in 2024 was an outflow of $38.4 billion, compared with outflows of $38.2 billion in 2023, mainly due to lower repurchases of shares of $13.9 billion (2023: $14.6 billion) and unfavourable debt-related derivative financial instrument movements of $0.6 billion (2023: $0.7 billion favourable movement) and lower net repayment of debt of $9.6 billion (2023: $9.8 billion net repayment).

Cash and cash equivalents were $39.1 billion at December 31, 2024 (December 31, 2023: $38.8 billion).

* Non-GAAP measure (see page 445).

Prior year Consolidated Statement of Cash Flows

Our Consolidated Statement of Cash Flows for the financial year ended December 31, 2023, compared with the financial year ended December 31, 2022, can be found in the Annual Report and Accounts (page 35) and Form 20-F (page 33) for the year ended December 31, 2023, as filed with the Registrar of Companies for England and Wales and the US Securities and Exchange Commission, respectively.

See "Consolidated Statement of Cash Flows" on page 244.

Cash flow from operating activities

The most significant factors affecting Shell's cash flow from operating activities are earnings, which are mainly impacted by: realised prices for crude oil, natural gas and LNG; production levels of crude oil, natural gas and LNG; chemicals, refining and marketing margins; and movements in working capital and derivative financial instruments.

The impact on earnings from changes in market prices depends on: the extent to which contractual arrangements are tied to market prices; the dynamics of production-sharing contracts; the existence of agreements with governments or state-owned oil and gas companies that have limited sensitivity to crude oil and natural gas prices; tax impacts; and the extent to which changes in commodity prices flow through into operating expenses. Changes in benchmark prices of crude oil and natural gas in any particular period provide only a broad indicator of changes in our Integrated Gas and Upstream earnings in that period. Changes in any factors, from within the industry or the broader economic environment, can influence refining and marketing margins. The precise impact of any changes depends on how the oil markets respond to them. The market response is affected by factors such as: whether the change affects all crude oil types or only a specific grade; regional and global crude oil and refined products inventories; and the collective speed of response of refiners and product marketers in adjusting their operations. As a result, margins fluctuate from region to region and from period to period.

Divestment and cash capital expenditure

The levels of divestment proceeds and cash capital expenditure in 2024 and 2023 reflect our discipline and focus as we implement our strategy. Proceeds from sale of property, plant and equipment and businesses were $1.6 billion for 2024, compared with $2.6 billion in 2023. Divestment proceeds* for 2024 were $2.8 billion, compared with $3.1 billion in 2023. Cash capital expenditure split by segment is presented in the table below:

Cash capital expenditure* [A]

$ million

	2024	2023	2022
Integrated Gas	4,767	4,196	4,265
Upstream	7,890	8,343	8,143
Marketing [B]	2,445	5,790	4,978
Chemicals and Products	3,290	3,014	3,691
Renewables and Energy Solutions [C]	2,549	2,681	3,469
Corporate	144	368	287
Total cash capital expenditure	21,085	24,392	24,833

[A] See Note 7 to the "Consolidated Financial Statements" which includes an explanation of the reporting segment changes applicable from 2024.
[B] Includes acquisition of Nature Energy in 2023.
[C] Includes acquisition of Sprng in 2022.

Contractual obligations

The table below summarises Shell's principal contractual obligations at December 31, 2024, by expected settlement period. The amounts presented have not been offset by any committed third-party revenue in relation to these obligations.

Contractual obligations

$ billion

	Less than 1 year	Between 1 and 3 years	Between 3 and 5 years	5 years and later	Total
Debt [A]	6.9	6.4	7.9	27.6	48.8
Leases	6.4	9.5	6.3	19.8	42.0
Purchase obligations [B]	28.8	22.1	13.5	55.2	119.6
Other long-term contractual liabilities [C]	0.1	1.0	0.2	0.7	2.1
Total	42.2	39.0	27.9	103.4	212.4

[A] See Note 21 to the "Consolidated Financial Statements". Debt contractual obligations exclude interest, which is estimated to be $1.4 billion payable in less than one year, $2.4 billion between one and three years, $2.2 billion between three and five years, and $12.2 billion in five years and later. For this purpose, we assume that interest rates with respect to variable interest rate debt remain constant at the rates in effect at December 31, 2024, and that there is no change in the aggregate principal amount of debt other than repayment at scheduled maturity as reflected in the table. Lease contractual obligations include interest.

[B] Purchase obligations disclosed in the above table exclude commodity purchase obligations that are not fixed or determinable and are principally intended to be resold in a short period of time through sale agreements with third parties. Examples include long-term non-cancellable LNG and natural gas purchase commitments and commitments to purchase refined products or crude oil at market prices. Inclusion of such commitments would not be meaningful in measuring liquidity and cash flow, as the cash outflows generated by these purchases will generally be offset in the same periods by cash received from the related sales transactions.

[C] Includes obligations included in "Trade and other payables" and provisions related to onerous contracts included in "Decommissioning and other provisions" in "Non-current liabilities" in the "Consolidated Balance Sheet" that are contractually fixed as to timing and amount. In addition to these amounts, Shell has certain obligations that are not contractually fixed as to timing and amount, including contributions to defined benefit pension plans (see Note 24 to the "Consolidated Financial Statements") and obligations associated with decommissioning and restoration (see Note 25 to the "Consolidated Financial Statements").

Shareholder distributions

We returned $8.7 billion to our shareholders through dividends and $13.9 billion through share buybacks in 2024. Total shareholder distributions represented 41% of cash flow from operating activities*.

The fourth quarter 2024 dividend of $0.358 per share was paid on March 24, 2025, to shareholders on the register at February 14, 2025, and represents an increase of 4% compared with the third quarter of 2024.

See Note 30 to the "Consolidated Financial Statements" on page 308.

Purchases of securities

The intent to purchase shares was announced alongside the quarterly results during 2024, and covered the period up until the next quarterly announcement. In 2024, share buybacks of $3.5 billion were announced on February 1, $3.5 billion on May 2, $3.5 billion on August 1 and $3.5 billion on October 31 (finalised in the first quarter of 2025). In addition, on January 30, 2025, a further buyback of $3.5 billion was announced along with the fourth quarter 2024 results; it is intended that this will be completed by the announcement date of the first quarter 2025 results.

During 2024, 409.1 million ordinary shares were purchased and cancelled. Overall, a total nominal share value of €29 million ($34 million), 6.3% of the Company's total issued share capital at December 31, 2023, was purchased and cancelled during 2024 for a total cost of $13.9 billion, including expenses, at an average price of $34.36 per share.

The buybacks completed in the first half of 2024 were in accordance with the authorities granted by shareholders at the 2023 Annual General Meeting (AGM). The buybacks completed in the second half of 2024 were in accordance with the authorities granted by shareholders at the 2024 AGM. At the 2024 AGM, authority was granted for the Company to repurchase up to a maximum of 10% of its issued ordinary shares, excluding treasury shares, (644.2 million ordinary shares), both on and off market, allowing purchases on the Amsterdam as well as London exchanges. As at December 31, 2024, 468 million ordinary shares could still be repurchased under the current AGM authorities. The purpose of the share repurchases in 2024 was to reduce the issued share capital of the Company.

New resolutions will be proposed at the 2025 AGM to renew the authority for the Company to purchase its own share capital, up to specified limits, for a further year. These proposals will be described in more detail in the 2025 Notice of Annual General Meeting.

Shares are also purchased by the employee share ownership trusts and trust-like entities (see Note 28 to the "Consolidated Financial Statements" on page 305) to meet delivery commitments under employee share plans. All share purchases are made in open market transactions.

The table on the next page provides information on purchases of shares in 2024 and January 2025 by the Company and affiliated purchasers. Purchases in euros and sterling are converted into dollars using the exchange rate on each transaction date.

* Non-GAAP measure (see page 445).

Purchases of equity securities by issuer and affiliated purchasers in 2024 [A]

	Euro Shares			GBP Shares			ADSs [B]	
Purchase period	Number purchased for employee share plans	Number purchased for cancellation [C]	Weighted average price ($)[D]	Number purchased for employee share plans	Number purchased for cancellation [C]	Weighted average price ($)[D]	Number purchased for employee share plans	Weighted average price ($)[D]
January	3,187,890	2,992,417	32.32	1,189,886	20,282,994	31.54	650,966	66.03
February	–	20,209,031	31.72	–	20,594,628	31.35	–	–
March	–	11,550,631	32.41	–	11,495,330	32.05	67,764	67.37
April	–	13,500,349	35.93	–	27,822,393	35.43	–	–
May	–	18,389,736	36.02	–	17,661,025	35.86	–	–
June	–	14,235,749	35.05	–	16,234,749	34.93	34,819	71.43
July	–	9,320,167	36.30	–	22,056,649	36.27	–	–
August	–	17,386,007	35.89	–	16,989,085	35.59	–	–
September	–	18,341,974	33.96	–	19,439,076	25.70	36,136	69.48
October	–	15,538,143	33.74	–	15,598,083	33.40	–	–
November	3,161,027	15,370,794	33.00	773,600	23,427,791	32.71	–	–
December	5,290,944	15,272,833	31.53	1,261,616	23,175,726	31.28	514,913	61.24
Total 2024	11,639,861	172,107,831	33.91	3,225,102	234,777,529	33.66	1,304,597	64.45
January	5,446,429	13,269,767	32.91	1,271,425	19,923,745	32.68	2,047,363	64.83
Total 2025	5,446,429	13,269,767	32.91	1,271,425	19,923,745	32.68	2,047,363	64.83

[A] Reported as at transaction date.
[B] American Depositary Shares.
[C] Under the share buyback programme.
[D] Includes stamp duty and brokers' commission.

Financial information relating to the Royal Dutch Shell Dividend Access Trust

The results of the Royal Dutch Shell Dividend Access Trust (the Trust) are included in the consolidated results of operations and financial position of Shell. Certain condensed financial information in respect of the Trust is given below.

The Shell Transport and Trading Company Limited and BG Group Limited have each issued a dividend access share to Computershare Trustees (Jersey) Limited (the Trustee). For the years 2024, 2023 and 2022, the Trust recorded income before tax of £nil, £nil and £nil respectively. In each period, this reflected the amount of dividends payable on the dividend access shares. Dividends are also classified as unclaimed where amounts have not cleared recipient bank accounts.

At December 31, 2024, the Trust had total equity of £nil (December 31, 2023: £nil; December 31, 2022: £nil), reflecting assets of £3 million (December 31, 2023: £4 million; December 31, 2022: £6 million) and unclaimed dividends of £3 million (December 31, 2023: £4 million; December 31, 2022: £6 million). The Trust only records a liability for an unclaimed dividend to the extent that dividend cheque payments have not been presented within 12 months, have expired or have been returned unpresented. As these unclaimed dividends relate to dividends that were announced by the Company during the period the Company was still named Royal Dutch Shell plc, and it is expected that the Company will not announce any further dividends on the dividend access shares, the Trust continues to be named the Royal Dutch Shell Dividend Access Trust.

On January 29, 2022, one line of shares was established through assimilation of each A share and each B share into one ordinary share of the Company. This assimilation had no impact on voting rights or dividend entitlements. Dutch withholding tax, applied previously on dividends on A shares, no longer applies on dividends paid on the ordinary shares following the assimilation.

In relation to the assimilation of the Company's A and B shares, the Trust will continue in existence for the foreseeable future to facilitate the payment of unclaimed dividend liabilities for shareholders of the former B shares until these are either claimed or forfeited in line with the terms outlined. Dividends which are unclaimed after six years are forfeited and unconditionally revert to The Shell Transport and Trading Company Limited and BG Group Limited, as appropriate.

Market overview

Shell maintains a large and diversified business portfolio across an integrated value chain. We are exposed to fluctuating prices of crude oil, natural gas, oil products, chemicals and power. However, our diversified portfolio provides resilience when prices are volatile. Our annual planning cycle and periodic portfolio reviews aim to ensure that our levels of capital investment and operating expenses are appropriate in the context of a volatile price environment.

See "Risk factors" on page 135.

We prepare an annual financial plan that tests different scenarios, and their impact on prices, on our businesses and organisation as a whole. These scenarios help us determine which issues could affect our operating environment and have implications for our strategy. They also help us to identify potential interventions to preserve our cash levels.

We continually assess the external environment – the markets and the underlying economic, political, social and environmental drivers that shape them – to evaluate changes in competitive forces. We define multiple potential future scenarios and business environments by identifying drivers, uncertainties, enablers and constraints to our competitiveness.

We also continually screen for new opportunities globally through our opportunity identification process. We test the resilience of our opportunities against a range of prices and costs for crude oil, natural gas, oil products and chemicals. These tests are based on short-, medium- and long-term market drivers, such as the extent and pace of the energy transition. Our opportunities are then ranked, prioritised and tested for strategic fit and value return expectations before being included in our growth funnel.

Global economic growth

In 2024, the global economy has demonstrated resilience at a time of geopolitical tensions, inflation and rising interest rates. The World Economic Outlook, published by the International Monetary Fund in January 2025, estimated global economic growth in 2024 to be 3.2% compared with 3.3% in 2023.

Macroeconomic performance was unevenly distributed. For example, growth in China disappointed, as stronger exports only partly offset a slowdown in consumption amid delayed stabilisation in the property market. India and Indonesia saw relatively brisk growth, while growth in Europe was strained, largely reflecting weakness in manufacturing and goods exports. By contrast, momentum in the USA remained robust with the economy powered by strong consumption.

Inflation receded further toward target levels in most countries, bolstering real incomes. From June 2024, many major central banks began cutting interest rates. This has supported deal-making and economic activity. However, growth is likely to be limited because of protectionist trade policies and economic challenges, such as high energy prices in Europe and the property market slowdown in China.

Global prices, demand and supply

The following table provides an overview of the main crude oil and natural gas price markers to which Shell is exposed:

Oil and gas average industry prices [A]

	2024	2023	2022
Brent ($/b)	81	83	101
West Texas Intermediate ($/b)	76	78	95
Henry Hub ($/MMBtu)	2.2	2.5	6.4
EU TTF ($/MMBtu)	11	13	40
Japan Customs-cleared Crude ($/b) - 3 months	88	89	98

[A] The 2024 average price for Japan Customs-cleared Crude is based on available market information up to the end of the period. Brent, West Texas Intermediate and EU TTF yearly average prices are based on daily spot prices. Henry Hub and Japan Customs-cleared Crude yearly average prices are based on monthly average prices.

Crude oil and oil products

The global benchmark oil price Brent averaged $81 per barrel (bbl) in 2024, slightly lower than the average of $83/bbl in 2023. Prices continued to be volatile, with Brent daily spot ranging between $70/bbl and $93/bbl. This reflected a well-supplied market due to slower economic growth and fuel substitution, as well as continued conflict in the Middle East and Europe.

Global liquids demand growth was weaker in 2024, mainly due to significantly less demand growth from China. In 2023, demand from China increased by around 1.3 million barrels per day (mb/d) year-on-year because of growth after COVID-19 but in 2024 this slowed to around 0.2 mb/d, mainly due to the country's economic slowdown and partly due to the rapid uptake of electric vehicles. This has driven the slowdown of overall global demand growth, from more than 2 mb/d in 2023 to just 0.9 mb/d in 2024.

Global liquids supply growth came in slightly lower than demand growth at around 0.6 mb/d, which includes 0.2 mb/d of growth from global biofuel supplies and the rest from non-OPEC crude supplies. OPEC supply declined further, by around 0.2 mb/d year-on-year, as OPEC maintained a production cut to keep the market balanced. The timing for the unwinding of curtailed production of OPEC and its alliances has been a key factor for supply. The return of the voluntary cut, put in place in 2023, has been repeatedly delayed due to weak market conditions, and is now expected to happen in the second quarter of 2025 at the earliest.

Conflicts in the Middle East and Europe caused some spikes in oil prices throughout the year as the market perceived increased risks to oil infrastructure and key shipping routes, such as the Red Sea. But the spikes were short-lived as the market continued to focus on demand and supply fundamentals.

In 2025, the slowdown in China is expected to continue to influence demand. The International Energy Agency (IEA) expects continued below-trend growth from China and this could result in a similar rate of growth for global oil demand as in 2024. On the supply side, non-OPEC supply – excluding US Light Tight Oil – is expected to rise, strongly bolstered by conventional offshore projects. Meanwhile, the market will continue to watch the pace at which OPEC unwinds its curtailed production.

Natural gas

Gas market

Global gas prices weakened in 2024, leading to higher demand and hence a modest return to growth in global gas markets in 2024. But prices remained higher than the historical levels seen prior to the Russian invasion of Ukraine. The market remained volatile because of concerns about security of supply in Europe and limited new LNG supply. LNG supply increased by less than 3% in 2024, supporting relatively elevated pricing levels. The early part of 2024 saw spot LNG prices fall to their lowest level since early 2022, but prices recovered by mid-year due to delays in the development of new supply capacity.

Title Transfer Facility (TTF): In Europe, TTF spot prices averaged $10.95/MMBtu (17% lower year-on-year). Demand remained weak due to warmer than normal winter weather early in the year, continued lower demand from the industrial sector, and high levels of renewable power generation. As a result, European storage levels reached maximum fill levels by the end of October 2024 and entered the winter in a strong position. However, continued concerns over gas supply security because of geopolitical tensions resulted in a more volatile price environment in the fourth quarter of the year. Europe is expected to increase imports of LNG in 2025 to refill its gas storage.

Japan Korea Marker (JKM): Spot LNG prices in Asia closely tracked the market dynamics impacting the European market. JKM prices averaged $11.89 (14% lower year-on-year). Through the first three quarters of 2024, JKM prices traded at a premium to TTF as modest growth in Chinese and Indian demand drew cargoes east because of constrained LNG supply. With storage levels high in the fourth quarter, JKM prices fell below TTF as cargoes were pulled to Europe.

Henry Hub: The North American gas market was well supplied in 2024. Higher-than-expected power generation from wind and solar reduced the need for gas-fired power. Lower gas demand put downward pressure on Henry Hub spot prices to the extent that natural gas producers responded by curtailing production. Henry Hub spot hit a new all-time low of $1.24/MMBtu in March 2024 and then again in November at $1.22/MMBtu. Henry Hub spot averaged $2.2/MMBtu over 2024, with a wide range of $1.22/MMBtu to $13.20/MMBtu, with the high mark due to a short-lived January winter storm. In the summer, temperatures averaged 1.4°C higher than the 10-year norm. While this was bullish for gas power generation, it was offset by the impact of strong renewable generation. As such, natural gas storage ended the summer at a five-year high. For 2025, continued growth in renewable capacity coupled with higher dry gas production is expected to put downward pressure on natural gas prices.

Global gas prices are expected to remain volatile in 2025. Project delays and legacy production declines are likely to constrain supply growth. However, demand has also been bolstered by economic growth in Asia, the end of Russian gas flowing to Europe via Ukraine, and Europe's need to replenish inventories. Increased government intervention as well as geopolitical unrest continue to affect global LNG trade flows and price variance.

Power

USA: In 2024, US power prices remained stable across most eastern markets compared with 2023. Henry Hub gas benchmark prices in North America were largely steady, staying below $3/MMBtu after a short-lived spike in January 2024. In the western USA, a cold start to the year drove Mid-Columbia prices to reach the $1,000/MWh soft cap multiple times in January, although the California Independent System Operator (CAISO) market was largely insulated from these fluctuations. The ERCOT (Texas) market set a new peak of 85.5 GW on August 20, 2024, but ERCOT successfully managed the high load with much lower prices compared with 2023. In the eastern USA, including PJM, MISO (Midcontinent), ISO-NE (New England) and NYISO, power prices remained stable relative to 2023. Solar and wind generation continued to grow and, depending on their market penetration levels, impacted the hourly price profiles. Continued growth in renewable energy demand is expected in 2025, driven by the expansion of data centres.

Europe: Across Europe, power prices continued to fall for the second year in a row from the height of the energy crisis in 2022. Germany, France, the United Kingdom and Spain saw a reduction of between EUR 20/MWh and 30/MWh in their annual average wholesale power prices in 2024, compared with 2023. This was partly due to depressed demand, more output from wind power generation in the winter months and record-setting solar power output in the summer. German power prices are still among the highest on the continent with an annual average of EUR 79/MWh. Germany is testing a new auction mechanism for excess power to be used by flexible loads as a means of managing the increasing number of negative price hours. More than 32 GW of wind capacity was awarded by European governments in auctions this year. Nearly 10 GW of Europe's oldest remaining coal-fired power stations were retired this year; the majority were retired in Germany, while the UK and Denmark closed their last coal plants. Power prices show an increasing dependence on solar and wind generation, reaching more than EUR 800/MWh during a period of very low solar and wind power generation in Germany in early November. In 2025, a policy shift towards economic competitiveness is likely, potentially paired with protectionist interventions in Europe. Issues such as operational flexibility and grid infrastructure are being addressed by, for example, increased battery investments and market changes, such as the transition to 15-minute trading intervals in all bidding zones of the European Single Day-Ahead Coupling market.

Australia: The volume-weighted average prices (VWAP) in the east coast National Electricity Market (NEM) averaged about A$130/MWh in 2024, increasing from around A$90/MWh in 2023. The west coast Wholesale Electricity Market (WEM) saw a more modest year-on-year VWAP increase from roughly A$90/MWh to around A$95/MWh. The VWAP of the east coast domestic gas markets (Brisbane, Sydney, Adelaide and the Declared Wholesale Gas Market (DWGM)) rose to around A$12.75/GJ in 2024 from around A$11.70/GJ in 2023. Meanwhile, in Western Australia the average gas price rose to around A$7.10/GJ in 2024 from about A$6.15/GJ in 2023. In addition to higher power prices, price volatility also increased compared with the previous year in both the NEM and WEM, largely due to increasing levels of rooftop solar generation which pushed network demand to record lows and led to prolonged periods of negative prices. In the NEM, cold weather, low wind and low hydroelectric generation in the second quarter and early third quarter put upward pressure on prices and led to greater reliance on gas-powered generation, increasing domestic gas demand. A key development to watch in 2025 is the outcome of the federal election, given the differing policies of the incumbent and opposition parties on the role of gas and power generation technologies.

Crude oil and natural gas price assumptions

Our ability to deliver competitive returns and pursue commercial opportunities depends on the accuracy of our price assumptions. We use a rigorous assessment of short-, medium- and long-term market uncertainties to determine which ranges of future crude oil and natural gas prices to use in project and portfolio evaluations. Market uncertainties include, for example, future economic conditions, geopolitics, actions by major resource holders, production costs, technological progress and the balance of supply and demand.

See "Risk factors" on page 135 and Note 12 to the "Consolidated Financial Statements" on pages 275-276.

Refining and chemical margins

Refining margins declined in 2024 from the high levels seen in 2022 and 2023. Despite conflicts in the Middle East and a continuing war in Ukraine, supply chains have adjusted to keep the Atlantic Basin well supplied, particularly with middle distillate to Europe. There were some shipping disruptions in the Red Sea at the start of 2024 which reduced the amount of oil products coming into Europe from East of Suez. This led to a spike in margins when combined with a heavy first-quarter refinery maintenance season in the Atlantic Basin. However, once the refineries came back online and supplies to Europe came in via the Cape of Good Hope, margins dropped to more normal levels. Moreover, demand growth has been limited with the Eurozone economy struggling, China's lower economic growth and muted growth in US gasoline demand.

The margin for 2025 is expected to be in line with 2024 levels. Oil product demand growth is likely to be weak and concentrated in Latin America, South-east Asia and India as economic growth is likely to remain sluggish in China and weak in Europe, and as electric vehicle penetration ramps up. New refinery capacity in India and China is still coming online and the major Atlantic Basin projects, Olemca (Mexico) and Dangote (Nigeria), will ramp up production in 2025 although neither site is expected to reach full capacity in 2025. Some support for refining margins will come from announced site closures in California, the US Gulf Coast and Europe. In addition, US gasoline stocks remain low and this could lead to a spike in margins if there is a supply disruption. Lower crude oil prices could also support more demand growth.

Chemical cracker margins remained pressured in 2024 because of global oversupply and weak demand. Asia and Europe saw slight relief with lower crude prices, but both regions remained under significant pressure. Cracker utilisation continued to drift lower with the start-up of new Asian capacity. Europe remained under strain with high energy costs as various producers, including LyondellBasell Industries (LB)I and Dow Inc., announced closures and portfolio reviews.

The outlook for petrochemical margins in 2025 and beyond depends on feedstock costs and the balance of supply and demand. Global oversupply is expected to persist through the year with a slow demand recovery. A recovery in demand is needed to absorb excess capacity. The supply of petrochemicals will depend on how new facilities come online and how plant closures will impact net capacity, with utilisation balancing the system. Product prices will reflect the cost of raw materials, which is closely linked to crude oil and natural gas prices. Increasing volatility driven by political and upstream price uncertainty will present short-term localised opportunities to bolster returns.

Refining margins

Global indicative refining margin [A]

$/bbl

	2024	2023	2022
Indicative refining margin	7.74	12.45	18.03

[A] The indicative refining margin (IRM) is an approximation of Shell's global gross refining unit margin, calculated using price markers from third-party databases. It is based on a simplified crude and product yield profile at a nominal level of refining performance. The actual margins realised by Shell may vary due to factors including specific local market effects, refinery maintenance, crude diet optimisation as the crudes in the IRM are indicative benchmark crudes, operating decisions and product demand. Gross refining unit margin is defined as the hydrocarbon margin net of purchased/sold utilities, additives and relevant freight costs, divided by crude and feedstock intake in barrels. It is only applicable to the impact of market pricing on refining business performance, excluding trading margin.

Petrochemical margins

Global indicative chemical margin [A]

$/tonne

	2024	2023	2022
Indicative chemical margin	151.72	132.63	48.04

[A] The indicative chemical margin (ICM) is an approximation of Shell's global chemical margin performance trend (including equity-accounted associates), calculated using price markers from third-party databases. It is based on a simplified feedstock and product yield profile at a nominal level of plant performance. The actual margins realised by Shell may vary due to factors including specific local market effects, chemical plants maintenance, optimisation, operating decisions and product demand. Chemical unit margin is defined as the hydrocarbon margin net of purchased/sold utilities, additives and relevant freight costs, divided by a nominal denominator expressed in metric tonnes. It is only applicable to the impact of market pricing on Chemicals business performance.

The statements in this "Market overview" section are forward-looking statements based on management's current expectations and certain material assumptions and, accordingly, involve risks and uncertainties that could cause actual results, performance or events to differ materially from those expressed or implied herein.

See "About this Report" on pages v-vi and "Risk factors" on page 135.

Integrated Gas

Integrated Gas includes liquefied natural gas (LNG) and the conversion of natural gas into gas-to-liquids (GTL) fuels and other products. It includes natural gas and liquids exploration and extraction, and the operation of the upstream and midstream infrastructure necessary to deliver these to market. Integrated Gas also includes the marketing, trading and optimisation of LNG.

9.6
Segment earnings ($ billion)
(2023: 7.1)

11.4
Adjusted Earnings ($ billion)
(2023: 13.9)

16.9
Cash flow from operating activities ($ billion)
(2023: 17.5)

954
Production (thousand boe/d)
(2023: 939)

29
LNG liquefaction volumes (million tonnes)
(2023: 28)

66
LNG sales volumes (million tonnes)
(2023: 67)

Integrated Gas performed well as we increased LNG liquefaction volumes and our access to third-party volumes. We boosted our operational performance. In Australia, Prelude and QGC achieved record availability, resulting in their highest ever production. During the year, we extended partnerships in Oman and decided to invest in the ADNOC Ruwais LNG project in Abu Dhabi [A]. We also took final investment decisions on a number of key projects, including Manatee in Trinidad and Tobago, and agreed to acquire Pavilion Energy in Singapore [A]. See "Outlook" on pages 16-17 for our Capital Markets 2025 investor update.

Business conditions

For the business conditions relevant to Integrated Gas, see "Market overview" on pages 28-30.

Financial delivery

Earnings 2024-2023

Segment earnings increased by $2,533 million compared with 2023. This was a result of higher volumes (increase of $514 million), lower operating expenses (decrease of $478 million), and favourable deferred tax movements ($399 million) compared with 2023. Furthermore, this included the combined effect of lower contributions from trading and optimisation and lower realised prices (decrease of $3,819 million compared with 2023), partly offset by a comparative help relating to fair value accounting of commodity derivatives (unfavourable movement of $1,088 million in 2024 compared with an unfavourable movement of $4,407 million in 2023 which are part of identified items). Segment earnings in 2024 also included net impairment charges and reversals of $363 million (2023: $2,247 million), which are part of identified items.

As part of Shell's normal business, commodity derivative hedge contracts are entered into for mitigation of economic exposures on future purchases, sales and inventory.

Adjusted Earnings and Adjusted EBITDA were driven by the same factors as the segment earnings, and adjusted for identified items.

Prior year earnings summary

Segment earnings in 2023 were lower in comparison to 2022 and reflected the net effect of lower realised prices and higher contributions from trading and optimisation (a decrease of $1,143 million), lower volumes (a decrease of $466 million), and unfavourable deferred tax movements (a decrease of $728 million).

Segment earnings included identified items: mainly unfavourable movements of $4,407 million due to the fair value accounting of commodity derivatives and net impairment charges and reversals of $2,247 million. In 2022, identified items included favourable movements of $6,273 million due to the fair value accounting of commodity derivatives and net impairment reversals of $779 million. In 2022, these were partly offset by other impacts of $608 million, mainly loan write-downs, as well as charges of $387 million as provisions for onerous contracts.

Adjusted Earnings and Adjusted EBITDA were driven by the same factors as the segment earnings, and adjusted for identified items.

[A] Transaction subject to completion.
* Non-GAAP measure (see page 445).

Key metrics [B]

	$ million, except where indicated		
	2024	2023	2022
Segment earnings*[C]	9,590	7,057	22,221
Identified items	(1,800)	(6,861)	6,075
Adjusted Earnings* [C]	11,390	13,919	16,146
Adjusted EBITDA* [C]	20,978	23,773	26,581
Cash flow from operating activities	16,909	17,520	27,692
Cash capital expenditure*	4,767	4,196	4,265
Liquids production available for sale (thousand b/d)	132	128	128
Natural gas production available for sale (million scf/d)	4,769	4,700	4,600
Total production available for sale (thousand boe/d)	954	939	921
LNG liquefaction volumes (million tonnes)	29.1	28.3	29.7
LNG sales volumes (million tonnes)	65.8	67.1	66.0

[B] See Note 7 to the "Consolidated Financial Statements" which includes an explanation of the reporting segment changes applicable from 2024.
[C] Segment earnings, Adjusted Earnings, and Adjusted EBITDA are presented on a current cost of supplies basis.

Cash flow from operating activities

Cash flow from operating activities for 2024 was primarily driven by Adjusted EBITDA and working capital inflows of $467 million, partly offset by tax payments of $2,955 million and net cash outflows related to derivatives of $1,466 million.

Shell's policy is to settle the inter-segment use of tax attributes between business segments. This settlement is usually made in cash but in certain instances there is no cash settlement. In 2024, the Integrated Gas segment's deferred tax assets ($974 million) were mainly used by the Upstream ($759 million) and Chemicals and Products ($183 million) segments, for which no cash settlement was made.

Cash capital expenditure

Our cash capital expenditure in 2024 was higher than in 2023. The increase was mainly a result of maturation of projects in Trinidad and Tobago and Australia, as well as higher maintenance in Pearl GTL. Our cash capital expenditure* is expected to be around $6 billion in 2025 in Integrated Gas.

Operational performance

Production available for sale

Our natural gas production increased by 2% in 2024 compared with 2023, mainly due to the ramp-up of fields in Oman and Australia. In this period, natural gas and liquids made up 86% and 14% of total production, respectively.

LNG liquefaction and sales volumes

Our LNG liquefaction volumes increased by 3% compared with the previous year, mainly due to lower maintenance in Australia.

LNG sales volumes decreased primarily because of lower purchases from third parties, coupled with higher inventory at the end of the year.

Integrated Gas data table

LNG liquefaction volumes

Million tonnes

	2024	2023	2022
Australia	14.4	13.3	13.2
Brunei	1.2	1.1	1.2
Egypt	–	0.3	0.5
Nigeria	3.5	3.3	3.6
Oman	2.8	2.7	2.8
Peru	0.9	0.8	0.8
Qatar	2.3	2.4	2.4
Russia	–	–	0.9
Trinidad and Tobago	4.0	4.3	4.3
Total	29.1	28.3	29.7

Strategic progress

Portfolio and business developments

Significant portfolio and business developments:

- In June 2024, we agreed to acquire 100% of the shares in Singapore-based Pavilion Energy Pte. Ltd. from Carne Investments Pte. Ltd., a wholly owned subsidiary of Temasek. Pavilion Energy includes a global LNG trading business with about 6.5 mtpa of contracted supply volume [A].
- In July 2024, we took the final investment decision (FID) on the Manatee project, a gas field in the East Coast Marine Area (ECMA) in Trinidad and Tobago.
- In July 2024, we signed an agreement to invest in the Abu Dhabi National Oil Company's (ADNOC) Ruwais LNG project through a 10% participating interest [A]. The project will consist of two 4.8 mtpa LNG liquefaction trains with a total capacity of 9.6 mtpa. LNG deliveries are expected to start in 2028.
- In August 2024, Arrow Energy, an incorporated joint venture between Shell (50%) and PetroChina (50%), announced the sanction of Phase 2 of Arrow Energy's Surat Gas Project in Queensland, Australia.

During 2024, we continued to grow our world-leading LNG business. We invested in our existing assets, for example taking a final investment decision on the Manatee gas project in Trinidad and Tobago and by going ahead with projects to supply gas at our LNG facilities in Australia, such as Surat Gas Project North.

Manatee is expected to start production in 2027 and, once online, is expected to reach peak production of about 104,000 barrels of oil equivalent per day (boe/d) (604 MMscf/d). It will provide backfill for the country's Atlantic LNG facility and to the petrochemical sector. Increasing utilisation at existing LNG plants is an important lever to maximise potential from Shell's existing assets. We also undertook the Phase 1 of the commercial restructuring of Atlantic LNG in Trinidad and Tobago in 2024 in an effort to simplify the structure of the project. The remaining phases are expected to be completed by 2027.

[A] Transaction subject to completion.

Shell completes its largest ever turnaround at Pearl GTL
In 2024, more than 16,000 workers converged on the Pearl GTL gas-to-liquids facility in Qatar to carry out maintenance and repair work over 56 days on Pearl GTL's Train 2 production line. The turnaround was completed on schedule and at a competitive cost – a clear example of how Shell, the operator, is focusing on performance and discipline as we implement our strategy.

Turnaround events, like this one, are planned, periodic shutdowns of a manufacturing facility for maintenance and repair work that cannot be conducted while the facility is fully operational. These events are crucial for maintaining the integrity and reliability of the facility. Throughout the turnaround, Pearl GTL's Train 1 remained operational, ensuring continuous supply of GTL products used by global customers in sectors from industry to transport.

Planning for the event started more than three years prior, and during the execution phase teams worked around the clock, making it a 24/7 event. The effective execution included nearly 10,000 heavy lifts, more than 14,000 flanges opened, and 2,700 field welds completed, resulting in over 9 million exposure hours with no significant incidents.

In recent years, Pearl GTL has been operating with high safety, reliability and availability performance. In 2024, Pearl achieved its second-best year for reliability with unplanned downtime at 1.4%. In the same year, Pearl also achieved its lowest greenhouse gas (GHG) intensity since start-up and was the largest GHG abatement contributor to the Shell scorecard.

Learning from the previous turnaround in 2022, Pearl GTL reduced flaring by approximately 19% during this event. Overall, Pearl GTL has reduced total flaring by 75% since 2016.

Despite the challenge of a turnaround this size, we continued to place a strong emphasis on worker welfare. This was a critical success factor in ensuring we had a healthy and focused team when it mattered most – on the job, at the point of risk.

This turnaround was conducted in close partnership with Qatar's state energy company – QatarEnergy. Collaborating and consulting during every phase of the project ensured successful completion, supporting reliable and safe future operations.

Photo: Pearl GTL Plant, Qatar.

The Surat Gas Project Phase 2 is expected to contribute around 22,400 barrels of oil equivalent per day (or 130 million standard cubic feet per day) at peak production and first gas is expected in 2026. The gas from the project will flow to the Shell-operated Queensland Curtis LNG (QCLNG) facility on Curtis Island, near Gladstone, to meet long-term contracts and supply domestic customers.

We announced the investment in new projects such as Pavilion Energy in Singapore, which will add to our current sales and bring flexibility to our portfolio, as well as additional access to strategic gas markets in Asia and Europe. The 10-year LNG supply agreement that we signed with Boru Hatları ile Petrol Taşıma AŞ (BOTAS) of Turkey in 2024, will also increase the diversity and flexibility of our portfolio.

We also continued growing our portfolio through the construction of new lower-carbon intensity LNG plants, for example with the agreement to invest in the Ruwais LNG project that will use an electric-powered liquefaction system and has access to nuclear and solar power. The transaction is still subject to completion.

Finally, in 2024, we made good progress at LNG Canada, the single largest private-sector energy investment in Canada's history. The facility is expected to initially export up to 14 million tonnes of LNG per annum, contributing up to 5.6 mtpa to Shell's global LNG supply portfolio. The project is on track to ship its first cargoes to global markets by the middle of 2025. LNG Canada has also been designed with energy-efficient natural gas turbines and is expected to use renewable power from an electric utility in the province of British Columbia.

Business and property

Integrated Gas

A complete list of LNG and GTL plants in operation and under construction in which we have an interest is provided below.

LNG liquefaction plants in operation at December 31, 2024 [A]

	Asset	Location	Shell interest (%)	100% capacity (mtpa) [B]	Shell-operated
Asia					
Brunei	Brunei LNG	Lumut	25	7.6	No
Oman	Oman LNG	Sur	30	7.1	No
	Qalhat LNG [C]	Sur	11	3.7	No
Qatar	QatarEnergy LNG N(4) [D]	Ras Laffan	30	7.8	No
Oceania					
Australia	Australia North West Shelf [D]	Karratha	16.7	16.9	No
	Gorgon LNG [D]	Barrow Island	25	15.6	No
	Prelude [D]	Browse Basin	67.5	3.6	Yes
	Queensland Curtis LNG T1 [D]	Curtis Island	50	4.3	Yes
	Queensland Curtis LNG T2 [D]	Curtis Island	97.5	4.3	Yes
Africa					
Egypt	Egyptian LNG T1	Idku	35.5	3.6	No
	Egyptian LNG T2	Idku	38	3.6	No
Nigeria	Nigeria LNG T1-T6	Bonny	25.6	24.1	No
South America					
Peru	Peru LNG	Pampa Melchorita	20	4.5	No
Trinidad and Tobago	Atlantic LNG T1/T2/T3 [E]	Point Fortin	47.15	9.3	No
	Atlantic LNG T4	Point Fortin	51.1	5.2	No

[A] We have offtake rights via a lease to 100% of the capacity (2.5 mtpa) of the Kinder Morgan-operated Elba Island liquefaction plant in Georgia, USA.
[B] 100% capacity represents the total capacity that all trains can process as reported by the operator.
[C] The interest is held via an indirect shareholding through Oman LNG.
[D] These assets are clustered as integrated assets and have onshore or offshore upstream production.
[E] Shell % applies from October 1, 2024, as result of the agreement between Shell, the government of Trinidad and Tobago, and Atlantic LNG and its shareholders to restructure the Atlantic LNG facility. Prior to the restructuring, Shell's equity was 46% in T1 and 57.5% in T2/T3.

LNG liquefaction plants under construction at December 31, 2024 [A]

	Asset	Location	Shell interest (%)	100% capacity (mtpa) [B]	Shell-operated
Africa					
Nigeria	Train 7 [C]	Bonny	25.6	7.6	No
North America					
Canada	LNG Canada T1-2 [D]	Kitimat	40.0	14.0	No
Asia					
Qatar	QatarEnergy LNG NFE(2) [E]	Ras Laffan	25.0	8.0	No
	QatarEnergy LNG NFS(2) [F]	Ras Laffan	25.0	6.0	No

[A] In July 2024, we agreed to invest in the Ruwais LNG project in Abu Dhabi through a 10% participating interest. The Ruwais LNG project, which is already under construction, will consist of two 4.8 mtpa LNG liquefaction trains with a total capacity of 9.6 mtpa. LNG deliveries are expected to start in 2028. The deal is subject to completion.
[B] 100% capacity represents the total capacity that all trains are expected to process as reported by the operator.
[C] First LNG is expected in the second half of the 2020s.
[D] Construction started in October 2018 and first LNG is expected by mid-2025.
[E] Shell holds 25% in the joint venture, which owns 25% of the North Field East expansion project, which has a nameplate capacity of 32 mtpa. First LNG is expected in the second half of the 2020s.
[F] Shell holds 25% in the joint venture, which owns 37.5% of the North Field South expansion project, which has a nameplate capacity of 16 mtpa. First LNG is expected in the second half of the 2020s.

GTL plants in operation at December 31, 2024

	Asset	Location	Shell interest (%)	100% capacity (b/d) [A]	Shell-operated
Asia					
Malaysia	Shell MDS	Bintulu	72.0	14,700	Yes
Qatar	Pearl	Ras Laffan	100.0	140,000	Yes

[A] 100% capacity represents the total capacity of the plant.

LNG regasification terminals

In 2024, we held interests in regasification terminals: Dragon LNG in the UK (Shell interest 50%), Shell Energy India Pvt Ltd (Shell interest 100%) and Shell LNG Gibraltar (Shell interest 51%). We had rights in other regasification terminals in Mexico (Shell capacity rights 2.7 mtpa), the Netherlands (Shell capacity rights 4.6 mtpa), Singapore (mainly licences to import LNG and sell regasified LNG in Singapore with no volume cap) and the USA (total Shell capacity rights 24.7 mtpa). Total Shell regasification capacity rights were 7.7 mtpa in Europe, 27.4 mtpa in North America and 6 mtpa in Asia.

Oil and natural gas production, exploration and development

Australia

We operate the Queensland Curtis LNG (QCLNG) venture's natural gas operations in the onshore Surat Basin. Our interests range from 44% to 74% in 25 field compression stations and six central processing plants. Gas from the Surat Basin is supplied to the QCLNG liquefaction plant and the domestic gas market. Also in Queensland, we have a 50% interest in the Arrow joint venture with China National Petroleum Corporation (CNPC). Arrow owns coalbed methane assets and a domestic power business. In August 2024, we announced plans to develop Phase 2 of Arrow Energy's Surat Gas Project.

Shell has interests in offshore production, LNG liquefaction and exploration licences in the Browse Basin, and in the North West Shelf (NWS) and Greater Gorgon areas of the Carnarvon Basin. Woodside operates the NWS joint venture (Shell interest 16.7%). We have a 25% interest in the Chevron-operated Gorgon LNG joint venture that includes offshore production. In the Browse Basin, Shell operates the Prelude field (Shell interest 67.5%), the Crux gas and condensate development field (Shell interest 84.5%) and other backfill projects for the Prelude FLNG.

Bolivia

We have a 37.5% interest in the Repsol-operated Caipipendi block where natural gas is produced and delivered to domestic and export markets. We also have a 25% interest in the Tarija XX West block which produces from the Itaú field.

Canada

We produce and market natural gas, natural gas liquids and condensate. We hold mineral acres, primarily in the Montney play in British Columbia and Alberta. We operate four natural gas processing facilities at our Groundbirch asset in British Columbia with another natural gas processing facility that will be commissioned and operational in early 2025. Shell's working interest across the Groundbirch acreage ranges from 88% to 92%.

Photo: Shell Canada Integrated Gas employees at work on a pipeline project, Fort St. John, British Columbia.

China
We develop and produce from the onshore Changbei tight-gas field under a PSC with China National Petroleum Corporation.

Egypt
We have a range of venture and concession interests. The Burullus Gas Company joint venture (Shell interest 25%) operates the West Delta Deep Marine concession (Shell interest 50%) and supplies gas to the domestic market and an Egyptian LNG plant. The Rashid Petroleum Company (Rashpetco) joint venture (Shell interest 50%) operates the Rosetta concession (Shell interest 100%). The El Burg Offshore Company (EBOC) joint venture (Shell interest 30%) operates the El Burg offshore concession (Shell interest 60%).

We also have interests in several exploration concessions in the Nile Delta and the wider East Mediterranean.

Oman
We have a concession agreement for the development and production of natural gas and condensate in the Shell-operated Block 10 (Shell interest 53.45%). We have a separate gas sales agreement and oil supply agreement for production from the block. We also have an exploration and production-sharing agreement for the exploration and appraisal of natural gas and condensate in the Shell-operated Block 11 (Shell interest 67.5%).

Qatar
Under a development and production-sharing contract with the government, we operate the fully integrated Pearl GTL plant (Shell interest 100%). Pearl GTL has the capacity to produce, process and transport 1.6 billion standard cubic feet per day (scf/d) of gas from Qatar's North Field.

We have a 30% interest in QatarEnergy LNG N(4), an integrated onshore gas-processing facility operated by QatarEnergy LNG, which can produce around 1.4 billion scf/d of gas from Qatar's North Field. We also have a 25% interest in the QatarEnergy LNG NFE(2) joint venture, which owns a 25% interest in the North Field East (NFE) project. Shell's ownership of NFE via the joint venture is 6.25%. In addition, we have a 25% interest in the QatarEnergy LNG NFS(2) joint venture which owns a 37.5% interest in the North Field South (NFS) project. Shell's ownership of NFS via the joint venture is 9.375%.

Russia
In 2022, Shell announced its intent to withdraw in a phased manner from its involvement in all Russian hydrocarbons, including crude oil, petroleum products, gas and LNG. Shell still holds a 27.5% (minus one share) interest in Sakhalin Energy Investment Company Ltd. (SEIC), a Bermudan entity, which purportedly no longer holds any licences, rights and obligations in Sakhalin-2. Shell still holds one long-term LNG purchase contract with a Novatek entity.

Trinidad and Tobago
We have interests in three concessions with producing fields: Central Block (Shell interest 65%), North Coast Marine Area (Shell interest 80.5%) and East Coast Marine Area (Shell interest 100%), where in July 2024 we took an FID on the Manatee project.

In 2024, we signed a Sales and Purchase Agreement (SPA) with Touchstone Exploration Trinidad Limited for the sale of our interest in the Central Block facility. We expect to complete this transaction in the first half of 2025.

We have a 100% interest in exploration blocks 5(c)REA, 5(d) and 6(d). We also have a 50% interest in exploration blocks 25a, 25b and 27 in the Columbus Basin. We operate Block 27 and bp is the operator of the remaining two. Furthermore in 2024, we signed the PSC for modified block U(c) (Shell share 100%).

Other
We also have interests in Barbados, Colombia, Cyprus, Tanzania and Venezuela.

Trading and Optimisation
Our trading organisation markets and sells a portion of our share of equity production of LNG and third-party LNG through our UK, UAE and Singapore trading hubs. We have term sales contracts for most of our LNG liquefaction and term purchase contracts. Our shipping network, regasification terminals, and ability to buy and deliver spot cargoes from third parties enable us to optimise the income we generate from our LNG cargoes. For example, if a customer no longer needs a scheduled cargo, we can deliver it to another customer. Similarly, if a customer needs an additional cargo not available from our own production, we contract with third parties to deliver that cargo. We conduct paper trades, primarily to manage commodity price risk related to sales and purchase contracts.

Increasing natural gas and LNG production in Australia

We continue to grow our natural gas and liquefied natural gas (LNG) businesses in Queensland, Australia, by supplying increasing volumes of natural gas to the domestic market and LNG to customers in Asia.

Shell QGC (Shell interest between 44% and 74%) produces natural gas from wells drilled into coal seams in the Surat Basin. Extending across several thousand square kilometres, Shell QGC's operations span around 3,500 wells (gross), gas processing infrastructure and the two-train Shell-operated QCLNG facility on Curtis Island.

In 2024, QGC celebrated 10 years of LNG production and export by achieving its highest production levels ever.

We also announced plans to develop Phase 2 of Arrow Energy's Surat Gas Project (Shell interest 50%, non-operated) in Queensland, which is expected to contribute around 22,400 barrels of oil equivalent (130 million standard cubic feet) per day at peak production. First gas is expected in 2026. Gas from the project will flow to Shell's QCLNG facility to meet long-term contracts and supply domestic customers.

Long-term supplies of Australian LNG can help support the energy security and net-zero emission ambitions of countries in Asia. QCLNG has shipped more than 1,100 cargoes of LNG to customers since it began operating in 2014. The increase in production capacity at QGC and Arrow Energy will make a significant contribution to Shell's plan to grow its LNG business.

Shell QGC has long used advanced technology such as sensors, drones and satellites to detect potential methane leaks from its extensive infrastructure and improve emissions reporting. This has helped QGC reduce reported methane emissions by 70% compared with 2016. Shell's aim is to maintain methane emissions intensity for global operated oil and gas assets below 0.2%, which we met in 2024, and achieve near-zero methane emissions by 2030 [A].

Shell QGC contributes significantly to Australia's economy through the stable supply of gas for power generation, manufacturing and transport. It also supports local communities through employment programmes and initiatives, and provides educational support, skills development training and economic development assistance for First Nations people and communities. In 2024 alone, Shell QGC spent AUD 322 million with local suppliers in regional Queensland.

1. Shell QGC is a leading natural gas producer in Queensland, Australia. QGC includes a two-train LNG facility (pictured), which produces LNG for international markets.

2. Staff at Shell QGC's training centre in Chinchilla, Queensland. Shell QGC has employed more than 400 apprentices and trainees in the past decade.

[A] On an intensity basis.

Upstream

The Upstream segment includes exploration and extraction of crude oil, natural gas and natural gas liquids. It also markets and transports oil and gas, and operates the infrastructure necessary to deliver them to the market. Shell has activities in deep water and conventional oil and gas.

7.8
Segment earnings ($ billion)
(2023: 8.5)

8.4
Adjusted Earnings ($ billion)
(2023: 9.8)

21.2
Cash flow from operating activities ($ billion)
(2023: 21.5)

1,831
Production (thousand boe/d)
(2023: 1,800)

In 2024, Upstream delivered consistent performance through improved operations, cost reductions, portfolio optimisation and strategic investments. Our assets improved their availability and reliability, and we completed several major scheduled maintenance activities ahead of time, paving the way for higher production. We reached several milestones as part of our strategy to focus on high-margin basins, including investments in projects like the Atapu-2 field, which will increase our offshore production capacity in Brazil, and achieving first gas from Malaysia's Jerun field. We also took the final investment decision on the Vito waterflood project in the Gulf of America, and on Bonga North in the Gulf of Guinea — demonstrating how we can secure long-term value from existing assets. Our Whale platform, also in the Gulf of America, started production in January 2025 and is an example of how we are building on four decades of deep-water expertise and replicating innovative projects for more value. See "Outlook" on pages 16-17 for our Capital Markets 2025 investor update.

Business conditions

For the business conditions relevant to Upstream, see "Market overview" on pages 28-30.

Financial delivery

Earnings 2024-2023

Segment earnings decreased by $768 million compared with 2023. This reflected unfavourable tax movements ($1,289 million), lower realised prices (a decrease of $949 million) and higher well write-offs (an increase of $541 million), partly offset by the comparative favourable impact of $962 million mainly relating to gas storage effects. Segment earnings in 2024 also included a loss of $325 million related to the impact of the weakening Brazilian real on a deferred tax position, net impairment charges and reversals of $323 million and charges of $214 million related to redundancy and restructuring, partly offset by gains of $638 million related to the impact of inflationary adjustments in Argentina on a deferred tax position. These charges and gains are part of identified items and compare with 2023, where segment earnings included net impairment charges and reversals of $642 million, and net charges of $295 million related to the impact of the weakening Argentine peso and strengthening Brazilian real on a deferred tax position.

Adjusted Earnings and Adjusted EBITDA were driven by the same factors as the segment earnings and adjusted for identified items.

Prior year earnings summary

Segment earnings, compared with 2022, mainly reflected lower realised oil and gas prices (decrease of $5,696 million) and lower volumes (decrease of $2,001 million).

Segment earnings in 2023 also included net impairment charges and reversals of $642 million, and net charges of $295 million, which related to the impact of the weakening Argentine peso and strengthening Brazilian real on a deferred tax position. These charges and gains are part of identified items and compare with 2022, where segment earnings included net impairment reversals and charges of $853 million, and charges of $1,385 million relating to the EU solidarity contribution and $802 million relating to the UK Energy Profits Levy.

Adjusted Earnings and Adjusted EBITDA were driven by the same factors as the segment earnings and adjusted for identified items.

* Non-GAAP measure (see page 445).

Key metrics [A]

	$ million, except where indicated		
	2024	2023	2022
Segment earnings*[B]	7,772	8,540	16,258
Identified items	(623)	(1,267)	(1,096)
Adjusted Earnings* [B]	8,395	9,806	17,355
Adjusted EBITDA* [B]	31,264	30,622	42,144
Cash flow from operating activities	21,244	21,450	29,641
Cash capital expenditure*	7,890	8,343	8,143
Liquids production available for sale (thousand b/d)	1,320	1,325	1,333
Natural gas production available for sale (million scf/d)	2,964	2,754	3,272
Total production available for sale (thousand boe/d)	1,831	1,800	1,897

[A] See Note 7 to the "Consolidated Financial Statements" which includes an explanation of the reporting segment changes applicable from 2024.
[B] Segment earnings, Adjusted Earnings, and Adjusted EBITDA are presented on a current cost of supplies basis.

Cash flow from operating activities

Cash flow from operating activities for 2024 was primarily driven by Adjusted EBITDA, partly offset by tax payments of $7,851 million and the timing impact of dividends (net of profits) from joint ventures and associates of $946 million.

Shell's policy is to settle the inter-segment use of tax attributes between business segments. This settlement is usually made in cash but in certain instances there is no cash settlement. In 2024, the Integrated Gas segment's deferred tax assets ($974 million) were mainly used by the Upstream ($759 million) and Chemicals and Products ($183 million) segments, for which no cash settlement was made.

Cash capital expenditure

Cash capital expenditure in 2024 was lower compared with 2023. The decrease was mainly a result of projects ramp-up in the Gulf of America and Brazil in 2023. This was partially offset by higher spend from projects in Nigeria and the UK in 2024. Cash capital expenditure* is expected to be around $7 billion in 2025.

Operational performance

Production available for sale

In 2024, liquids production was flat and natural gas production increased by 8%, compared with 2023.

Total production, compared with 2023, increased mainly due to new liquids and gas production, partly offset by field decline.

Strategic progress

Portfolio and business developments

Significant portfolio and business developments:

- In May 2024, the Petrobras-operated Atapu consortium (Shell interest 16.7%) announced a final investment decision (FID) for the Atapu-2 project, a second floating production, storage and offloading (FPSO) vessel to be deployed at the Atapu field in Brazil's offshore Santos basin.
- In July 2024, first gas was achieved at the Jerun field (Shell interest 30%) in Malaysia. Jerun is operated by SapuraOMV Upstream (40%) in partnership with our subsidiary Sarawak Shell Berhad and PETRONAS Carigali Sdn Bhd (30%).
- In August 2024, we announced an FID on a waterflood project at our Vito asset in the Gulf of America. Water will be injected into the reservoir formation to displace additional oil.

- In October 2024, we announced the start of production of the FPSO Marechal Duque de Caxias in the Mero field, in the pre-salt area of the Santos Basin, offshore Brazil. Also known as Mero-3, the FPSO has an operational capacity of 180,000 barrels of oil per day (Shell share 19.3%).
- In December 2024, we, along with Equinor ASA, announced to combine our UK offshore oil and gas assets and expertise to form a new company which will be the UK North Sea's biggest independent producer. On deal completion, the new independent producer will be jointly owned by Equinor (50%) and Shell (50%). Completion of the transaction remains subject to approvals and is expected by the end of 2025.
- In December 2024, we announced a final investment decision (FID) on Bonga North, a deep-water project off the coast of Nigeria. Shell (55%) operates the Bonga field in partnership with Esso Exploration and Production Nigeria Ltd. (20%), Nigerian Agip Exploration Ltd. (12.5%), and TotalEnergies Exploration and Production Nigeria Ltd. (12.5%), on behalf of the Nigerian National Petroleum Company Limited.
- In January 2025, we announced the start of production at the Shell-operated Whale floating production facility in the Gulf of America. The Whale development is owned by Shell (60%, operator) and Chevron U.S.A. Inc. (40%).
- In February 2025, we announced production restart at the Penguins field in the UK North Sea with a modern floating, production, storage and offloading (FPSO) facility (Shell 50%, operator; NEO Energy 50%). The previous export route for this field was via the Brent Charlie platform, which ceased production in 2021 and is being decommissioned.
- In February 2025, we signed an agreement to acquire a 15.96% working interest from ConocoPhillips Company (COP) in the Shell-operated Ursa platform in the Gulf of America. Shell's working interest in the platform, pipeline and associated fields will increase from around 45.39% to a maximum of 61.35%. The transaction is subject to regulatory and other conditions, and is expected to be completed by the end of the second quarter of 2025.
- On March 13, 2025, we completed the sale of The Shell Petroleum Development Company of Nigeria Limited (SPDC) to Renaissance.

Business and property

Our subsidiaries, joint ventures and associates are involved in all aspects of upstream activities. These activities include land tenure and the exploration, development and production of crude oil, natural gas and natural gas liquids. They also include the marketing and transportation of oil and gas, as well as the operation of the infrastructure necessary to deliver them to market.

The conditions of the leases, licences and contracts under which oil and gas interests are held vary from country to country. In almost all cases outside North America, legal agreements are generally granted by, or entered into with, a government, state-owned company, government-run oil and gas company or agency. The exploration risk usually rests with the independent oil and gas company. In North America, these agreements may also be with private parties that own mineral rights. Of these agreements, the following are most relevant to our interests:

- Licences (or concessions), which entitle the holder to explore for hydrocarbons and exploit any commercial discoveries. Under a licence, the holder bears the risk of exploration, development and production activities, and is responsible for financing these activities. In principle, the licence holder is entitled to the totality of production less any royalties in kind. The government, state-owned company or government-run oil and gas company may sometimes enter into a joint arrangement as a participant, sharing the rights and obligations of the licence but usually without sharing the exploration risk. In a few cases, the state-owned company, government-run oil and gas company or agency has an option to purchase a certain share of production.
- Lease agreements, which are typically used in North America and are usually governed by terms similar to licences. Participants may include governments or private entities. Royalties are paid either in cash or in kind.
- Production-sharing contracts (PSCs) entered into with a government, state-owned company or government-run oil and gas company. PSCs generally oblige the independent oil and gas company, as contractor, to provide all the financing and bear the risk of exploration, development and production activities in exchange for a share of the production. Usually, this share consists of a fixed or variable part that is reserved for the recovery of the contractor's cost (cost oil). The remaining production is split with the government, state-owned company or government-run oil and gas company on a fixed or volume/revenue-dependent basis. In some cases, the government, state-owned company or government-run oil and gas company will participate in the rights and obligations of the contractor and will share in the costs of development and production. Such participation can be across the venture or on a field-by-field basis. Additionally, as the price of oil or gas increases above certain predetermined levels, the independent oil and gas company's entitlement share of production normally decreases, and vice versa. Accordingly, its interest in a project may not be the same as its entitlement.

Europe

Germany

Shell is a 50% shareholder in BEB Erdgas und Erdoel GmbH & Co. KG (BEB), which owns interests in various concessions, mainly in Lower Saxony. ExxonMobil Production Deutschland GmbH has a service contract with BEB, under which it provides operating services to BEB for most of the concessions.

Italy

Shell has a 39% interest in the Val d'Agri producing concession, operated by ENI S.p.A., and a 25% interest in the Tempa Rossa producing concession, operated by TotalEnergies EP Italia S.p.A.

Netherlands

Shell and ExxonMobil are 50:50 shareholders in Nederlandse Aardolie Maatschappij B.V. (NAM). NAM holds a 60% interest in the onshore low-calorific Groningen gas field (the remaining 40% interest is held by EBN, a Dutch government entity), the Schoonebeek oil field, some 25 smaller hydrocarbon production licences and two underground gas storage facilities.

Historical production from the Groningen field induces earthquakes which have led to damage claims, security concerns, and a strengthening operation to make buildings earthquake resistant.

In June 2018, NAM's shareholders and the Dutch government signed a Heads of Agreement (HoA) to inter alia reduce, and eventually cease, production from the Groningen field. Under the terms of the HoA, it was agreed that the Dutch government would pass on to NAM costs insofar as the costs corresponded to NAM's liability. Further agreements were signed to implement the HoA. Shell has put in place an appropriate security to fulfil its obligation under the HoA.

NAM is working with the Dutch government to fulfil its financial obligations for earthquake costs. These include compensating for damage caused by the earthquakes and paying to strengthen houses where this is required for safety. In 2022, NAM started arbitrations with the Dutch government to have its financial liability determined for the costs the Dutch government has charged to NAM in relation to the strengthening operation and the handling of claims for physical damage to property. The outcomes of these arbitrations are expected in 2025.

On the instructions of the Dutch government, production at the Groningen field ceased on October 1, 2023, and a law was passed to shut down the field permanently from April 19, 2024. On July 18, 2024, NAM signed an agreement to divest OneGas East, its offshore asset in the Dutch North Sea, to Tenaz Energy. The transaction is expected to be completed by mid-2025.

See Note 32 NAM (Groningen gas field) litigation in the "Consolidated Financial Statements" on page 309.

Norway

Shell holds participating interests in 15 production licences on the Norwegian continental shelf, and is the operator of three of these. In 2024, Shell was awarded one new licence, relinquished four licences and divested the Linnorm gas field. Shell has participating interests in two producing gas fields in Norway: Shell-operated Ormen Lange (Shell interest 17.8%) and Equinor-operated Troll (Shell interest 8.19%). In 2024, significant projects were executed at both assets. The Troll B and C platforms were partially electrified, which is expected to reduce annual emissions of CO_2 by 250,000 tonnes. At Ormen Lange, subsea compression, powered from shore, is being installed to enhance gas recovery.

Additionally, Shell holds a 10% participating interest in the Irpa gas discovery, operated by Equinor, which is under development. We operate two licences which are being decommissioned: Knarr and Gaupe. We are also the technical service provider for the Nyhamna gas facility, operated by Gassco, which processes and exports gas from several Norwegian fields.

UK

Shell operates a number of assets on the UK continental shelf, mostly under unincorporated joint-venture agreements. Shell also has non-operated positions in the West of Shetland area, including the Clair (Shell interest 27.97%) and Schiehallion (Shell interest 44.89%) fields, which are both operated by bp.

In December 2024, Shell, along with Equinor ASA, announced a combination of our UK offshore oil and gas assets and expertise to form a new company which will be the UK North Sea's biggest independent producer. On deal completion, the new independent producer will be jointly owned by Equinor (50%) and Shell (50%). Completion of the transaction remains subject to approvals and is expected by the end of 2025.

In April 2023, Shell restarted operations at the Pierce field (Shell interest 92.5%) in the North Sea after a major redevelopment to enable gas production after years of the field producing only oil. The Haewene Brim floating production, storage and offloading (FPSO) vessel, which produces from the Pierce field, was shut down between August 2023 and April 2024 to allow completion of mooring lines integrity works. The FPSO vessel is fully operational and back in production.

The operated Penguins FPSO vessel (Shell interest 50%) was successfully moored in the northern North Sea in September 2024 with first oil in February 2025.

Victory (Shell interest 100%), a subsea tieback to the Total-operated Greater Laggan Area facilities, is on track for an expected start-up in 2026. Priority work activities for 2024 were delivered ahead of schedule with new subsea pipelines installed in preparation for well execution in 2025.

Significant progress has also been made on the Jackdaw project (Shell interest 100%) in the North Sea and it is expected to become operational in the mid-2020s. On January 29, 2025, the Court of Session (Outer House) in Scotland ruled, in legal proceedings brought by the non-governmental organisation, Greenpeace, that the original consents for Jackdaw are no longer valid, though importantly, work on the project can continue while new consents are being sought. This ruling has not been appealed.

Within Shell's UK exploration portfolio, there is an ongoing judicial review by Oceana UK challenging the award of tranche three of the 33rd licensing round awards (including two licences awarded to Shell in the Mid-North Sea High area) which is expected to be heard by the High Court in March 2025.

In July 2024, Shell signed an agreement with RockRose Energy Limited, a subsidiary of Viaro Energy, to divest its equity stake in 11 gas fields and one exploration prospect in the UK Southern North Sea, as well as the onshore gas processing terminal in Bacton, England. The sale is subject to regulatory approvals and is expected to complete in 2025.

In July 2023, the UK government announced that the Acorn carbon capture, utilisation and storage project (Shell interest 30%) had been selected as one of two clusters to enter Track 2 of the UK's cluster sequencing process for carbon capture and storage (CCS). In 2024, Shell had expected to start more detailed discussions about the project with the UK government, but these have not yet commenced in earnest.

The Offshore Petroleum Regulator for Environment and Decommissioning (OPRED) continues to assess the Brent Field decommissioning programme for the Brent gravity-based substructures. The Brent Charlie topside was lifted and transported to shore in July 2024.

Decommissioning of the Heather A platform and Curlew FPSO asset continued in 2024. Shell is also continuing with the campaign of subsea well plug and abandonment activity to decommission 25 wells in the Central North Sea which began in 2023.

Rest of Europe

Shell also has interests in Albania.

Asia (including the Middle East)

Brunei

Shell and the Brunei government are 50:50 shareholders in Brunei Shell Petroleum Company Sendirian Berhad (BSP). BSP has long-term onshore and offshore oil and gas concession rights and sells most of its gas production to Brunei LNG Sendirian Berhad, with the remainder sold in the domestic market.

In addition to our interest in BSP, we have a non-operated 35% interest in the offshore Block B concession, which is operated by Hibiscus Petroleum. The gas and condensate are produced from the Maharaja Lela field.

We have a non-operated 20% interest under a PSC in a gas-holding area for deep-water Block CA2, which is operated by Petronas.

We operate the deep-water Block CA1 (Shell interest 86.95%) in which the Jagus East field is located and forms part of the unitised GKGJE field under a PSC. As referred to in the Malaysia section the unitised GKGJE field is operated by Shell Malaysia.

See "Integrated Gas" on pages 31-37.

Iraq

Shell has a 44% interest in the Basrah Gas Company, which gathers, treats and processes associated gas that was previously flared from the Rumaila, West Qurna 1 and Zubair fields. Processed gas and associated products, such as condensate and LPG, are sold to the domestic and international markets.

Karachaganak Expansion Project 1A completed
Karachaganak is one of the world's largest gas and condensate fields. It produces around 260,000 barrels of oil and condensate per day, which are processed by Karachaganak Petroleum Operating B.V. (KPO) for export. Shell is the joint operator, along with Eni, of the Karachaganak field (Shell interest 29.3%).

In 2024, KPO completed the Karachaganak Expansion Project 1A (KEP1A) to maintain production levels and extend the field's long productive life by reinjecting gas into the reservoir through a new fifth gas compressor. Around 7,000 local people were employed during construction.

The project was completed one month ahead of schedule, after starting in December 2020, and was delivered within budget. This success can be attributed to the resilience of the team who worked hard to achieve the result, despite the disruption caused by the COVID-19 pandemic and the nearby Russia–Ukraine war.

KEP1A is a key example of Shell's focus on performance and discipline.

KPO is now working on the installation of a sixth gas reinjection compressor as part of Karachaganak Expansion Project 1B to maintain pressure in the reservoir and keep production levels stable. The project is scheduled for completion in 2026.

Photo: Staff at Karachaganak, Kazakhstan.

Kazakhstan
Shell is the joint operator with ENI S.p.A. of the onshore Karachaganak oil and condensate field (Shell interest 29.3%) in north-west Kazakhstan which covers more than 280 square kilometres.

We also have a 16.8% interest in the North Caspian Sea PSA, which includes the Kashagan field in the Kazakh sector of the Caspian Sea. The North Caspian Operating Company is the operator. This shallow-water field covers around 3,400 square kilometres.

Shell has a 7.4% interest in the Caspian Pipeline Consortium (CPC), which owns and operates an oil pipeline running from the Caspian Sea to the Black Sea across parts of Kazakhstan and Russia. We hold our interest in the CPC via three legal entities. Two of these are wholly owned by Shell and the other is a joint venture with Rosneft, Rosneft-Shell Caspian Ventures Ltd (Cyprus) (RSCV) (Shell interest 49%), which was formed in 1996 to own and manage pipeline capacity rights. We continue to manage our interest in CPC held through RSCV in full compliance with applicable laws, including sanctions.

We have several matters in dispute involving non-operated ventures and the Republic of Kazakhstan, including court proceedings in respect of a sulphur permitting outcome and two arbitrations under the applicable production-sharing agreements. There remains a high degree of uncertainty regarding the outcomes, as well as the potential effect on future operations, earnings, cash flows and Shell's financial condition.

See Note 32 to the "Consolidated Financial Statements" on pages 308-310.

Kuwait
Shell Kuwait Exploration and Production B.V. (Shell interest 100%) holds three enhanced technical service agreements (ETSA) with Kuwait Oil Company. The ETSA Jurassic Gas runs to 2026, the ETSA Heavy Oil and ETSA Conventional Oil run to 2027.

Malaysia
Shell explores for and produces oil and gas off the coast of Sabah and Sarawak under 20 PSCs, in which our interests range from 20% to 92.5%.

Offshore Sabah
We operate two producing oil fields: the Malikai deep-water field (Shell interest 35%) in the Block G PSC, and the unitised Gumusut-Kakap Geronggong-Jagus East (GKGJE) field in the Block J PSC which straddles the Malaysia-Brunei border (Shell interest 37.89%).

We hold a 50% operated participating interest in exploration phase Block 2W, Block X, Block ND6 and Block ND7 PSCs. Our exploration activities in Block ND6 and Block ND7 PSCs were suspended in 2005 because of Malaysia's border disputes with Indonesia.

Our non-operated portfolio includes two producing fields: the unitised Siakap North-Petai deep-water field in Block G PSC (Shell interest 21%) and the Kebabangan Cluster PSC (Shell interest 30%). We also hold interests in exploration phase Block SB 2K, Block N and Block 2V PSCs, which range from 25.1% to 40%. In 2024, we signed a new non-operated PSC for Ubah Cluster, a deep-water project off the coast of Sabah (Shell interest 35%).

Offshore Sarawak
We are the operator of four PSCs producing gas and oil, holding interests ranging from 30% to 75% under the MLNG, SK308, SK408 and SK318 PSCs. Nearly all the gas produced offshore Sarawak is supplied to Malaysia LNG (MLNG) and to our gas-to-liquids plant in Bintulu. We also continue to explore in the MLNG PSC.

Photo: The Jerun offshore gas field (Shell interest 30%) in Malaysia achieved first gas in July 2024, adding to Shell's contribution to Malaysia's offshore gas production.

The SK318 PSC contains the Timi field (Shell interest 75%), the unitised Rosmari field (Shell interest 68%) and the unitised Marjoram field (Shell interest 72%). Rosmari-Marjoram is a natural gas project situated around 220 kilometres off the coast of Bintulu, comprising a remotely operated offshore platform and onshore gas plant. These fields will mainly be powered by renewable energy from solar power offshore and hydroelectric power onshore.

We hold participating interests ranging from 45% to 92.5% in the exploration phase Block SK437, Blocks SK439/440 and Block 3B PSCs. In 2024, we signed a new PSC for Block 5E (Shell interest 50%), a deep-water block off the coast of Sarawak.

In our non-operated portfolio, we hold a 20% interest in the Pegaga field under the Block SK320 PSC and a 30% interest in the Jerun, Larak and Bakong fields which are part of the SK408 PSC. Jerun achieved first gas in July 2024.

See "Integrated Gas" on pages 31-37.

Oman

Shell has a 34% interest in Petroleum Development Oman (PDO), which operates the Block 6 oil concession. Shell is entitled to 34% of oil produced from Block 6 through its interest in Private Oil Holdings Oman Ltd. The government of Oman has a 60% interest in PDO and the Block 6 oil concession through its wholly owned company, Energy Development Oman (EDO). PDO operates a concession area of about 90,000 square kilometres and has more than 200 producing oil fields.

We have a 50% interest in Block 42 under an exploration and production-sharing agreement (EPSA) where Shell is the operator. We also operate in Block 55 under an EPSA (Shell interest 100%). We are in the process of relinquishing our interests in Block 42 and Block 55 to the government.

See "Integrated Gas" on pages 31-37.

Syria

Shell holds a 65% interest in Syria Shell Petroleum Development B.V. (SSPD), a joint venture between Shell and the China National Petroleum Corporation. SSPD holds a 31.25% interest in Al Furat Petroleum Company, a Syrian joint stock company whose role was to perform petroleum operations. Shell also holds a 70% interest in two exploration licences via Shell South Syria Exploration B.V. In December 2011, in compliance with international sanctions on Syria, including European Council Decision 2011/782/CFSP, Shell suspended all exploration and production activities in Syria as well as its participation and/or support in activities related to Al Furat Petroleum Company. SSPD continued to fulfil minimum contractual obligations towards the Syrian finance and labour ministries, in compliance with applicable trade control laws. In 2024, as part of the minimum contractual obligations, payments for taxes related to salary and social security amounted to $282. In addition, in 2024, in compliance with applicable sanctions on Syria, we reimbursed an employee $713.05 for the renewal of his and his son's Syrian passport, which was paid to the Syrian Embassy in Kuwait.

Rest of Middle East and Asia

Shell has certain interests in the United Arab Emirates including a 15% shareholding in the Abu Dhabi Gas Industries Limited ("ADNOC Gas Processing") operating joint venture which is a key supplier of natural gas in the country.

Africa

Nigeria

In 2024, Shell operated a number of interests in onshore and offshore oil exploration and production assets in Nigeria.

See "Risk factors" on pages 138.

Onshore

The Shell Petroleum Development Company of Nigeria Limited (SPDC) is the operator of the SPDC joint venture (SPDC JV, Shell interest 30%) which has 15 Niger Delta onshore oil mining leases (OMLs) and three shallow-water leases (OML 74, 77 and 79).

On March 13, 2025, Shell completed the sale of SPDC to Renaissance. As part of the transaction and ongoing business arrangements, Shell provided loan facilities for amounts up to $2.5 billion. Shell will continue to support Renaissance in the development of its gas reserves and retain an interest in the performance of the export feedgas business.

Offshore

Our main offshore deep-water activities are carried out by our wholly owned subsidiary Shell Nigeria Exploration and Production Company Limited (SNEPCo). SNEPCo has interests in three deep-water blocks that are under PSC terms: the producing assets Bonga (OML 118) and Erha (OML 133), and the non-producing asset Bolia Chota (OML 135). SNEPCo operates OML 118 (Shell interest 55%), including the Bonga field FPSO vessel. We also operate OML 135 (Shell interest 55%), encompassing the Bolia and Doro fields. We have a 43.8% non-operated interest in OML 133 (including the Erha FPSO). In addition, SNEPCo holds a 40% interest in a non-producing shallow-water lease (OML 144) that is held in a joint venture with Sunlink Energies.

In December 2024, we announced a final investment decision (FID) on Bonga North (OML 118), a deep-water project off the coast of Nigeria.

Authorities have investigated our involvement in the 2011 settlement of litigation pertaining to OPL 245. In January 2020, criminal charges alleging disobeying direction of law related to tax waivers were filed in Nigeria against Shell Nigeria Ultra Deep Ltd., SNEPCO, and third parties including Nigeria Agip Exploration Limited (NAE). In March 2024, the Court approved the defendant's no-case submission and dismissed the charges against all defendants.

See Note 32 to the "Consolidated Financial Statements" on pages 308-310 for more information about OPL 245.

Business update

Security issues, sabotage and crude oil theft in the Niger Delta continued and remained significant challenges to our onshore operations in 2024. We will continue to monitor the situation closely and evaluate implications for the integrity of our infrastructure and the sustainability of our current operations. We continue to put the safety of our employees and contractors first.

In our Nigerian operations, we face various risks and adverse conditions which could have a significant adverse effect on our operational performance, earnings, cash flows and financial condition.

See "Respecting nature" on pages 109-113.

There are limitations to the extent to which we can mitigate these risks. We monitor the security situation and liaise with host communities, and governmental and non-governmental organisations to help promote peaceful and safe operations for our people and local communities. We test the economic and operational resilience of our Nigerian projects against a range of assumptions and scenarios. When we participate in joint ventures in Nigeria, we require that they operate in accordance with good industry practice. We seek to proportionally share risks and funding commitments with joint-venture partners. As a result of the completion of the sale of SPDC, our exposure to the risks arising from onshore operations is expected to reduce. Shell has other businesses in Nigeria that are outside the scope of the announced transaction.

See "Risk factors" on page 138.

We support the Nigerian government's efforts to improve the efficiency, functionality and domestic benefits of Nigeria's oil and gas industry. We report spills and how we respond to spills, including those that are caused by third-party interference. We implement a maintenance strategy to support sustainable equipment reliability and we have a multi-year programme to reduce routine flaring of associated gas.

See "Our journey to net zero" on page 95.

Rest of Africa

Shell also has interests in Algeria, Namibia, São Tomé and Príncipe, South Africa and Tunisia.

In 2021, Shell announced plans to hand back upstream assets associated with the Miskar and Hasdrubal concessions to the government of Tunisia. In June 2022, Shell handed back the Miskar concession upon its expiry. Discussions are ongoing with the competent authorities for the hand-back/relinquishment of Hasdrubal concession.

North America

USA

The majority of our oil and gas interests in the USA comprise leases for federal offshore blocks in the deep waters of the Gulf of America. Such leases usually have a fixed primary term and, once production is established, remain in effect through continued production, subject to compliance with the relevant terms and provisions (including applicable laws and regulations).

In 2024, we relinquished our interest in one licence in the North Slope area of Alaska.

Gulf of America

Shell's major production area in the USA is the Gulf of America. We have a total of 304 active federal offshore leases where Shell is the operator, and 62 active federal offshore leases where Shell has a non-operated interest.

We are the operator of 10 production hubs: Mars (Shell interests 33.7% to 100%), Olympus (Shell interests 71.5% to 100%), Auger (Shell interests 27.5% to 100%), Perdido (Shell interests 33.3% to 40%), Ursa (Shell interests 45.4% to 100%), Enchilada/Salsa (Shell interests 37.5% to 75%), Appomattox (Shell interests 79% to 80%), Vito (Shell interest 63.1%), Stones (Shell interest 100%) and Whale (Shell interest 60%). We also have an interest in the West Delta 143 offshore processing facilities (Shell interest 71.5%).

We continue to produce from the Coulomb field (Shell interest 100%), which ties into the Na Kika platform (Shell interest 50%) and which is co-owned and operated by BP Exploration and Production Inc.

We continued exploration, development and decommissioning activities in the Gulf of America in 2024.

In February 2024, we began production at Rydberg (Shell interest 80%), a subsea tie-back to the Shell-operated Appomattox production hub (Shell interest 79%). Rydberg is expected to produce up to 16,000 barrels of oil equivalent per day (boe/d) at peak rates expected between September 2025 to January 2026.

In August 2024, an FID was taken on a waterflood project at Vito where water will be injected into the reservoir formation to displace additional oil. The process is due to begin in 2027 and is expected to enhance volume capacity at the Vito field.

In December 2024, FID was announced on a Phase 3 Silvertip project, which will deliver two wells to boost production at the Shell-operated Perdido spar. These wells, located in the Silvertip Frio reservoir (Shell interest 40%), are expected to collectively produce up to 6,000 barrels of oil equivalent per day (boe/d) at peak rates. First production is expected in 2026.

In January 2025, we began production at the Shell-operated Whale stand-alone host (Shell interest 60%). Whale is expected to produce up to 100,000 boe/d at peak rates in 2027.

In February 2025, we signed an agreement to acquire a 15.96% working interest from ConocoPhillips Company (COP) in the Shell-operated Ursa platform in the Gulf of America. Shell's working interest in the platform, pipeline and associated fields will increase from around 45.39% to a maximum of 61.35%. The transaction is subject to regulatory and other conditions, and is expected to be completed by the end of the second quarter of 2025.

Rest of North America

Shell also has deep-water licences and one shallow-water licence in Mexico, and we are in the process of relinquishing them to the government.

South America

Argentina

Shell has interests in the onshore Vaca Muerta Basin in the Neuquén Province. We are the operator of the Cruz de Lorena, Sierras Blancas, Coiron Amargo Sur Oeste (Shell interest 90% in each), and Bajada de Añelo (Shell interest 50%) areas. We have non-operated interests in the areas of Rincon La Ceniza and La Escalonada (Shell interest 45% in each), both operated by Total Austral S.A., and in the Bandurria Sur area (Shell interest 30%), operated by YPF S.A. Shell has a participating interest in the oil pipeline connecting Sierras Blancas and the regional distribution network and is the administrator in the joint property agreement that regulates its operation (Shell interest 60%). Shell also has a participating interest in the oil pipeline in the northern area of the basin which connects to the Pacific Evacuation Route (Shell interest 13.3%), operated by YPF S.A.

In the north-western Argentina basin, we have a non-operated interest in the onshore Acambuco area (Shell interest 22.5%), operated by Pan American Energy.

In addition to the producing interests, we are the operator of two frontier exploration blocks offshore Argentina (Shell interest 60% in each), and we have a non-operated interest in an adjacent block (Shell interest 30%) operated by Equinor.

Brazil
Shell's operates the Bijupirá and Salema fields (Shell interest 80% in each), which are being decommissioned; the producing BC-10 field (Shell interest 50%) in the Campos Basin; and the Gato do Mato and adjacent Sul de Gato do Mato areas in the Santos Basin (Shell interest 50%), which are subject to unitisation and with development options under evaluation. We also hold interests in 11 exploration blocks in the Santos Basin (Shell interests 70%), six exploration blocks in the Barreirinhas Basin (Shell interests 50% to 100%), three in the Campos Basin (Shell interests 40% to 100%) and one in the Potiguar Basin (Shell interest 100%).

Our non-operated portfolio consists of eight producing fields in the offshore Santos Basin:
- the Sapinhoá field (Shell interest 30%, operated by Petrobras and straddling the BM-S-9 and Entorno de Sapinhoá blocks already unitised);
- the Lapa field (Shell interest 30% in Block BM-S-9A, operated by TotalEnergies);
- the Berbigão and Sururu fields (Shell interest 25% in Block BM-S-11A, operated by Petrobras and subject to ongoing unitisation agreement discussions);
- the Atapu field (Shell interest 16.7% and straddling the BM-S-11A and Atapu PSC area already unitised);
- the Tupi field (Shell interest 23%, already unitised, in Block BM-S-11 and operated by Petrobras);
- the Iracema field (Shell interest 25% in Block BM-S-11 and operated by Petrobras); and
- the Mero field in the Libra PSC area (Shell interest 19.3%, already unitised with an adjoining open area and operated by Petrobras).

In addition to the producing assets, we hold interests in 33 non-operated exploration blocks: two in the Santos Basin (Shell interests 20% to 40%, operated by Petrobras), two in the Potiguar Basin (Shell interests 40%, both operated by Petrobras) and 29 blocks in the Pelotas Basin (Shell interests 30%, all operated by Petrobras).

In October 2024, production started at the Marechal Duque de Caxias FPSO in the Mero field. Mero is expected to receive one more FPSO and start producing from it by the end of 2025.

Rest of South America
Shell also has interests in Suriname and Uruguay.

Trading and Supply
Shell markets and trades equity crude oil from its Upstream operations through our main trading offices in the UK, Singapore, the USA, The Bahamas and Canada. We are active in most crude oil markets and, with our global network of supply and distribution activities and shipping and maritime capabilities, we manage and optimise the supply of crude to Shell's refineries, and the sale of crude to third-party customers.

Whale produces first oil in the Gulf of America

The simplified and cost-efficient Whale platform started oil production in the Gulf of America in January 2025. Whale, operated by Shell, has an estimated peak production of 100,000 barrels of oil equivalent per day – enough to fuel the daily journeys of 2.7 million cars in the USA.

Whale is a close replica of the Shell-operated Vito platform, which started production in the Gulf of America in early 2023. Vito is significantly smaller than its original design, resulting in lower costs and emissions. Whale will operate with around 30% lower carbon intensity over its life cycle than Vito.

Investments in oil and gas platforms such as Whale are needed to meet the world's energy demand while low-carbon alternatives are developed and made commercially available. Energy companies like Shell are finding ways to produce oil and gas with lower greenhouse gas emissions.

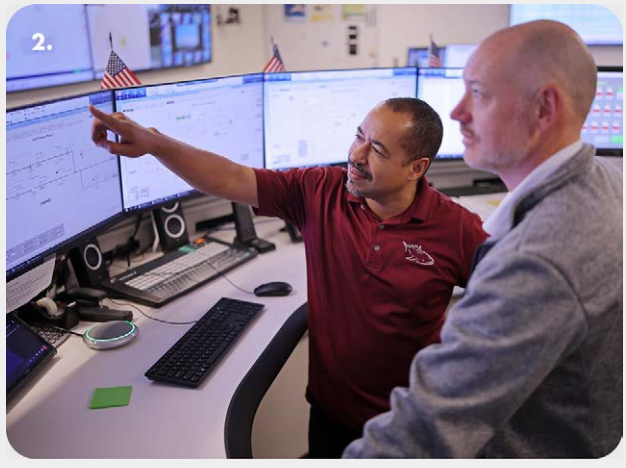
Power turbines are one of the biggest producers of emissions on offshore platforms. To reduce emissions on Whale, engineers have fitted waste-heat recovery units to all its power turbines. These units capture energy that would otherwise be lost to the atmosphere. This energy is then reused to heat the raw fluids so they can be exported from the platform.

The process of compressing gas before it is exported to the shore is another contributor to emissions on offshore facilities. To reduce these emissions on Whale, engineers have installed compressors which use less energy than a typical system.

Most of Whale's operations can be managed from New Orleans, which is about 600 kilometres away from the platform. Engineers use virtual reality headsets to carry out checks. They also deploy drones to inspect other areas, keeping the number of people needed on the platform to a minimum.

Whale has been designed to hold just 60 people, compared with the 180 people that can live on the Shell-operated Appomattox platform in the Gulf of America, which started production in 2019. Weighing around 25,000 tonnes, Whale is a third of the weight of Appomattox. The smaller scale helped designers to cut the cost of building the facility.

The Whale development is owned by Shell Offshore Inc. (60%) and Chevron U.S.A. Inc. (40%) and lies 320 kilometres south of Houston.



1. The Shell-operated Whale platform has a smaller footprint and lower carbon intensity over its life cycle than earlier platforms.

2. Whale is controlled by remote from New Orleans, some 600 km away. With just 60 people on board and a simplified, more energy-efficient design, Whale is reducing costs and emissions.

Oil and gas information

This section sets out information about Shell's oil and gas exploration and production activities, which include the extraction of oil, condensates, natural gas liquids, oil sands and natural gas from their natural reservoirs. These activities are undertaken within the Integrated Gas, Upstream and the Chemicals and Products (includes oil sands) segments. They do not represent the full extent of the activities of these segments, and exclude GTL processing, some LNG activities, trading and optimisation, as well as other non-extractive activities.

Proved developed and undeveloped reserves of Shell subsidiaries and Shell share of joint ventures and associates

	Crude oil and natural gas liquids (million barrels)	Synthetic crude oil (million barrels)	Natural gas (thousand million scf)	Total (million boe)
Shell subsidiaries				
At January 1, 2024	3,512	757	23,276	8,283
Increase/(decrease) in 2024:				
Revisions and reclassifications	408	(13)	(82)	381
Improved recovery	48	–	7	49
Extensions and discoveries	52	–	1,983	394
Purchases and sales of minerals in place	13	16	100	46
Total before taking production into account	521	3	2,008	870
Production [A]	(507)	(19)	(2,726)	(997)
Total	14	(16)	(718)	(127)
At December 31, 2024	3,526	741	22,558	8,156
Shell share of joint ventures and associates				
At January 1, 2024	392	–	6,453	1,504
Increase/(decrease) in 2024:				
Revisions and reclassifications	(5)	–	148	21
Improved recovery	–	–	–	–
Extensions and discoveries	–	–	149	26
Purchases and sales of minerals in place	–	–	–	–
Total before taking production into account	(5)	–	297	47
Production [B]	(24)	–	(366)	(87)
Total	(29)	–	(69)	(40)
At December 31, 2024	363	–	6,384	1,464
Totals				
At January 1, 2024	3,904	757	29,729	9,787
Increase/(decrease) before taking production into account	516	3	2,305	917
Production	(531)	(19)	(3,092)	(1,084)
Increase/(decrease)	(15)	(16)	(787)	(167)
At December 31, 2024 [C] [D] [E]	3,889	741	28,942	9,620
Reserves attributable to non-controlling interest in Shell subsidiaries at December 31, 2024	–	370	–	370

[A] Includes 41 million boe consumed in operations (natural gas: 238 thousand million scf; synthetic crude oil: 1 million barrels).
[B] Includes 5 million boe consumed in operations (natural gas: 27 thousand million scf).
[C] On March 13, 2025, Shell completed the sale of its Nigerian onshore subsidiary The Shell Petroleum Development Company of Nigeria Limited (SPDC) which holds a 30% interest in the SPDC JV to Renaissance. As of December 31, 2024, Shell had proved reserves of 453 million boe in SPDC.
[D] Pursuant to Shell's 2017 agreement with Canadian Natural Resources Limited, its remaining mining interest and associated synthetic crude oil reserves will be swapped for an additional 10% interest in the Scotford Upgrader and Quest CCS project. The transaction is expected to close by the end of the first half of 2025, subject to regulatory approvals. The associated proved reserves as of December 31, 2024 were 741 million barrels (of which 50% attributable to non-controlling interest).
[E] On December 5, 2024, Shell and Equinor ASA, announced the combination of their UK offshore oil and gas assets and expertise to form a new company which will be the UK North Sea's biggest independent producer. On deal completion, the new independent producer will be jointly owned by Equinor (50%) and Shell (50%) and 157 million boe (as of December 31, 2024) of Shell's proved reserves will be contributed to the new joint venture alongside proved reserves contributed by Equinor. Subsequently, Shell will report 50% of the proved reserves of the new joint venture as part of Shell's share of proved reserves from joint ventures and associates.

Proved reserves

Before taking production into account, our proved reserves increased by 917 million boe in 2024. This consisted of an increase of 870 million boe from Shell subsidiaries and an increase of 47 million boe from the Shell share of joint ventures and associates. After taking production into account, our proved reserves decreased by 167 million boe in 2024 to 9,620 million boe at December 31, 2024.

Shell subsidiaries

Before taking production into account, Shell subsidiaries' proved reserves increased by 870 million boe in 2024. This consisted of an increase of 521 million barrels of crude oil and natural gas liquids, an increase of 346 million boe (2,008 thousand million scf) of natural gas and an increase of 3 million barrels of synthetic crude oil. The 870 million boe increase comprised an increase of 394 million boe from extensions and discoveries, a net increase of 381 million boe from revisions and reclassifications, an increase of 49 million boe from improved recovery and a net increase of 46 million boe related to purchases and sales of minerals in place.

After taking into account production of 997 million boe (of which 41 million boe were consumed in operations), Shell subsidiaries' proved reserves decreased by 127 million boe in 2024 to 8,156 million boe. In 2024, Shell subsidiaries' proved developed reserves (PD) increased by 25 million boe to 6,346 million boe and proved undeveloped reserves (PUD) decreased by 152 million boe to 1,810 million boe.

Shell share of joint ventures and associates

Before taking production into account, the Shell share of joint ventures and associates' proved reserves increased by 47 million boe in 2024. This consisted of an increase of 52 million boe (297 thousand million scf) of natural gas, and a decrease of 5 million barrels of crude oil and natural gas liquids. The 47 million boe increase comprised an increase of 26 million boe from extensions and discoveries and a net increase of 21 million boe from revisions and reclassifications.

After taking into account production of 87 million boe (of which 5 million boe were consumed in operations), the Shell share of joint ventures and associates' proved reserves decreased by 40 million boe to 1,464 million boe at December 31, 2024.

The Shell share of joint ventures and associates' PD increased by 9 million boe to 517 million boe, and PUD decreased by 49 million boe to 947 million boe.

See "Supplementary information - oil and gas (unaudited)" on pages 313-332 for more information about proved oil and gas reserves of Shell subsidiaries and the Shell share of the proved oil and gas reserves of joint ventures and associates.

Proved undeveloped reserves

In 2024, Shell subsidiaries' and the Shell share of joint ventures and associates' PUD decreased by 201 million boe to 2,757 million boe. There were decreases of 617 million boe as a result of maturation to PD, mainly 305 million boe in Kashagan (Kazakhstan), 65 million boe in Mero (Brazil), 38 million boe in Mabrouk North-East (Oman), and 209 million boe spread across other fields and a net decrease of 71 million boe as a result of revisions, reclassifications and entitlement changes, which were mainly because of the decrease of 137 million boe in Groundbirch due to low average Alberta Energy Company (AECO) prices in 2024, an increase of 102 million boe due to an FID on an additional FPSO in Atapu, Brazil, and a decrease of 36 million spread across other fields. These were offset by an increase of 7 million boe due to de-maturation of PD to PUD, an increase of 420 million boe due to extensions and discoveries, mainly 286 million boe in Manatee (T&T), and 134 million boe spread across other fields, an increase of 49 million boe due to improved recovery, and a net increase of 11 million boe due to purchases and sales of minerals in place.

In addition to the maturation of 617 million boe from PUD to PD, 61 million boe were matured to PD as through PUD as a result of project execution during the year.

PUD held for five years or more (PUD5+) on December 31, 2024, amounted to 138 million boe, a decrease of 74 million boe compared with the end of 2023. The decrease in PUD5+ during 2024 was driven mainly by changes in Tupi (Brazil), Gbaran (Nigeria) and Kolo Creek (Nigeria).

The fields with the largest PUD5+ on December 31, 2024, were Assa North (Nigeria) and Penguins (UK). These PUD5+ remain undeveloped because of delays in drilling operations and security incidents impacting facility construction (Nigeria) and due to project delays (UK).

During 2024, we spent $8.2 billion on development activities related to PUD maturation.

Delivery commitments

We sell crude oil and natural gas from our producing operations under a variety of contractual obligations. Most contracts generally commit us to sell quantities based on production from specified properties, although some natural gas sales contracts specify delivery of fixed and determinable quantities, as discussed below.

In the past three years, we met our contractual delivery commitments, with the notable exceptions of Egypt, Trinidad and Tobago, and Malaysia. The delivery commitments for Egypt and Trinidad and Tobago have been renegotiated. In the period 2025-2027, we are contractually committed to deliver to third parties, joint ventures and associates a total of some 4,945 billion scf of natural gas from our subsidiaries, joint ventures and associates. The sales contracts contain a mixture of fixed and variable pricing formulae that are generally referenced to the prevailing market price for crude oil, natural gas or other petroleum products at the time of delivery.

In the period 2025-2027, we expect to meet our delivery commitments for almost all the areas in which they are carried, with an estimated 74% coming from PD, 4% through the delivery of gas that becomes available to us from paying royalties in cash, and 22% from the development of PUD as well as other new projects and purchases. In Malaysia Sabah, one of the third-party gas supply lines remains non-operational. New contracts for Domestic and LNG Markets were agreed and signed in 2024, resulting in no shortfall in the period 2025-2027.

Summary of proved oil and gas reserves of Shell subsidiaries and Shell share of joint ventures and associates (at December 31, 2024)

Based on average prices for 2024

	Crude oil and natural gas liquids (million barrels)	Natural gas (thousand million scf)	Synthetic crude oil (million barrels)	Total (million boe) [A]
Proved developed				
Europe	116	2,142	–	485
Asia	1,318	9,548	–	2,964
Oceania	43	4,786	–	868
Africa	216	1,072	–	401
North America	–	–	–	–
USA	285	226	–	324
Canada	–	–	741	741
South America	886	1,120	–	1,080
Total proved developed	2,864	18,894	741	6,863
Proved undeveloped				
Europe	43	454	–	121
Asia	405	5,243	–	1,309
Oceania	22	1,304	–	246
Africa	78	880	–	230
North America	–	–	–	–
USA	152	272	–	199
Canada	–	–	–	–
South America	325	1,895	–	652
Total proved undeveloped	1,025	10,048	–	2,757
Total proved developed and undeveloped				
Europe	159	2,596	–	606
Asia	1,723	14,791	–	4,273
Oceania	65	6,090	–	1,114
Africa	294	1,952	–	631
North America	–	–	–	–
USA	437	498	–	523
Canada	–	–	741	741
South America	1,211	3,015	–	1,732
Total [B]	3,889	28,942	741	9,620
Reserves attributable to non-controlling interest in Shell subsidiaries	–	–	370	370

[A] Natural gas volumes are converted into oil equivalent using a factor of 5,800 scf per barrel.
[B] See footnote C, D and E in the proved developed and undeveloped reserves table on page 47.

Exploration

Shell continues to explore for and mature hydrocarbons across our Integrated Gas and Upstream businesses. Exploration may result in discoveries of oil and gas that we can develop, helping maintain energy security and contributing to our strategy.

We use our integrated exploration, development and project commercial and technical expertise to mature these opportunities and actively manage non-technical risks. We benchmark our projects internally and externally to make sure our proposals are competitive. We review the maturation progress of our various opportunities and perform post-investment reviews to extract learnings for implementation in future opportunities.

In 2024, hydrocarbons were found in Brunei, Oman and the Gulf of America.

Key exploration portfolio developments

UK

The UK government ratified 13 licences that we were awarded in the 33rd Offshore Licensing Round (Shell interests 50% to 100%), of which three are non-operated (Shell interests 50%). We relinquished two Shell-operated licences (Shell interests 70% and 100%), and one non-operated licence (Shell interest 33%). We also acquired an additional 15% interest in two licences, bringing our interest in each to 65%.

Malaysia

We signed one exploration PSC for an operated offshore Sarawak block (Shell interest 50%).

Oman
We are in the process of relinquishing to the government our operated interest in two blocks (Shell interests 50% and 100%).

Egypt
The Egyptian government ratified an agreement in which we farmed out 40% of our participating interest in one operated concession (Shell retained interest 60%). We were directly awarded one concession in the West Nile Delta, which is pending government approval (Shell interest 100%, operator). We also relinquished five operated concessions (Shell interests 21% to 100%) and one non–operated concession (Shell interest 30%).

Gulf of America
In Lease Sale 261, we acquired 63 operated leases (Shell interest 100%). We sold our operated interest in 14 leases (Shell interests 55.88% to 66.66%) and non-operated interest in 32 leases (Shell interests 33.33%). We also relinquished 33 operated leases (Shell interests 50% to 100%) and 11 non-operated ones (Shell interests 25% to 40%).

Brazil
We farmed out 30% of our interest in four operated Santos Basin blocks, retaining an interest of 70% in each. The Brazilian government ratified 29 Petrobras-operated Pelotas Basin blocks (Shell interests 30%), which were secured in the 4th Permanent Offer Concession Bid-Round in 2023.

Trinidad and Tobago
Near the Eastern Coast area, we signed one PSC for one operated block (Shell interest 100%). We are also in the process of relinquishing to the government one operated licence (Shell interest 100%).

Other
In Mauritania, we relinquished two operated blocks (Shell interests 90% and 50%).

In São Tomé and Príncipe, we signed one operated exploration PSC (Shell interest 85%).

In Barbados, we relinquished one non-operated licence (Shell interest 40%) and we are in the process of relinquishing another non-operated one (Shell interest 40%).

In Uruguay, the government ratified one non-operated exploration block secured in the 2022 Open Uruguay Round (Shell interest 50%).

See "Supplementary information - oil and gas (unaudited)" on pages 313-332.

Location of oil and gas exploration and production activities

Location of oil and gas exploration and production activities [A] (at December 31, 2024)

	Exploration	Development and/or Production	Shell operator [B]
Europe			
Albania	●	●	●
Cyprus		●	
Germany		●	
Italy		●	
Netherlands	●	●	●
Norway	●	●	●
UK	●	●	●
Asia			
Brunei	●	●	●
China		●	●
Kazakhstan		●	
Malaysia	●	●	●
Oman	●	●	●
Qatar		●	●
Oceania			
Australia	●	●	●
Africa			
Egypt	●	●	●
Namibia	●		●
Nigeria	●	●	●
São Tomé and Príncipe	●		●
South Africa	●		●
Tanzania		●	●
Tunisia		●	
North America			
Barbados	●		
Canada	●	●	●
Mexico	●		●
USA	●	●	●
South America			
Argentina	●	●	●
Bolivia		●	
Brazil	●	●	●
Colombia	●	●	●
Suriname	●		●
Trinidad and Tobago	●	●	●
Uruguay	●		●
Venezuela		●	●

[A] Includes joint ventures and associates. Where a joint venture or an associate has properties outside its base country, those properties are not shown in this table.
[B] In several countries where "Shell operator" is indicated, Shell is the operator of some but not all exploration and/or production ventures.

Oil and gas production available for sale

Crude oil and natural gas liquids [A]

Thousand barrels

	2024		2023		2022	
	Shell subsidiaries	Shell share of joint ventures and associates	Shell subsidiaries	Shell share of joint ventures and associates	Shell subsidiaries	Shell share of joint ventures and associates
Europe						
Italy	8,551	–	8,373	–	9,091	–
UK	22,910	–	23,458	–	23,905	–
Other [B]	2,730	526	2,493	524	3,722	621
Total Europe	34,191	526	34,324	524	36,718	621
Asia						
Brunei	1,148	15,987	1,271	14,395	3,256	16,282
Kazakhstan	37,744	–	38,765	–	29,667	–
Malaysia	11,763	–	12,630	–	16,759	–
Oman	86,235	–	82,849	–	82,006	–
Russia	–	–	–	–	10,955	1,963
Other [B]	24,068	7,392	25,240	7,443	24,965	7,498
Total Asia	160,958	23,379	160,755	21,838	167,608	25,743
Oceania						
Australia	12,775	–	10,370	–	9,391	–
Total Oceania	12,775	–	10,370	–	9,391	–
Africa						
Nigeria	39,758	–	37,137	–	27,554	–
Other [B]	978	–	1,084	–	1,855	–
Total Africa	40,736	–	38,221	–	29,409	–
North America						
USA	108,090	–	112,912	–	121,690	–
Canada	538	–	597	–	687	–
Total North America	108,628	–	113,509	–	122,377	–
South America						
Argentina	15,610	–	12,152	627	9,023	2,587
Brazil	133,355	–	136,825	–	127,862	–
Other [B]	1,240	–	1,425	–	1,583	–
Total South America	150,205	–	150,402	627	138,468	2,587
Total	507,493	23,905	507,581	22,989	503,971	28,951

[A] Reflects 100% of production of subsidiaries except in respect of production-sharing contracts (PSCs), where the figures shown represent the entitlement of the subsidiaries concerned under those contracts.
[B] Comprises countries where production was lower than 10,100 thousand barrels or where specific disclosures are prohibited.

Synthetic crude oil

Thousand barrels

	2024	2023	2022
	Shell subsidiaries	Shell subsidiaries	Shell subsidiaries
North America - Canada	18,548	19,102	16,949

Natural gas [A]

Million standard cubic feet

	2024		2023		2022	
	Shell subsidiaries	Shell share of joint ventures and associates	Shell subsidiaries	Shell share of joint ventures and associates	Shell subsidiaries	Shell share of joint ventures and associates
Europe						
Netherlands	–	37,601	–	55,351	–	133,210
Norway	176,629	–	150,318	–	174,523	–
UK	61,098	–	70,585	–	69,647	–
Other [B]	36,570		38,774	–	45,159	–
Total Europe	274,297	37,601	259,677	55,351	289,329	133,210
Asia						
Brunei	15,276	144,410	13,531	136,684	15,328	138,007
China	39,592	–	48,170	–	56,008	–
Kazakhstan	75,668	–	75,521	–	57,932	–
Malaysia	219,485	–	173,638	–	200,249	–
Oman	83,520	–	55,675	–	–	–
Russia	–	–	–	–	2,085	37,897
Other [B]	354,653	118,375	369,125	118,252	378,313	118,435
Total Asia	788,194	262,785	735,660	254,936	709,915	294,339
Oceania						
Australia	736,482	39,281	700,248	29,773	693,293	22,577
Total Oceania	736,482	39,281	700,248	29,773	693,293	22,577
Africa						
Egypt	27,737	–	21,434	–	49,618	–
Nigeria	129,533	–	96,967	–	118,032	–
Other [B]	3,022	–	3,423	–	11,966	–
Total Africa	160,292	–	121,824	–	179,616	–
North America						
USA	100,971	–	104,079	–	112,560	–
Canada	152,576	–	137,660	–	122,753	–
Total North America	253,547	–	241,739	–	235,313	–
South America						
Bolivia	33,453	–	35,432	–	40,360	–
Brazil	66,534	–	71,162	–	73,975	–
Trinidad and Tobago	159,937	–	199,877	–	186,150	–
Other [B]	17,942	–	14,204	857	12,912	2,227
Total South America	277,866	–	320,675	857	313,397	2,227
Total	2,490,678	339,667	2,379,823	340,917	2,420,863	452,353

[A] Reflects 100% of production of subsidiaries except in respect of PSCs, where the figures shown represent the entitlement of the subsidiaries concerned under those contracts.
[B] Comprises countries where production was lower than 41,795 million scf or where specific disclosures are prohibited.

Average realised price by geographical area

Crude oil and natural gas liquids

$/barrel

	2024		2023		2022	
	Shell subsidiaries	Shell share of joint ventures and associates	Shell subsidiaries	Shell share of joint ventures and associates	Shell subsidiaries	Shell share of joint ventures and associates
Europe	70.82	76.61	77.19	79.10	94.52	91.26
Asia	76.13	79.77	76.57	82.24	88.69	100.81
Oceania	63.98	–	58.31	–	78.37	–
Africa	79.63	–	84.33	–	104.84	–
North America - USA	74.07	–	75.07	–	92.89	–
North America - Canada	38.52	–	46.45	–	62.10	–
South America	71.85	–	71.93	67.98	85.84	71.21
Total	74.04	79.70	75.12	81.75	90.06	97.80

Synthetic crude oil

$/barrel

	2024	2023	2022
	Shell subsidiaries	Shell subsidiaries	Shell subsidiaries
North America - Canada	68.35	69.26	86.93

Natural gas

$/thousand scf

	2024		2023		2022	
	Shell subsidiaries	Shell share of joint ventures and associates	Shell subsidiaries	Shell share of joint ventures and associates	Shell subsidiaries	Shell share of joint ventures and associates
Europe	12.76	9.63	17.47	18.89	27.24	39.11 [A]
Asia	2.62	7.23	2.84	7.60	3.74	10.88
Oceania	10.47	6.40	11.05	6.23	13.21	6.75
Africa	3.02	–	3.25	–	7.08	–
North America - USA	3.50	–	3.74	–	8.46	–
North America - Canada	1.19	–	2.25	–	4.08	–
South America	4.13	–	5.10	3.69	8.71	3.90
Total	6.47	7.44	7.40	9.78	10.88	17.59 [A]

[A] As revised, following a reassessment.

Average production cost by geographical area

Crude oil, natural gas liquids and natural gas [A]

$/boe

	2024		2023		2022	
	Shell subsidiaries	Shell share of joint ventures and associates	Shell subsidiaries	Shell share of joint ventures and associates	Shell subsidiaries	Shell share of joint ventures and associates
Europe	17.05	28.54	20.93	25.33	24.83	12.25
Asia	6.33	9.10	6.35	9.64	6.75	8.06
Oceania	7.85	19.49	9.01	21.23	10.32	24.97
Africa	11.95	–	11.12	–	13.66	–
North America - USA	10.11	–	9.62	–	11.03	–
North America - Canada	9.30	–	9.70	–	11.15	–
South America	7.51	–	7.36	9.03	6.91	7.74
Total	8.74	11.60	9.08	12.29	10.20	9.59

[A] Natural gas volumes are converted into oil equivalent using a factor of 5,800 scf per barrel.

Synthetic crude oil

$/barrel

	2024	2023	2022
	Shell subsidiaries	Shell subsidiaries	Shell subsidiaries
North America - Canada	17.00	19.47	23.05

Marketing

Marketing comprises the Mobility, Lubricants, and Sectors and Decarbonisation businesses. Mobility operates Shell's retail network, including electric vehicle charging services and the wholesale commercial fuels business, which provides fuels for transport, industry and heating. The Lubricants business produces, markets and sells lubricants for road transport, and machinery used in manufacturing, mining, power generation, agriculture and construction. The Sectors and Decarbonisation business sells fuels, speciality products and services including low-carbon energy solutions to commercial customers including the aviation, marine, and agricultural sectors.

1.9
Segment earnings ($ billion)
(2023: 3.1)

3.9
Adjusted Earnings ($ billion)
(2023: 3.3)

7.4
Cash flow from operating activities ($ billion)
(2023: 5.6)

2,843
Marketing sales volumes (thousand b/d)
(2023: 3,045)

Our Marketing business grew as a result of higher margins in fuels and lubricants as we focused on high-value customers and profitable market segments. We have been the leading finished lubricants supplier in the world for 18 years, according to Kline & Company data for 2023. Mobility continued to focus on key markets and we completed the sale of Shell Pakistan. We have also installed more than 70,000 electric vehicle public charge points globally achieving yet another aim one year ahead of schedule. As an example of our focus on discipline, we have paused on-site construction work at our planned biofuels facility in Rotterdam to address project delivery and ensure future competitiveness. See "Outlook" on pages 16-17 for our Capital Markets 2025 investor update.

Business conditions

For the business conditions relevant to Marketing, see "Market overview" on pages 28-30.

Financial delivery

Earnings 2024-2023

Segment earnings decreased by $1,163 million compared with 2023. This reflected higher Marketing margins (increase of $483 million) including higher unit margins in Lubricants and Mobility. This was partly offset by lower Sectors and Decarbonisation margins. Segment earnings also reflected lower operating expenses (decrease of $449 million). These were partly offset by unfavourable tax movements ($157 million) and higher depreciation charges (increase of $142 million). The 2024 segment earnings also included net impairment charges and reversals of $1,423 million, mainly related to an asset in the Netherlands, net losses of $386 million related to the sale of assets and charges of $215 million related to redundancies and restructuring. These charges are part of identified items and compare with the full year 2023, which included net impairment charges and reversals of $466 million, and charges of $113 million related to redundancies and restructuring, partly offset by gains of $298 million related to indirect tax credits.

Adjusted Earnings increased by $573 million, compared with 2023, as a result of the following:

- Mobility (including wholesale commercial fuels) Adjusted Earnings were $392 million higher, mainly as a result of higher unit margins and lower operating expenses. This was partly offset by higher depreciation and higher taxes;
- Lubricants Adjusted Earnings were $329 million higher, mainly because of higher margins; and
- Sectors and Decarbonisation Adjusted Earnings were $148 million lower, mainly because of lower earnings in joint ventures partly offset by lower operating expenses.

Prior year earnings summary

Segment earnings in 2023 were 33% higher than in 2022, reflecting higher margins (increase of $1,482 million), including higher unit margins in Mobility, higher margins in Lubricants because of lower feedstock costs, and higher volumes in Sectors and Decarbonisation.

These increases were partly offset by higher operating expenses (increase of $730 million) and higher depreciation charges (increase of $267 million), mainly due to asset acquisitions.

* Non-GAAP measure (see page 445).

Key metrics [A]

	$ million, except where indicated		
	2024	2023	2022
Segment earnings*[B]	1,894	3,057	2,292
Identified items	(1,991)	(254)	(612)
Adjusted Earnings* [B]	3,885	3,312	2,905
Adjusted EBITDA* [B]	7,476	6,337	5,613
Cash flow from operating activities	7,363	5,561	3,810
Cash capital expenditure*	2,445	5,790	4,978
Marketing sales volumes (thousand b/d)	2,843	3,045	3,043

[A] See Note 7 to the "Consolidated Financial Statements" which includes an explanation of the reporting segment changes applicable from 2024.
[B] Segment earnings, Adjusted Earnings, and Adjusted EBITDA are presented on a current cost of supplies basis.

Segment earnings in 2023 included impairment charges of $466 million and charges of $113 million related to redundancy and restructuring, partly offset by gains of $298 million related to indirect tax credits. These charges and gains are part of identified items and compare with 2022, which included net impairment charges and reversals of $321 million; net losses of $122 million related to the sale of assets; and provisions for onerous contracts of $62 million.

Adjusted Earnings increased by $407 million compared with 2022, as a result of the following:

- Mobility (including wholesale commercial fuels) Adjusted Earnings were $73 million lower, mainly as a result of higher operating expenses and higher depreciation. This was partly offset by better margins;
- Lubricants Adjusted Earnings were $339 million higher, mainly because of higher margins due to lower feedstock costs; and
- Sectors and Decarbonisation Adjusted Earnings were $141 million higher, mainly because of increased volumes and higher earnings in joint ventures.

Cash flow from operating activities

Cash flow from operating activities in 2024 was primarily driven by Adjusted EBITDA, working capital inflows of $998 million, and dividends (net of profits) from joint ventures and associates of $262 million. These inflows were partly offset by tax payments of $562 million, non-cash cost of supplies adjustment of $254 million, and outflows from the timing impact of $221 million in payments related to emission certificates and biofuel programmes.

Cash capital expenditure

Cash capital expenditure* of $2.4 billion in 2024 reflected $0.8 billion in low-carbon energy solutions, compared with $3.3 billion in 2023.

Cash capital expenditure in low-carbon energy solutions was higher in 2023, mainly due to the acquisition of Nature Energy and the expansion of our Mobility electric vehicle charging business.

Our cash capital expenditure* is expected to be in the range of $2-3 billion in 2025.

Operational performance

Marketing sales

Marketing sales volumes, which comprise hydrocarbon sales, decreased compared with 2023. This was mainly as a result of reduced sales volumes in Mobility because of our focus on value over volume.

Number of electric vehicle charge points

In 2024, the number of electric vehicle charge points owned or Shell-branded was almost 73,000 compared with 54,000 in 2023.

Strategic progress

Portfolio and business developments

Significant portfolio and business developments:

- In July 2024, we announced that we had paused on-site construction work at the biofuels facility at the Shell Energy and Chemicals Park Rotterdam in the Netherlands to assess the most commercial way forward for the project.

Business and property

Mobility

Shell Mobility is where we connect with individual customers on a personal level. Shell Mobility is one of the world's largest mobility retailers by number of sites, with more than 44,000 Shell-branded mobility sites, including service stations, in more than 80 markets at the end of 2024. We operate different models across these markets, from full ownership of sites to brand licensing agreements. In line with our strategy to focus on markets that provide high returns on investment, we are continuing with our plan to divest around 500 low-return Shell-owned sites (including joint ventures) each year until 2025. The sale of Shell Pakistan in 2024 has helped us achieve our aim.

Every day, around 33 million retail customers visit Shell-branded mobility sites for a range of quality fuels, electric vehicle charging, and convenience and non-fuel products and services. Through Shell Fleet Solutions, our business customers can obtain fuel cards, road services and carbon-offset offers, among other products and services.

We are expanding our convenience and non-fuel retail offer to cater to our customers' needs. At many of our sites, we offer convenience items, including beverages and fresh food, and services, such as lubricant changes and car washes. At the end of 2024, Shell operated 13,000 convenience stores worldwide. We have upgraded more than 2,500 stores with our Shell Café premium fresh coffee and food offer since launching in 2021.

Low-carbon products and services

Shell Mobility offers customers lower-emission products and services, including biofuels and electric vehicle charging. We are focusing on growing our presence in China, Europe and the USA. At the end of 2024, we had almost 73,000 public charge points globally at Shell forecourts, on-street locations, mobility hubs and other sites, such as supermarkets. This was an increase from around 54,000 at the end of 2023. As part of our value over volume focus, we no longer set a volumetric target for the number of charge points by 2030.

Shell's global electric vehicle charging business is not yet profitable. However, we remain committed to investing in this sector as we anticipate future profitability. The timeline and extent of this profitability will be influenced by factors, such as network accessibility, market competition, customer demand, advancements in cost-related technologies and supportive government policies.

As we work to provide more low-carbon alternatives to our customers, we also continue to develop traditional fuels for drivers of internal combustion engine vehicles. Aided by our partnership with Scuderia Ferrari, we have concentrated on developing fuels with special formulations designed to clean engines and improve performance. An example of this is Shell V-Power. We sold fuels under the Shell V-Power brand in 72 markets in 2024.

Partnering with Ferrari in motorsport

We are the lead technical partner to the Scuderia Ferrari F1™ team, with the partnership being one of the longest and most successful in motorsport. The partnership is the ultimate test bed for our products, challenging them to perform in some of the most extreme conditions and ensuring our customers are getting the very best. In October 2024, a multi-year renewal was announced. Taking effect on January 1, 2026, the partnership will encompass Scuderia Ferrari HP, Ferrari Hypercar and the Ferrari Challenge Series. We are helping to shape the future of fuels by supporting Scuderia Ferrari with the development of an advanced sustainable race fuel for the 2026 F1™ World Championship season. The fuel will meet FIA requirements of achieving greenhouse gas emissions savings, relative to fossil-fuel-derived petrol, of at least 65%.

Photo: Imagery of Scuderia Ferrari HP driver Charles Leclerc driving at the 2024 Singapore Grand Prix, Round 18.

Shell Commercial Road Transport (CRT) is also working to help drive the decarbonisation of the transport sector by providing fuels, lubricants and digital services to customers with heavy-duty vehicles in their fleets. We have a public electric vehicle charging facility for trucks in Hamburg, Germany, which has four fast-charging stations.

We also offer drivers using heavy-duty LNG-fuelled trucks access to Shell-operated and partner networks in Europe. We have LNG refuelling sites in Austria and Hungary.

Photo: A heavy-duty LNG-fuelled truck on Shell and IVECO's "On the road to net-zero emissions" bioLNG tour of Europe in 2023.

In April 2024, we opened our bioLNG liquefaction plant at the Shell Energy and Chemicals Park Rheinland. This can produce 100,000 tonnes of bioLNG per annum, which will help around 5,000 LNG trucks reduce their carbon emissions. Since 2022, our customers in the Netherlands have been able to opt for a bioLNG blend.

Trading and Supply
Through our main trading and supply offices in London, Houston, Singapore and Rotterdam, we trade low-carbon fuels, refined products, chemical feedstocks and environmental products. We trade in physical and financial contracts, and have wholesale commercial fuel activities. Shell Wholesale Commercial Fuels provides fuels for transport, industry and heating – from reliable main-grade fuels to premium products. With about 180 Shell and joint-venture (including pipeline) terminals and operating in around 25 countries, our infrastructure is well positioned to make deliveries around the world.

Lubricants
Shell Lubricants has been the number one global finished lubricants supplier in terms of market share for 18 consecutive years, according to Kline & Company data for 2023. Shell lubricants are available across more than 175 markets for passenger cars, motorcycles, trucks, coaches, and machinery used in manufacturing, mining, power generation, agriculture and construction.

In addition to making premium lubricants for conventional vehicles, we also make Shell E-fluids for electric vehicles from base oils made from natural gas at Pearl gas-to-liquids (GTL) plant in Qatar.

Our global lubricants supply chain has a network of 32 lubricants blending plants, four base oil plants (one of which we operate), 10 grease plants and five GTL base oil storage hubs.

Sectors and Decarbonisation
The Sectors and Decarbonisation business sells fuels, speciality products and services including low-carbon energy solutions to a broad range of commercial customers including the aviation, marine, and agricultural sectors.

Shell Bitumen supplies customers across several markets and provides enough bitumen to resurface 500 kilometres of road lanes every day.

Shell Sulphur Solutions manages the value chain of sulphur from refining to marketing. It provides sulphur for use in applications, such as fertiliser, mining and chemicals. It also licenses Shell Thiogro technologies to create sulphur-enhanced fertilisers.

Aviation
Shell Aviation provides aviation fuel, lubricants and low-carbon solutions globally. Shell's Avelia platform is one of the world's first blockchain-powered sustainable aviation fuel (SAF) book-and-claim solutions for business travel. It is designed to help trigger demand for SAF – increased demand would help encourage investment in SAF production. Wider production and supply, driven by increased demand, could help lower the price point for these fuels. Since launch, Avelia has injected more than 18 million gallons of SAF into the fuel network at nine airports around the world and supported more than 36 airlines and corporate customers in accessing the environmental attributes of SAF.

Marine
Shell Marine serves customers whose vessels range from ocean-going tankers to fishing boats. We supply seven types of fuel, more than 300 grades of lubricants and low-carbon solutions. Our global supply network covers key bunkering locations. Shell Marine also supplies chemical products, and marine-related technical and digital services. Our lubricants are used in around 10,000 vessels and are available in more than 700 ports across more than 50 countries.

Biofuels
Shell and the non-operated joint venture Raízen (Shell interest 44%) are, together, one of the world's largest blenders and distributors of biofuels. Biofuels, along with natural gas, will play a key role in reducing emissions from heavy-duty transport.

In 2024, around 10.37 billion litres of biofuels (2023: 9.7 billion litres) were blended into Shell's sale of fuels worldwide, which includes the Shell share of sales made by Raízen. Raízen produced, on a 100% basis, around 3.16 billion litres of ethanol in 2024 (2023: 3.12 billion litres). The cellulosic ethanol plant at Raízen's Costa Pinto mill in Brazil produced 61 million litres of second-generation ethanol in 2024 (2023: 30 million litres). Expansion began in 2024, with the start-up at a new plant and commissioning of two further plants at the end of 2024. The majority of the ethanol and cellulosic ethanol produced by Raízen is sold unblended to international customers in markets such as the USA, Europe and Japan. Raízen also produced around 5.1 million tonnes of sugar from sugar cane (2023: 5.8 million tonnes).

Renewable natural gas (RNG), also known as biogas or biomethane, is gas derived from processing organic waste in a controlled environment until it is fully interchangeable with conventional natural gas.

Nature Energy, which Shell acquired in 2023, is one of Europe's largest producers of RNG. In 2024, Nature Energy opened its first biogas plant in France. The Sécalia plant is operated in partnership with the Dijon Céréales consortium of 150 farmers. It is France's largest renewable gas plant with annual production of 230 GWh of biogas. Together with its partners, Nature Energy also owns and operates 13 biogas plants in Denmark and one in the Netherlands.

In March 2024, we started operations at Shell Downstream Bovarius, which is one of two facilities at the Bettencourt Dairies in Wendell, Idaho, USA, where we are converting dairy manure to RNG. Bovarius is expected to produce around 400,000 MMBtu a year of RNG. The second facility, Shell Downstream Friesian, is expected to produce around 350,000 MMBtu a year of RNG and operations are expected to start in 2025.

Marketing data tables

Branded mobility locations [A]

	2024	2023	2022
Europe	8,227	8,346	8,260
Asia [B]	7,742	10,824	10,470
Oceania [B]	1,047	1,087	1,083
Africa	2,994	2,917	2,815
Americas [C]	24,099	23,830	23,597
Total [D]	44,109	47,004	46,225

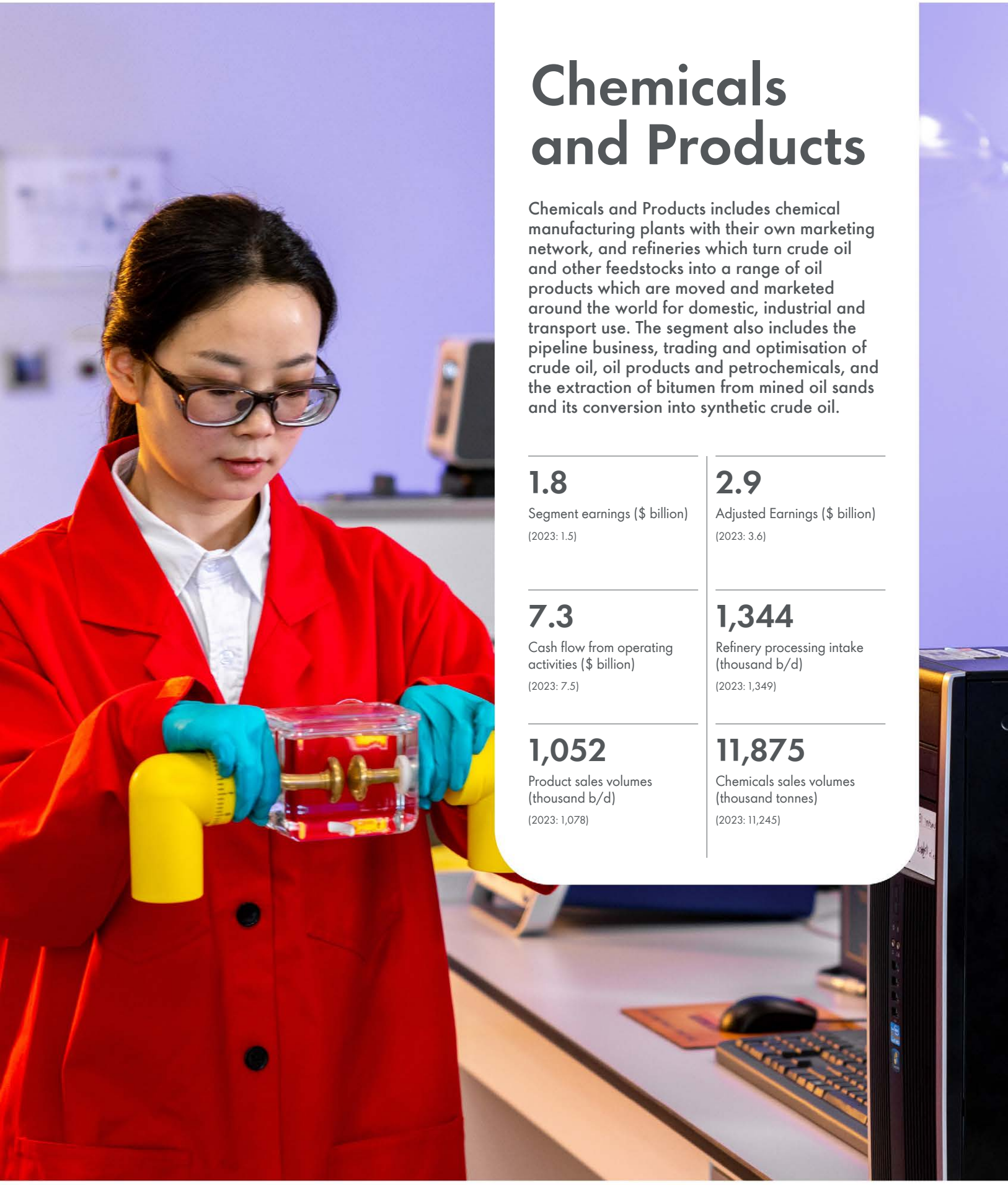
[A] Includes different models, from full-ownership retail sites, and sites operated by joint ventures, through to trademark licensing agreements, and excludes sites closed for more than six months.
[B] Asia includes Turkey; Oceania includes French Polynesia, Guam, Palau and New Caledonia. Decrease in sites is primarily due to exit from Japan market.
[C] 2024 includes around 8,138 sites operated by the Raízen joint venture.
[D] 2024 includes 8,030 sites operated through trademark licensing agreements.

Marketing sales volumes [A][B][C][D]

Thousand b/d

	2024	2023	2022
Europe			
Mobility	611	626	614 [E]
Lubricants	16	16	16
Sectors and Decarbonisation	192	186	176 [E]
Total	819	828	806
Asia			
Mobility	594	607	635 [E]
Lubricants	40	39	38
Sectors and Decarbonisation	104	138	113 [E]
Total	738	784	786
Africa			
Mobility	63	74	86 [E]
Lubricants	2	3	3
Sectors and Decarbonisation	6	9	8 [E]
Total	71	86	97
Americas			
Mobility	790	919	938 [E]
Lubricants	23	24	25
Sectors and Decarbonisation	402	404	390 [E]
Total	1,215	1,347	1,354
Total product sales			
Mobility	2,057	2,226	2,274 [E]
Lubricants	82	82	83
Sectors and Decarbonisation	704	737	686 [E]
Total	2,843	3,045	3,043
Gasolines	1,282	1,321	1,307
Kerosenes	391	386	345
Gas/Diesel oils	960	1,012	1,057
Fuel oil	22	23	24
Other products [F]	188	303	310
Total	2,843	3,045	3,043

[A] Excludes deliveries to other companies under reciprocal sale and purchase arrangements, that are in the nature of exchange contracts.
[B] Includes the Shell share of Raízen's sales volumes and other joint ventures' sales volumes.
[C] Excludes sales volumes from markets where Shell operates under trademark licensing agreements.
[D] From the first quarter 2024, wholesale commercial fuels forms part of Mobility with inclusion in the Marketing segment (previously Chemicals & Products segment). Prior period comparatives have been revised to conform with current year presentation with an offsetting impact between Marketing and Chemicals and Products segments.
[E] Previously reported within the Sectors and Decarbonisation class of business, with effect from July 1, 2023, the Commercial Road Transport business (CRT) is part of Mobility and Customer Operations is part of Lubricants. Comparative information has been revised.
[F] Includes LPG sales volumes of 26 thousand b/d (2023: 29 thousand b/d; 2022: 33 thousand b/d).



Chemicals and Products

Chemicals and Products includes chemical manufacturing plants with their own marketing network, and refineries which turn crude oil and other feedstocks into a range of oil products which are moved and marketed around the world for domestic, industrial and transport use. The segment also includes the pipeline business, trading and optimisation of crude oil, oil products and petrochemicals, and the extraction of bitumen from mined oil sands and its conversion into synthetic crude oil.

1.8
Segment earnings ($ billion)
(2023: 1.5)

2.9
Adjusted Earnings ($ billion)
(2023: 3.6)

7.3
Cash flow from operating activities ($ billion)
(2023: 7.5)

1,344
Refinery processing intake (thousand b/d)
(2023: 1,349)

1,052
Product sales volumes (thousand b/d)
(2023: 1,078)

11,875
Chemicals sales volumes (thousand tonnes)
(2023: 11,245)

We announced the decision to stop processing crude oil into petrol, jet fuel and diesel at our Wesseling site in Germany, and to produce premium oils instead. We also opened our first bioLNG liquefaction plant in Germany. In Chemicals, we saw improved utilisation thanks to the ramp-up of operations at Shell Polymers Monaca, USA, and we took a final investment decision to expand our CSPC petrochemicals joint venture with CNOOC in Daya Bay, China. See "Outlook" on pages 16-17 for our Capital Markets 2025 investor update.

Business conditions

For the business conditions relevant to Chemicals and Products, see "Market overview" on pages 28-30.

Financial delivery

Earnings 2024-2023

Segment earnings in 2024 increased by $275 million compared with 2023. This reflected lower operating expenses (a decrease of $812 million) and higher Chemicals margins (increase of $602 million). These were partially offset by lower Products margins (a decrease of $1,832 million), mainly driven by lower refining margins and unfavourable tax movements ($248 million). Segment earnings in 2024 also included:

- net impairment charges and reversals of $1,176 million mainly relating to assets in Singapore;
- charges of $142 million related to redundancy and restructuring; and
- unfavourable movements of $86 million relating to an accounting mismatch due to fair value accounting of commodity derivatives, partly offset by favourable deferred tax movements of $114 million.

These charges and movements are part of identified items, and compare with the full year 2023 which included net impairment charges and reversals of $2,195 million mainly relating to the Chemicals assets in Singapore, and charges of $82 million related to redundancy and restructuring partly offset by favourable movements of $214 million relating to an accounting mismatch due to fair value accounting of commodity derivatives.

In 2024, Adjusted Earnings from Chemicals accounted for (15)%, Refining for 34% and Trading and Optimisation including pipelines for 81%. The decrease in Adjusted Earnings of $683 million was driven by the following:

- Products Adjusted Earnings were $1,818 million lower than in 2023, mainly driven by lower refining and oil sands margins and unfavourable tax movements, higher depreciation partly offset by lower operating expenses.
- Chemicals negative Adjusted Earnings were $1,135 million lower than in 2023, mainly because of higher margins and lower operating expenses, and lower depreciation.

Prior year earnings summary

Segment earnings in 2023 were 66% lower than in 2022, reflecting lower Products margins (a decrease of $1,545 million), mainly driven by lower refining margins and partly offset by higher margins from trading and optimisation. The segment earnings also reflected higher depreciation charges (an increase of $543 million) due to the start-up of operations at Shell Polymers Monaca in the USA. These losses were partly offset by higher Chemicals margins (an increase of $612 million). Segment earnings in 2023 included the following:

- net impairment charges and reversals of $2,195 million, mainly related to the Chemicals assets in Singapore; and
- charges of $82 million related to redundancy and restructuring, partly offset by favourable movements of $214 million related to the fair value accounting of commodity derivatives.

* Non-GAAP measure (see page 445).

Key metrics [A]

	$ million, except where indicated		
	2024	2023	2022
Segment earnings*[B]	1,757	1,482	4,380
Identified items	(1,177)	(2,135)	(213)
Adjusted Earnings*[B]	2,934	3,617	4,592
Adjusted EBITDA*[B]	6,783	7,489	8,305
Cash flow from operating activities	7,253	7,513	11,472
Cash capital expenditure*	3,290	3,014	3,691
Chemicals manufacturing plant utilisation (%)	76%	68%	79%
Refinery utilisation (%)	85%	85%	86%
Refinery processing intake (thousand b/d)	1,344	1,349	1,402
Product sales volumes (thousand b/d)	1,052	1,078	1,160
Chemicals sales volumes (thousand tonnes)	11,875	11,245	12,281

[A] See Note 7 to the "Consolidated Financial Statements" which includes an explanation of the reporting segment changes applicable from 2024.
[B] Segment earnings, Adjusted Earnings, and Adjusted EBITDA are presented on a current cost of supplies basis.

These charges and gains are part of identified items and compare with 2022, which included:

- net impairment charges and reversals of $226 million;
- legal provisions of $149 million;
- unfavourable movements of $142 million related to the fair value accounting of commodity derivatives;
- tax charges relating to the EU solidarity contribution of $74 million; partly offset by gains of $210 million, related to the sale of assets; and
- gains of $104 million, related to the remeasurement of redundancy and restructuring costs.

In 2023, Adjusted Earnings from Chemicals accounted for (43)%, Refining for 67% and Trading and Optimisation including pipelines for 76%. The decrease in Adjusted Earnings of $975 million was driven by the following:

- Products Adjusted Earnings were $758 million lower than in 2022, mainly driven by lower refining and oil sands margins and partly offset by higher margins from Trading & Optimisation.
- Chemicals negative Adjusted Earnings were $217 million more than in 2022, mainly because of higher depreciation and operating expenses, partly offset by higher margins and Income from associates.

Cash flow from operating activities

Cash flow from operating activities in 2024 was primarily driven by Adjusted EBITDA, working capital inflows of $524 million, dividends (net of profits) from joint ventures and associates of $304 million and net cash inflows relating to commodity derivatives of $219 million. These inflows were partly offset by cash outflows relating to legal provisions of $215 million, tax payments of $146 million, cash outflows relating to the timing impact of payments relating to emission certificates and biofuel programmes of $114 million, and a non-cash cost of supplies adjustment of $109 million.

Shell's policy is to settle the inter-segment use of tax attributes between business segments. This settlement is usually made in cash but in certain instances there is no cash settlement. In 2024, the Integrated Gas segment's deferred tax assets ($974 million) were mainly used by the Upstream ($759 million) and Chemicals and Products ($183 million) segments, for which no cash settlement was made.

Cash capital expenditure

Cash capital expenditure* increased by $0.3 billion in 2024 to $3.3 billion mainly because of growth projects in China. Our cash capital expenditure* is expected to be around $3 billion in 2025.

Operational performance

Chemicals manufacturing plant utilisation

Utilisation is defined as the actual use of the plants as a percentage of the rated capacity. Chemicals manufacturing plant utilisation was 8 percentage points higher than in 2023, mainly due to economic optimisation in 2023. The increase was also driven by the ramp-up of Shell Polymers Monaca and lower unplanned maintenance in 2024.

Refinery utilisation

Utilisation is defined as the actual use of the plants as a percentage of the rated capacity. Refinery utilisation of 85% was in line with 2023.

Chemicals and Products sales

Chemicals sales volumes were 6% higher than in 2023, mainly due to higher polyethylene volumes partly offset by lower intermediate volumes.

Products sales volumes were 2% lower than in 2023 due to lower Trading sales volumes in Europe partly offset by increases in the USA and Asia.

Strategic progress

Portfolio and business developments

Significant portfolio and business developments:

- In January 2024, we took an FID to convert the hydrocracker of the Wesseling site at the Energy and Chemicals Park Rheinland in Germany into a production unit for Group III base oils.
- In May 2024, we agreed to sell our Energy and Chemicals Park in Singapore to CAPGC Pte. Ltd., a joint venture company between Chandra Asri Capital Pte. Ltd. and Glencore Asian Holdings Pte. Ltd. The transaction will transfer all of Shell's interests in Shell Energy and Chemicals Park Singapore to CAPGC [A].
- In June 2024, we took an FID for Polaris, a carbon capture project at the Shell Energy and Chemicals Park Scotford in Alberta, Canada. We also took an FID to proceed with the Atlas Carbon Storage Hub which will store CO_2 captured by the Polaris project.
- In January 2025, CNOOC and Shell Petrochemicals Company Limited (CSPC), a 50-50 joint venture between Shell Nanhai B.V and CNOOC Petrochemicals Investment Ltd, took an FID to expand its petrochemical complex in Daya Bay, Huizhou, south China.

Business and property

Energy and chemicals plants

We are repurposing our refineries into energy and chemicals parks to focus on meeting customers' low-carbon and sustainability needs. This is underway at Norco in the USA, Scotford in Canada, Rotterdam in the Netherlands and Rheinland in Germany. We continue to explore options for the former Convent Refinery in Louisiana, USA, which has been shut down, and we have agreed to sell our Energy and Chemicals Park in Singapore. As we transform our refineries, we are building new facilities or converting existing units to support low-carbon products, while dismantling units that do not deliver sustainable long-term value.

Chemicals

Products made from chemicals are used in everyday life, including in medical equipment, construction, transport, electronics, agriculture and sports. Our plants produce a range of base chemicals, including ethylene, propylene and aromatics, and intermediate chemicals, such as styrene monomer, propylene oxide, solvents, linear alpha olefins, detergent alcohols, ethylene oxide, ethylene glycol and polyethylene. We have the capacity to produce around 8.1 million tonnes of ethylene a year (including the Shell share of capacity entitlement (offtake rights) of joint ventures and associates, which may be different from nominal equity interest).

[A] Transaction subject to completion.

Our Pennsylvania chemical project, Shell Polymers Monaca, which commenced operations in November 2022, was not fully functional during 2023 due to operational and start-up challenges. The facility has since ramped up operations since the first quarter of 2024.

We are expanding our product portfolio to include chemicals made from circular feedstocks, and more intermediates and performance chemicals, such as polyethylene and polycarbonate.

We operate chemical plants worldwide and have a balance of locations, feedstocks and products. In 2024, we began production at our new pyrolysis oil upgrader at the Shell Chemicals Park Moerdijk in the Netherlands. The unit improves the quality of pyrolysis oil, a liquid made from hard-to-recycle plastic waste, and turns it into chemical feedstock. The plant has the capacity to process up to 50,000 tonnes of pyrolysis oil per year.

Products – Refining and Trading

Refining

We have interests in eight refineries, with a total capacity to process 1.6 million barrels of crude oil a day. The distribution of our refining capacity is 60% in Europe, 26% in the Americas and 14% in Asia.

In 2024, we took an FID to convert the hydrocracker of the Wesseling site at the Energy and Chemicals Park Rheinland in Germany into a production unit for Group III base oils. These mineral base oils have a very high viscosity index, which meets transport industry standards, and are produced with hydrocracking technology. The market for high-quality engine and transmission oils, as well as electric vehicle fluids and cooling fluids, some of which are made from these oils, is expected to grow. Crude oil processing will end at the Wesseling site in 2025 but continue at the Godorf site.

Photo: Barges at the Shell Energy and Chemicals Park Rheinland in Germany.

Trading and Supply

Through our main trading offices in London, Houston, Singapore and Rotterdam, we trade crude oil, low-carbon fuels, refined products, chemical feedstocks and environmental products. We trade in physical and financial contracts, lease storage and transportation capacities, and manage global shipping activities.

Shipping and Maritime enables the safe delivery of our contracts and this includes supplying feedstock for our refineries and chemical plants, and finished products such as gasoline, diesel and aviation fuel to our Marketing segment and customers.

Pipelines

We own and operate three tank farms across the USA through Shell Pipeline Company LP (Shell interest 100%). It transports around 1.5 billion barrels of crude oil, refined products and chemicals a year through around 5,500 kilometres of pipelines in the Gulf of America and nine US states. Our non-operated ownership interests provide another 13,000 kilometres of pipeline.

Our pipelines carry more than 40 types of crude oil and more than 20 grades of fuel and chemicals, including petrol, diesel, aviation fuel and chemicals including ethylene.

We own, operate, develop and acquire pipelines and other midstream and logistics assets. Our assets include interests in entities that own crude oil and refined products pipelines and terminals that serve as key infrastructure to:

- transport onshore and offshore crude oil production to US Gulf Coast and Midwest refining markets; and
- deliver refined products from those markets to major demand centres.

Our assets also include interests in entities that own natural gas and refinery gas pipelines that transport offshore natural gas to market hubs and deliver refinery gas from refineries and plants to chemical sites along the US Gulf Coast.

Oil Sands

Synthetic crude oil is produced by mining bitumen-saturated sands, extracting the bitumen and transporting it to a processing facility where hydrogen is added to make a wide range of feedstocks for refineries. The Athabasca Oil Sands Project (AOSP) in Alberta, Canada, includes the Albian Sands mining and extraction operations, the Scotford Upgrader and the Quest Carbon Capture and Storage (CCS) facility. Quest CCS captures about 1 million tonnes per year of CO_2 from the hydrogen manufacturing units within the upgrader. Since opening in 2015, Quest CCS has safely stored more than 9 million tonnes of CO_2.

We have a 50% interest in 1745844 Alberta Ltd. (formerly known as Marathon Oil Canada Corporation), which holds a 20% interest in the Athabasca Oil Sands Project.

Pursuant to our 2017 agreement with Canadian Natural Resources Limited, our remaining mining interest and associated synthetic crude oil reserves will be swapped for an additional 10% interest in the Scotford Upgrader and Quest CCS project. The transaction is expected to close by the end of the first half of 2025, subject to regulatory approvals.

Chemicals and Products data tables

The tables below reflect Shell subsidiaries and instances where Shell owns the crude oil or feedstocks processed by a refinery. Other joint ventures and associates are only included where explicitly stated.

Products sales volumes [A][B][C]

Thousand b/d

	2024	2023	2022
Europe	507	560	574
Asia	248	240	274
Africa	–	–	–
Americas	297	278	312
Total	1,052	1,078	1,160
Gasolines	141	154	264
Kerosenes	94	104	93
Gas/Diesel oils	321	346	291
Fuel oil	200	221	257
Other products [D]	296	252	256
Total	1,052	1,078	1,160

[A] Excludes deliveries to other companies under reciprocal sale and purchase arrangements, which are in the nature of exchanges. Sales of condensate are included.
[B] Certain contracts are held for trading purposes and reported net rather than gross. The effect in 2024 was a reduction in refining and trading sales of around 1,286 thousand b/d (2023: 1,202 thousand b/d; 2022: 1,197 thousand b/d).
[C] From the first quarter 2024, Wholesale Commercial Fuels forms part of Mobility with inclusion in the Marketing segment (previously Chemicals and Products segment). Prior period comparatives have been revised to conform with current year presentation with an offsetting impact between Marketing and Chemicals and Products segments.
[D] Includes LPG sales volumes of 54 thousand b/d (2023: 55 thousand b/d; 2022: 48 thousand b/d).

Cost of crude oil processed or consumed [A]

$/barrel

	2024	2023	2022
Total	77.97	71.13	84.39

[A] Includes Upstream and Integrated Gas margins on crude oil supplied by Shell subsidiaries, joint ventures and associates.

Crude distillation capacity [A]

Thousand b/stream day [B]

	2024	2023	2022
Europe	975	975	990
Asia	237	237	237
Africa	–	–	23
Americas	435	435	449
Total	1,646	1,646	1,698

[A] Average operating capacity for the year, excluding mothballed capacity.
[B] Stream day capacity is the maximum capacity with no allowance for downtime.

Crude oil processed [A]

Thousand b/d

	2024	2023	2022
Europe	742	732	715
Asia	165	168	184
Africa	–	–	16
Americas	359	322	353
Total	1,266	1,222	1,268

[A] Includes natural gas liquids, share of joint ventures and associates and processing for others.

Refinery processing intake [A]

Thousand b/d

	2024	2023	2022
Europe	742	764	763
Asia	166	171	184
Africa	–	–	16
Americas	437	414	439
Total	1,344	1,349	1,402

[A] Includes crude oil, natural gas liquids and feedstocks processed in crude distillation units and in secondary conversion units.

Refinery processing outturn [A]

Thousand b/d

	2024	2023	2022
Gasolines	486	489	477
Kerosenes	162	168	166
Gas/Diesel oils	506	516	512
Fuel oil	80	88	90
Other	186	149	193
Total	1,419	1,410	1,438

[A] Excludes own use and products acquired for blending purposes.

Manufacturing plants at December 31, 2024

Refineries

Thousand barrels/stream day, 100% capacity [B]

	Location	Asset class	Shell interest (%) [A]	Crude distillation capacity	Thermal cracking/ visbreaking/ coking	Catalytic cracking	Hydro-cracking
Europe							
Germany	Miro [C]	■	32	313	40	96	–
	Rheinland	■ ●	100	339	32	–	87
	Schwedt [C]	■	38	234	46	57	–
Netherlands	Pernis	■ ●	100	447	–	53	104
Asia							
Singapore	Pulau Bukom[D]	■ ●	100	237	–	–	61
Americas							
Argentina	Buenos Aires [E]	● ◆	44	112	14	22	–
Canada							
Alberta	Scotford	■	100	100	–	–	83
Ontario	Sarnia	◆	100	85	5	21	10
USA							
Louisiana	Norco	■	100	250	29	119	44

[A] Shell interest is rounded to the nearest whole percentage point; Shell share of production capacity may differ.
[B] Stream day capacity is the maximum capacity with no allowance for downtime.
[C] Not operated by Shell.
[D] Refinery has been classified as held for sale.
[E] Owned through Raízen joint venture.

■ Integrated refinery and chemical complex
● Refinery complex with cogeneration capacity
◆ Refinery complex with chemical unit(s)

Chemicals data tables

The tables below reflect Shell subsidiaries and instances where Shell owns the crude oil or feedstocks processed by a refinery. Other joint ventures and associates are only included where explicitly stated.

Ethylene capacity [A]

Thousand tonnes/year

	2024	2023	2022
Europe	1,713	1,710	1,710
Asia	2,542	2,542	2,542
Americas [B]	3,821	3,821	3,821
Total	8,076	8,073	8,073

[A] Includes the Shell share of capacity entitlement (offtake rights) of joint ventures and associates, which may be different from nominal equity interest. Nominal capacity is quoted at December 31, 2024.
[B] Shell Polymers Monaca, which commenced operations in November 2022, was not fully functional during 2023 due to operational and start-up challenges. The facility has since ramped up operations since the first quarter of 2024.

Chemicals sales volumes [A]

Thousand tonnes/year

	2024	2023	2022
Europe			
Base chemicals	2,113	1,741	2,809
Intermediates and other chemical products	1,889	1,848	1,955
Total	4,001	3,589	4,764
Asia			
Base chemicals	1,198	1,190	825
Intermediates and other chemical products	1,744	1,917	2,147
Total	2,943	3,107	2,972
Americas			
Base chemicals	1,366	1,508	2,125
Intermediates and other chemical products	3,566	3,041	2,420
Total	4,932	4,549	4,545
Total product sales			
Base chemicals	4,677	4,439	5,759
Intermediates and other chemical products	7,199	6,806	6,522
Total	11,875	11,245	12,281

[A] Excludes feedstock trading and by-products.

Major chemical plants [A]

		Thousand tonnes/year, Shell share capacity [B]					
	Location	Ethylene	Polyethylene	Styrene monomer	Ethylene glycol	Higher olefins [C]	Additional products
Europe							
Germany	Rheinland	324	–	–	–	–	A
Netherlands	Moerdijk	974	–	817	154	–	A, I
UK	Mossmorran [D]	415	–	–	–	–	O
Asia							
China	Nanhai [D]	1,100	605	645	415	–	A, I
Singapore	Jurong Island [E][F]	281	40	1,069	924	–	A, I, P, O
	Pulau Bukom [F]	1,161	–	–	–	–	A
Americas							
Canada	Scotford	–	–	475	462	–	A, I
USA	Monaca	1,500	1,600	–	–	–	
	Deer Park	889	–	–	–	–	A, I
	Geismar	–	–	–	400	1,390	I
	Norco	1,432	–	–	–	–	A
Total		8,076	2,245	3,006	2,355	1,390	

[A] Major chemical plants are large integrated chemical facilities, typically producing a range of chemical products from an array of feedstocks.
[B] Shell share of capacity of subsidiaries, joint arrangements and associates (Shell- and non-Shell-operated), excluding capacity of the Infineum additives joint ventures.
[C] Higher olefins are linear alpha and internal olefins (products range from C4 to C2024).
[D] Not operated by Shell.
[E] The polypropylene and olefins production mentioned refers to Shell share of capacity of our non-operated joint ventures Petchem Corporation of Singapore (PCS) and The Polyolefin Company (TPC) which are on Jurong Island.
[F] The plant has been classified as held for sale.

A Aromatics, lower olefins
I Intermediates
P Polypropylene
O Other

Other Chemicals locations [A]

	Location	Products
Europe		
Germany	Karlsruhe	A
	Schwedt	A
Netherlands	Rotterdam	A, I, O
Americas		
Argentina	Buenos Aires	I
Canada	Sarnia	A, I

[A] Other chemical locations reflect locations with smaller chemical units, typically serving more local markets.

A Aromatics, lower olefins
I Intermediates
O Other

Progressing CCS to help decarbonise our and customers' activities

As part of our strategy to deliver more value with less emissions, we are investing in carbon capture and storage (CCS) projects to help decarbonise our own operations, as well as those of our customers.

In June 2024, we took a final investment decision to proceed with the Polaris carbon capture project (Shell interest 100%) at the Shell Energy and Chemicals Park Scotford in Alberta, Canada. Polaris is designed to capture an estimated 650,000 tonnes of CO_2 annually. We also took a final investment decision to proceed with the Atlas Carbon Storage Hub which will store the CO_2 captured by the Polaris project.

Both Polaris and Atlas are expected to begin operations towards the end of 2028. A future additional phase of Atlas that could potentially store carbon for the partners and other companies is subject to a future possible investment decision.

Polaris and Atlas will build on the success of the Quest Carbon Capture and Storage (CCS) facility (Shell interest 10%) at Scotford, which has captured and stored more than 9 million tonnes of CO_2 since 2015 (as at the end of 2024). The CO_2 captured by Quest CCS from the hydrogen manufacturing units within the upgrader is stored in a saline aquifer more than 2 kilometres underground.

Northern lights shipments due in 2025

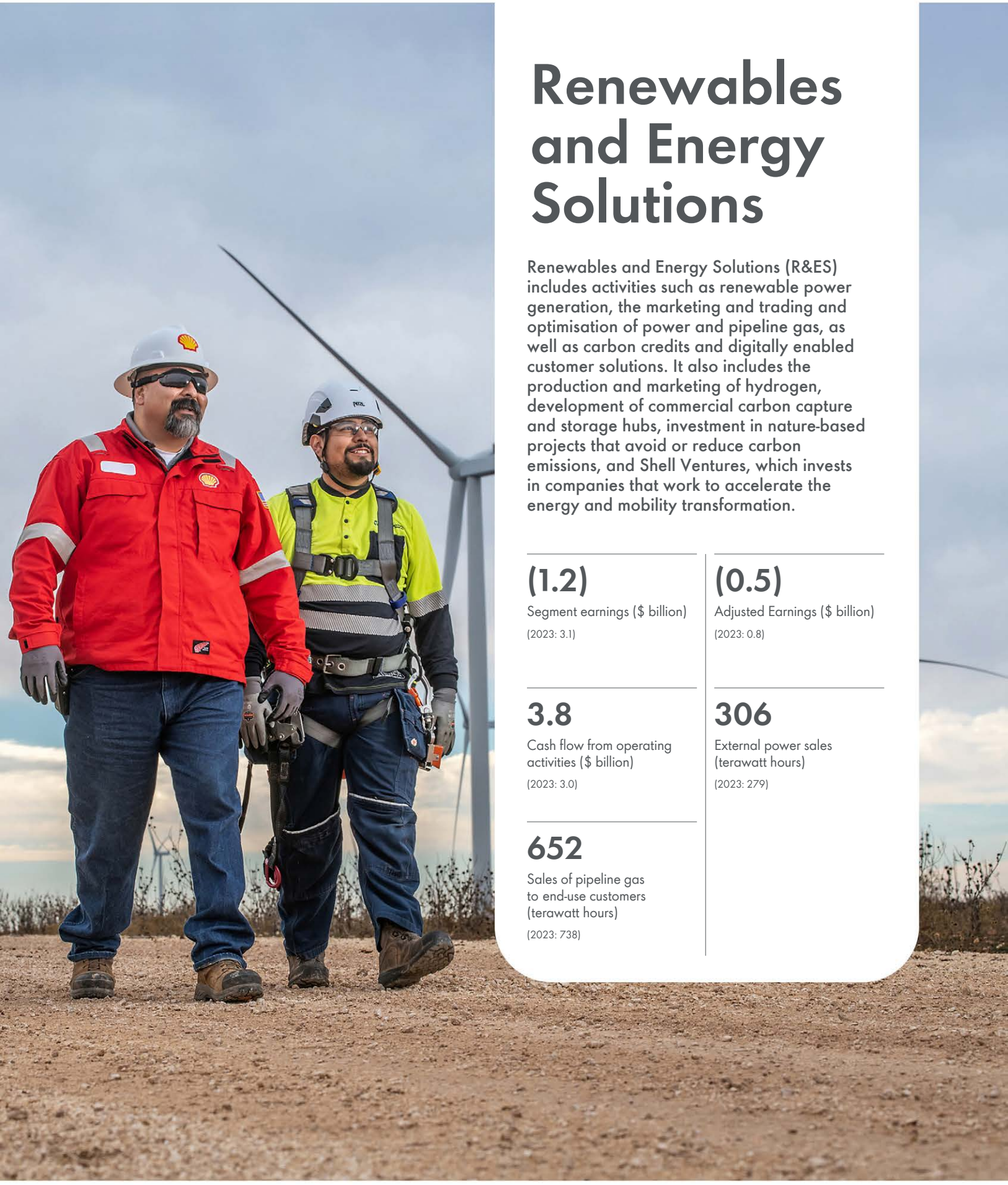
In September 2024, our Northern Lights joint venture in Norway (Shell interest 33.3%) with Equinor and TotalEnergies, completed the onshore and offshore facilities for the world's first project to offer commercial carbon transport and storage as a service. The first marine CO_2 shipments are expected in 2025.

Carbon dioxide captured by customers in industries that are difficult to decarbonise is liquefied, transported by ship to a receiving terminal on the Norwegian coast, then piped 100 km offshore for safe, permanent storage 2,600 metres under the North Sea. Agreements have already been signed with Yara, the crop nutrition company, and Ørsted, the renewable energy company, to transport and store CO_2 from production facilities in the Netherlands and Denmark respectively.

Northern Lights has the capacity to store around 1.5 million tonnes of CO_2 per year. It is part of the Norwegian government's Longship project to develop a decarbonisation value chain, from carbon capture to transport and storage, for companies in Norway and across Europe.

CCS hubs developed to offer CCS-as-a-service to our customers are reported in the Renewable and Energy Solutions segment. Where existing or future CCS projects may help to decarbonise our own assets, they will be reported in the segment where the asset sits.

1, 2. The Northern Lights receiving terminal in Norway. CO_2 is transported by ship, then piped 100 km offshore and stored 2,600 metres under the North Sea.



Renewables and Energy Solutions

Renewables and Energy Solutions (R&ES) includes activities such as renewable power generation, the marketing and trading and optimisation of power and pipeline gas, as well as carbon credits and digitally enabled customer solutions. It also includes the production and marketing of hydrogen, development of commercial carbon capture and storage hubs, investment in nature-based projects that avoid or reduce carbon emissions, and Shell Ventures, which invests in companies that work to accelerate the energy and mobility transformation.

(1.2)
Segment earnings ($ billion)
(2023: 3.1)

(0.5)
Adjusted Earnings ($ billion)
(2023: 0.8)

3.8
Cash flow from operating activities ($ billion)
(2023: 3.0)

306
External power sales (terawatt hours)
(2023: 279)

652
Sales of pipeline gas to end-use customers (terawatt hours)
(2023: 738)

In 2024, we continued to develop our portfolio of renewable and low-carbon solutions, with an increased focus on energy storage, flexible generation and, increasingly, on power trading. We started commercial operations at an offshore wind park in the Netherlands and at two solar parks in Italy and the USA. We also agreed to acquire a combined-cycle gas turbine power plant to strengthen our power business in New England, USA. We made progress in carbon capture and storage by taking the final investment decisions to proceed with two projects in Canada, while our Northern Lights joint venture completed its onshore and offshore facilities in Norway for the world's first commercial carbon transport and storage project. See "Outlook" on pages 16-17 for our Capital Markets 2025 investor update.

Business conditions

For the business conditions relevant to Renewables and Energy Solutions, see "Market overview" on pages 28-30.

Financial delivery

Earnings 2024-2023 [A]

Segment earnings in 2024 decreased by $4,318 million compared with 2023. This reflected lower margins (decrease of $1,719 million), mainly from trading and optimisation primarily in Europe due to lower volatility. This was partly offset by lower operating expenses (decrease of $632 million). Segment earnings in 2024 also included net impairment charges and reversals of $1,085 million, mainly related to renewable generation assets in North America, and partly offset by favourable movements of $300 million relating to an accounting mismatch due to fair value accounting of commodity derivatives, and a net gain on sale of assets of $94 million. These net charges and favourable movements are part of identified items and compare with the full year 2023 which included favourable movements of $2,756 million due to the fair value accounting of commodity derivatives, partly offset by net impairment charges and reversals of $669 million. As part of Shell's normal business, commodity derivative hedge contracts are entered into for the mitigation of economic exposures on future purchases, sales and inventory.

Adjusted Earnings were a loss of ($497) million in 2024. Adjusted Earnings from Renewable Power Generation, Hydrogen, CCS, Nature-Based Solutions (NBS) and Shell Ventures accounted for 146% of 2024 negative Adjusted Earnings. These were partially offset by positive Adjusted Earnings contributions from Energy Marketing and Trading and Optimisation (46%).

Prior year earnings summary

Segment earnings reflected lower margins (a decrease of $684 million), mainly from trading and optimisation. This was due to lower gas and power price volatility in 2023, unfavourable tax movements (a decrease of $218 million), and higher operating expenses resulting from business growth (an increase of $168 million). Segment earnings also included favourable movements of $2,756 million due to the fair value accounting of commodity derivatives, partly offset by net impairment charges and reversals of $669 million. These favourable movements and charges are part of identified items and compare with 2022, which included unfavourable movements of $2,443 million due to the fair value accounting of commodity derivatives and impairment charges of $361 million.

Cash flow from operating activities

Cash flow from operating activities was primarily driven by net cash inflows related to derivatives of $3,012 million and working capital inflows of $923 million, partly offset by tax payments of $457 million and Adjusted EBITDA.

* Non-GAAP measure (see page 445).

Key metrics [A]

	$ million, except where indicated		
	2024	2023	2022
Segment earnings*[B]	(1,229)	3,089	(1,027)
Identified items	(732)	2,333	(2,805)
Adjusted Earnings*[B]	(497)	756	1,778
Adjusted EBITDA*[B]	(22)	1,481	2,503
Cash flow from operating activities	3,798	2,984	(6,394)
Cash capital expenditure*	2,549	2,681	3,469
External power sales (terawatt hours) [C]	306	279	243
Sales of pipeline gas to end-use customers (terawatt hours) [D]	652	738	843

[A] See Note 7 to the "Consolidated Financial Statements" which includes an explanation of the reporting segment changes applicable from 2024.
[B] Segment earnings, Adjusted Earnings and Adjusted EBITDA are presented on a current cost of supplies basis.
[C] Physical power sales to third parties; excluding financial trades and physical trade with brokers, investors, financial institutions, trading platforms, and wholesale traders.
[D] Physical natural gas sales to third parties; excluding financial trades and physical trade with brokers, investors, financial institutions, trading platforms, and wholesale traders. Excluding sales of natural gas by other segments and LNG sales.

Cash capital expenditure

Within cash capital expenditure, $1.6 billion was in low-carbon energy solutions. This includes Renewable Power Generation, Environmental Solutions, Hydrogen and CCS. In 2023, cash capital expenditure included $2.3 billion in low-carbon energy solutions. Higher cash capital expenditure in 2023 was mainly a result of Hollandse Kust Noord spending.

Our cash capital expenditure* is expected to be in the range of $2-3 billion in 2025.

See "Our journey to net zero" on page 87.

Operational performance

External power sales

In 2024, our external power sales increased compared with 2023 as a result of organic customer growth across the portfolio and acquisitions.

Sales of pipeline gas to end-use customers

In 2024, the decrease in our sales of pipeline gas to end-use customers was mainly driven by the decision to prioritise value over volume, focusing on higher-margin sales.

Strategic progress

Portfolio and business developments

Key portfolio and business developments:

- In January 2024, our Savion subsidiary completed the sale of its 50% interest in the Madison Fields 180 MW solar development in Ohio, USA, to InfraRed Capital Partners.
- In March 2024, we sold our 50% interest in SouthCoast Wind, a joint venture established to develop wind projects off the coast of Massachusetts, USA, to our partner, Ocean Winds.
- In March 2024, Hollandse Kust Noord, our offshore wind park in the Netherlands (Shell interest 79.9%), achieved commercial operations.
- In May 2024, Shell opened its first solar park in Zamboni, Italy, with a capacity of 20 MW.
- In June 2024, together with our partner, ATCO EnPower we took the final investment decision on the Atlas Carbon Storage Hub in Canada.

- In July 2024, we took the final investment decision to build REFHYNE II, a 100 MW electrolyser to produce renewable hydrogen, in Germany.
- In September 2024, the Northern Lights joint venture (Shell interest 33.3%) completed the construction of carbon storage facilities in Norway.
- In October 2024, we signed an agreement to acquire RISEC Holdings, which owns a 609 MW two-unit combined-cycle gas turbine power plant in Rhode Island, USA. We completed the transaction in January 2025.
- In December 2024, Rangebank battery energy storage system (BESS) in Australia became operational.

Business and property

We are building a business to deliver clean energy for our customers.

Despite the rapid growth seen in recent years, the renewable energy sector as a whole is experiencing significant challenges, including supply chain disruptions and regulatory hurdles, which have led to delays, increased costs and downward pressure on margins. 2024 was a year of significantly lower volatility in gas and power markets, which prevented us from maintaining trading and optimisation results at the levels we have seen in previous years. Our market outlook and supply chain environment has also deteriorated, resulting in significant impairment charges across various assets within our North American and European portfolios. To address this and given our focus on value, we refreshed our renewable generation, energy marketing, and gas and power trading strategy in December 2024. As part of this refresh, we are shifting our asset portfolio towards energy storage and flexible generation, and we are reducing investments in offshore wind assets. Our refresh also sees an increased focus on gas and power trading, leveraging our existing capabilities and technology to improve returns of this business. We also aim to maximise returns from our existing onshore positions by using capital-light business models, debt finance and working with partners.

Energy marketing

We provide electricity and smart energy solutions to residential, commercial and industrial customers. We do this through direct electricity sales, storage solutions and energy optimisation services. Our largest markets for commercial and industrial customers are Australia and the USA. In Australia, we are one of the largest commercial and industrial retailers of electricity in the market.

Trading and optimisation

We trade and optimise power and pipeline gas, and carbon credits from our own assets and from third parties. We work with Shell businesses across regions to offer energy solutions that can help our customers decarbonise. We have a gas and power trading presence in key markets, including the Americas and Europe, but also in Australia and Asia.

In October 2024, we signed an agreement to acquire RISEC Holdings, which owns a 609 MW two-unit combined-cycle gas turbine power plant in Rhode Island, USA. We completed the transaction in January 2025. This acquisition secures long-term supply and capacity offtake for Shell in the deregulated Independent System Operator New England (ISO New England) power market.

Renewable power generation

We enable renewable power generation by owning and operating solar plants and wind farms, and by participating in joint ventures. We target selective growth in markets where there is potential for integration with our value chain.

A significant milestone was achieved by the CrossWind joint venture (Shell interest 79.9%) when the Hollandse Kust Noord offshore wind development in the Netherlands achieved commercial operations in March 2024 after producing its first electricity in June 2023. The wind farm plans to supply electricity to the 200 MW electrolyser Holland Hydrogen 1 (Shell interest 100%) that we are building in the Netherlands

Savion completes build and sale of Madison Fields

In the USA, our wholly owned subsidiary Savion is a utility-scale solar and energy storage developer. Savion specialises in developing solar power and energy storage projects, serving a variety of customers, including utilities and major commercial and industrial organisations.

In January 2024, Savion completed the construction and sale of its 50% interest in the Madison Fields 180 MW solar park to InfraRed Capital Partners. Madison Fields, in Madison County, Ohio, is the first project to be designed, developed and owned by Savion. In July 2024, the project achieved commercial operations and Savion entered into a long-term power purchase agreement (PPA) with Amazon for the offtake of the facility's full capacity generation of solar energy.

Savion also signed an agreement in June 2024 to sell the 150 MW Cass County Solar Project in Illinois, to Ameren Missouri. In December 2024, Savion's solar farm in Martin County in Kentucky, USA reached commercial operations.

Photo: Madison Fields solar park, Ohio, USA.

In May 2024, Shell opened its first solar park in Zamboni, Italy, with a capacity of 20 MW. Shell also signed a power purchase agreement for Baker Hughes to offtake part of the power generated at the plant.

At the end of 2024, our share of renewable power generation capacity was 3.4 GW in operation and 4.0 GW in development. Our renewable power generation capacities are listed below:

Renewable power generation capacity in operation and in development as of December 31, 2024 - by region

	In operation [A]		In development [B]	
Location	100% capacity (MW)	Shell interest (MW)	100% capacity (MW)	Shell interest (MW)
Asia	2,394	1,983	2,220	2,047
Europe	1,858	1,118	965	661
Americas	465	214	1,920	1,165
Australia	–	–	120	120
Other	84	76	18	17
Total	4,801	3,391	5,243	4,010

Renewable power generation capacity in operation and in development as of December 31, 2024

	2024	2023	2022
Renewable power generation capacity (Shell interest - gigawatts):			
In operation [A]	3.4	2.5	2.2
In development [B]	4.0	4.1	4.2

[A] Renewable generation capacity post commercial operation date.
[B] Renewable generation capacity under construction and/or committed for sale under long-term offtake agreements (PPA).

Hydrogen

Hydrogen can help reduce emissions for our customers in sectors which are hard to decarbonise, such as heavy industry and heavy-duty road transport. We can also use it to help decarbonise our own assets. Shell is part of joint ventures and alliances that have built electrolysers and hydrogen filling stations. We have also participated in feasibility studies that aim to show the viability of a global import and export market for hydrogen.

When it comes to developing hydrogen investment opportunities, we aim to do so where we see adjacencies with our integrated business value chain and where we believe there are pathways to attractive returns. Since 2021, we have operated an electrolyser (Shell interest 100%) in Germany, which produces hydrogen using electricity from renewable sources. In July 2022 we announced the final investment decision to build Holland Hydrogen I. Construction is progressing well, and we expect to start commissioning in late 2026, with production ramp-up in 2027. In July 2024, we took the final investment decision to build REFHYNE II, a 100 MW electrolyser to produce renewable hydrogen in Germany. We plan to use this hydrogen to partially decarbonise the Shell Energy and Chemicals Park Rheinland. We expect the electrolyser to be operational by the end of the decade.

Photo: Holland Hydrogen I, one of Europe's largest renewable hydrogen plants, under construction in the Netherlands.

Carbon capture and storage (CCS)

We report existing CCS operations that help decarbonise our own assets in the segment where the relevant asset sits. We also offer carbon capture, transport and storage to our customers as we seek to help them decarbonise.

In September 2024, the Northern Lights joint venture (Shell interest 33.3%) in Norway completed the construction of its carbon storage facilities. Northern Lights is designed to transport and store up to 1.5 million tonnes of CO_2 per year in its first phase. We expect the first shipment of CO_2 in early 2025 from industrial customers in Norway and Continental Europe. Equinor and TotalEnergies are equal partners in the joint venture.

In June 2024, Shell took an FID with its partner, ATCO EnPower, on the Atlas Carbon Storage Hub (Shell interest 50%). Atlas is designed to store an estimated 650,000 tonnes of CO_2 captured annually from the Shell Energy and Chemicals Park Scotford in Alberta, Canada. The CO_2 is to be captured by Shell's Polaris project for which an FID was also taken in 2024. Both Polaris and Atlas are expected to begin operations towards the end of 2028.

See "Progressing CCS to decarbonise our and customers' activities" on page 67.

Shell also has CCS project opportunities at earlier stages of development in Canada, the USA, Europe, the Middle East and Asia.

Nature and environmental solutions

Through the Nature Based Solutions (NBS) business and the Environmental Products Trading Business (EPTB), we provide carbon credits to our customers. NBS invests in projects that conserve, enhance and restore ecosystems – such as forests, grasslands and wetlands – to prevent GHG emissions or reduce atmospheric CO_2 levels.

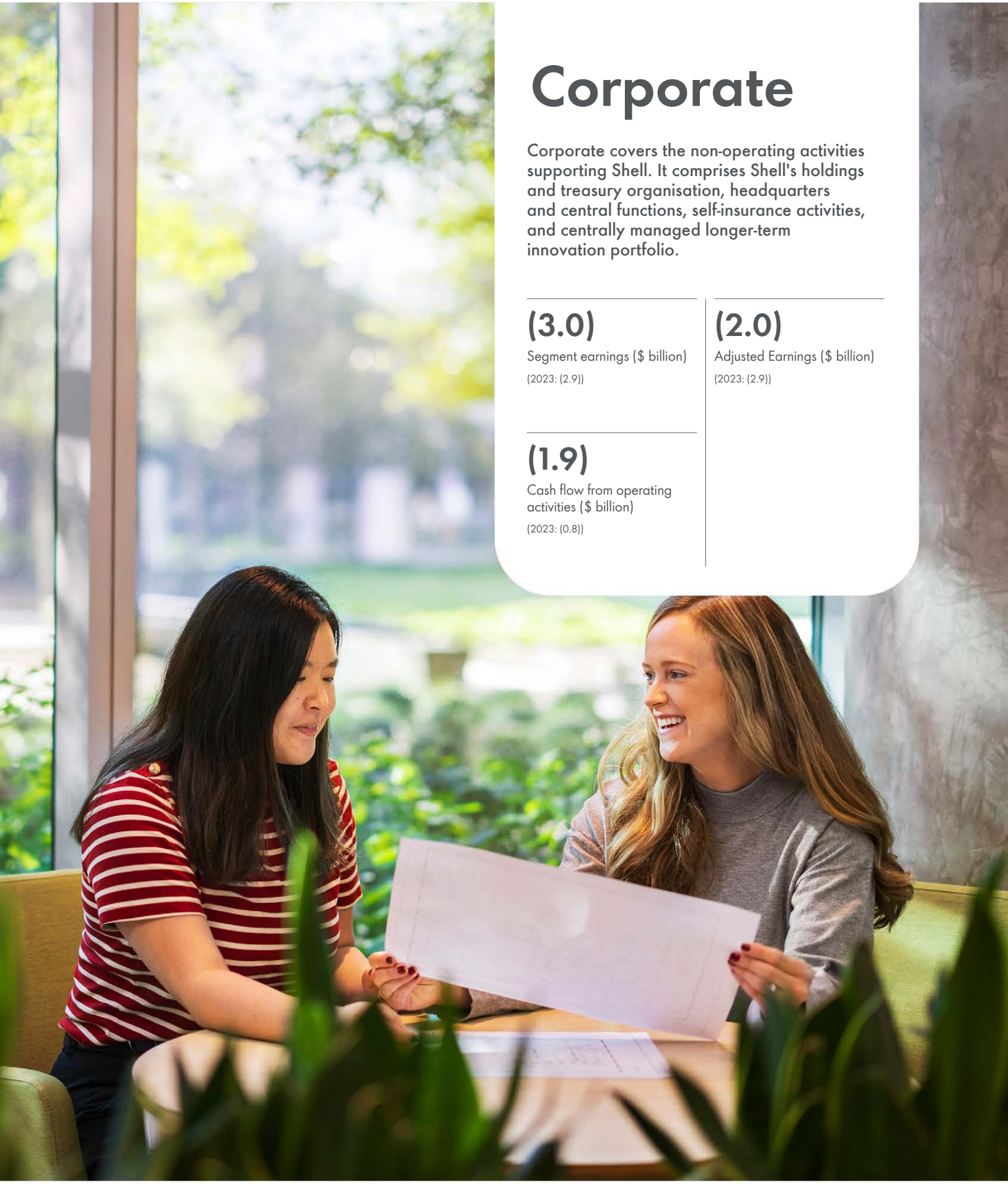
Through EPTB, we develop, source, offtake, trade and supply environmental products across compliance and voluntary markets. This includes working with our other businesses such as Integrated Gas or Marketing to provide integrated energy solutions to customers.

Shell Ventures

Through Shell Ventures entities we act as an investor and a partner to start-ups, businesses and venture funds to help accelerate the energy and mobility transformation. We invest in companies that work on solutions to lower emissions, electrify energy systems, gain data-based insights and provide innovative consumer solutions.

Investments

Within R&ES, we maintain an integrated business model with trading and optimisation to help us manage our value delivery. Our investments in low-carbon solutions are subject to financial modelling and stress-testing, due diligence and risk assessments to ensure that our capital is allocated to the most attractive low-carbon projects and opportunities.



Corporate

Corporate covers the non-operating activities supporting Shell. It comprises Shell's holdings and treasury organisation, headquarters and central functions, self-insurance activities, and centrally managed longer-term innovation portfolio.

(3.0)
Segment earnings ($ billion)
(2023: (2.9))

(2.0)
Adjusted Earnings ($ billion)
(2023: (2.9))

(1.9)
Cash flow from operating activities ($ billion)
(2023: (0.8))

Headquarter and central functions provide communications, finance, treasury, human resources, information technology (IT), legal, real estate and security services to the businesses. These functions also provide support for shareholder-related activities, such as investor relations. The central functions are supported by business service centres, which process transactions, manage data and produce regulatory returns, among other services.

All finance expense, income and related taxes for Shell, which is headquartered in London, are included in the Corporate segment earnings rather than the business segment earnings. Most headquarter and central function costs are recovered from the business segments. Costs that are not recovered or relate to centrally managed activities are retained in Corporate.

The Holdings and Treasury organisation manages many of our corporate entities. It is the point of contact between Shell and external capital markets and, for example, raises debt instruments and conducts foreign exchange transactions. Treasury centres in London and Singapore support these activities.

Shell's innovation portfolio is managed as a central function. We have major research and development (R&D) centres in the Netherlands, the USA and India, and smaller specialised centres in Germany, Brazil and China. We use technology to enhance our existing value chains and help build the energy system of the future. Shell's longer-term innovation portfolio is reported as part of the Corporate segment. Other innovation portfolio activities are reported in the business segments.

Earnings 2024-2023

An increase in the negative segment earnings was mainly driven by reclassifications, from equity to profit and loss, of cumulative currency translation differences principally triggered by changes in the funding structure. This resulted in unfavourable movements of $1,122 million, included in identified items, and was partially offset by favourable tax movements, net interest movements and currency exchange rate effects.

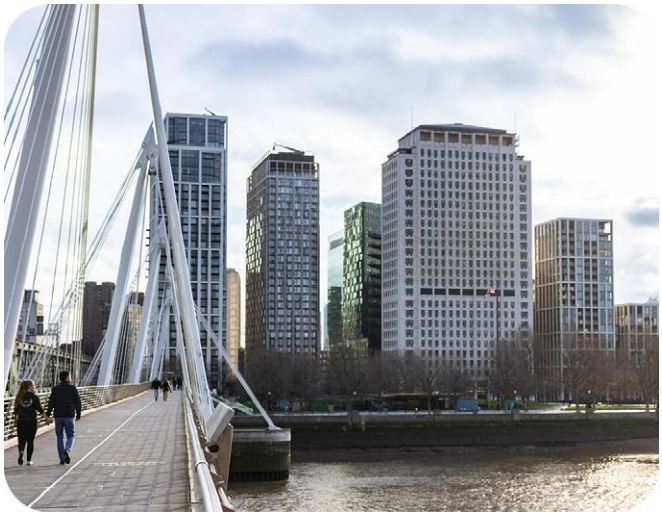


Photo: A view of the Shell Centre, our headquarters, from across the River Thames in London, UK.

Key metrics [A]

	$ million, except where indicated		
	2024	2023	2022
Segment earnings*[B]	(2,992)	(2,944)	(2,562)
Identified items	(1,024)	(69)	(90)
Adjusted Earnings*[B]	(1,968)	(2,875)	(2,472)
Adjusted EBITDA*[B]	(675)	(1,164)	(856)
Cash flow from operating activities	(1,882)	(832)	2,192

[A] See Note 7 to the "Consolidated Financial Statements" which includes an explanation of the reporting segment changes applicable from 2024.
[B] Segment earnings, Adjusted Earnings and Adjusted EBITDA are presented on a current cost of supplies basis.
* Non-GAAP measure (see page 445).

Prior year earnings summary

An increase in the negative segment earnings was mainly driven by unfavourable movements in currency exchange rate effects and tax credits.

Cash flow from operating activities

Cash flow from operating activities decreased primarily due to unfavourable working capital movements.

Self-insurance

Shell, like other major oil and gas companies, self-insures most of its exposures to hazard risks. Our Group insurance companies are wholly owned subsidiaries. They provide insurance coverage to our subsidiaries and entities in which we have an interest, including those that are not controlled by Shell.

We continually assess the safety performance of our operations and make risk mitigation recommendations, where relevant, to keep the risk of an accident as low as possible. Our insurance companies are adequately capitalised and they may transfer risks to third-party insurers where economical, effective and relevant.

See "Risk factors" on page 140.

Other central activities

Shell operates certain key activities centrally. These include Projects & Technology, intellectual property and information technology. This allows us to provide leadership, innovation and risk management across our business.

Information technology and cyber security

Digitalisation is a key success factor in delivering Shell's strategy. We are transforming our IT systems to support our evolving portfolio of businesses. We invest in new technologies, such as artificial intelligence (AI) and quantum computing, to enhance our IT capabilities and bring value to the business.

The growing dependence on IT and rising data volumes introduce risks. A breach in IT systems or data loss could significantly impact Shell and its supply chain, leading to productivity disruptions, loss of confidential information, regulatory penalties, and potential reputational harm. Additionally, sanctions, including orders to delete data and regulatory fines, might be imposed on Shell if authorities find Shell failed to meet its obligations in relation to cyber security or personal data protection.

In 2024, we continued to implement a comprehensive cyber security programme as part of our cyber defence strategy. This was done through the formalisation of the Information and Digital Technology (IDT) requirements based on the Shell Performance Framework (SPF). Our Information and Digital Technology Standard sets out a structured approach to identify, assess and mitigate IT and cyber security risks. Following the approval of the IDT requirements, we refreshed our Information Risk Management (IRM) capabilities and streamlined the organisational structure to enhance the formal Chief Information Security Officer (CISO) role, with support from the Executive Committee. This included integrating the cyber defence teams and other decentralised cyber security functions into the central IRM organisation. These changes are in effect from March 2025.

Our global integrated IRM and cyber defence teams are staffed with cyber security professionals that monitor, assure and help defend our global IT and data landscape. As all our employees play a role in protecting our IT systems, we give them training on data protection, regulatory compliance and regularly run cyber security awareness campaigns and simulations on how to respond to cyber-attacks.We evaluate emerging digital technologies with our businesses annually to align on their impact and necessary remediation, considering the value and opportunities they present, as well as their incremental risks. Additionally, Shell works to monitor and respond in real time to cyber security incidents as they happen.

Cyber security risk management

Our cyber security capabilities are embedded into our IT systems, and our IT and data are protected by various detective and protective technologies and controls. A structured approach to identify, assess and mitigate the IT and cyber security risks is built into our support processes and is benchmarked to external best practices. We continuously track cyber-attacks, threat intelligence, cyber legislation (including the EU AI Act) and vulnerabilities relevant to our IT landscape and have a well-structured incident management and escalation process in place.

The security of IT services, where operated by external IT companies, is managed through contractual clauses and additionally through formal supplier assurance reports for critical IT services. Shell collaborates bi-annually with third parties and supplements these reports with bi-annual internal benchmarking to assess our cyber security risk management practices against cyber security best practices and peer organisations. Using the insights gained from these assessments, along with changes in external risks and the outcome of internal audits and control testing results, we enhance our cyber security capabilities and adopt a risk-based strategy for our investment decisions concerning cyber risk exposure.

Shell employees and contract staff are required to complete mandatory training courses and participate in regular cyber threat awareness campaigns. In 2024, we introduced the Think Secure Scorecard across the organisation. This provides data insights into the cyber behaviour of Shell staff on an individual level, encouraging continuous learning about cyber threats and advocating personal accountability. Shell has robust governance processes to monitor key cyber risks, provide risk assurance and encourage a corporate culture that prioritises security.

Our cyber security strategy is regularly reviewed and updated, as required, by our CISO and Shell's Information and Digital Technology leadership team, with oversight from the EC, the Audit and Risk Committee, and the Board. These reviews involve consideration of external environment changes; strategic, operational, and cultural risks; response to cyber security risks and implementation of further remedial actions as appropriate; and updates on the performance and benchmarking of the Group's cyber defences. In 2024, dedicated deep dives into areas, such as geopolitical developments and artificial intelligence (AI), were performed. In 2024, Shell reported data privacy incidents to regulatory authorities across multiple jurisdictions. There were no cyber or data privacy incidents that had a material impact on Shell's business strategy, operations, or financial condition.

The IRM organisation leadership teams involved in monitoring and managing our cyber security threat risk and assurance process have an average of around 25 years of experience. The IRM organisation is led by our CISO, who has more than 20 years of experience in the IT and information security field, including serving as the chief information officer for various large public companies. In addition to holding the Certified Information Systems Security Professional (CISSP) certification, our CISO holds other qualified technical expert certifications, has completed the London School of Economics Executive Development programme, and holds an undergraduate degree in management information systems, risk management, and corporate finance. Our CISO is active in various cyber-security industry trade groups and is on the board of Oil and Natural Energy Information Sharing and Analysis Center (ONE-ISAC), having previously held leadership positions in the oil and gas cyber security sector.

Intellectual property

At Shell, we have a wide-ranging intellectual property (IP) portfolio which includes patents, trademarks, know-how, trade secrets and copyrights. The distinctive Shell Pecten, a trademark in use since the early 20th century, and trademarks where the word Shell appears, help raise the profile of our Shell brand globally. We protect and defend our IP and we respect the valid IP rights of others. At December 31, 2024, we held 8,677 patents. This includes granted patents and pending patent applications.

Shell holds trademarks globally, even in countries where we no longer operate. For instance, in 2024, we renewed national trademark registrations for the word marks "Shell", "Shell Spirax" and the Shell logo, through our local agent SABA Intellectual Property, who paid $10,543 in official fees to the Syrian Patent Office. Although we ceased operations in Syria in 2011, these renewals do not indicate any product sales in the country.

Innovation

We use technology to improve our efficiency, safety and competitiveness. By applying our technical and digital capabilities, we can also help build the low-carbon energy system of the future. In 2024, we invested $1,099 million in research and development (R&D). We combine our expertise in R&D with digital solutions, often powered by AI, to help accelerate innovation and scale up more effectively.

Shell's Projects & Technology organisation and our businesses work together to determine the content, scope and budget for developing new technology that supports our activities. This includes partnering with start-ups and small- to medium-sized enterprises that are in the early stages of developing new technologies through our Shell Ventures and Shell GameChanger programme. New technology is developed using a maturation process, to systematically mitigate technical and commercial risks, while staying aligned with Shell's strategic ambitions and deployment commitments.

See "Risk factors" on page 141.

Innovation is pivotal to what we do

Our research and development (R&D) seeks to deliver innovative, cost-competitive solutions that meet global energy demands while reducing emissions. To achieve this, we have a network of R&D centres and collaborate closely with our customers, suppliers and partners, as well as with many of the world's leading universities and research institutes.

Global Lubricants

In 2024, for instance, our Global Lubricants business was named industry leader by market analysts Kline + Company for the 18th consecutive year for consumer automotive, commercial automotive and industrial lubricants. These lubricants are designed to continually push the boundaries of engine and equipment performance and longevity, as well as to reduce emissions. This leadership is built on more than 45 years of research and commercial development of our proprietary gas-to-liquids (GTL) technology with which we make high-quality liquid fuels, base oils for lubricants, and other speciality products from natural gas.

Keeping data centres cool

We recently extended our comprehensive GTL product range by developing an immersion cooling fluid for data centres that significantly improves their performance and energy efficiency. Data centres consume vast amounts of electricity to power the servers and cool the heat they generate. Our new GTL immersion cooling fluid allows servers to run faster and cooler, improving computing performance and enabling considerable reductions in energy use, CO_2 emissions and operating costs compared to conventional air cooling.

Second-generation biofuels

Shell is one of the world's largest producers, distributors and traders of biofuels made from sugar cane, corn and other types of biomass. In 2024, we commissioned a demonstration plant in partnership with Green Plains in Nebraska, USA, that uses our proprietary Shell Fibre Conversion Technology to convert the oil in corn kernels into second-generation low-carbon biofuel and high-protein animal feed. This bolt-on technology is designed to help first-generation ethanol producers increase yield and margin – making their operations more valuable and more resilient.

Photo: Two scientists analysing industrial and off-highway lubricants at Shell's Shanghai Technology Centre, China.

Our journey to net zero

We have a target to be a net-zero emissions energy business by 2050 and work with our customers across sectors to help accelerate the energy transition.

Shell's energy transition plans

Our target is to become a net-zero emissions energy business by 2050 and we are transforming our operations and energy products. We believe this target supports the more ambitious goal of the Paris Agreement, to limit the rise in the global average temperature this century to 1.5°C above pre-industrial levels.

The Paris Agreement aims to strengthen the global response to the threat of climate change by "holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels".

As we implement our strategy to deliver more value with less emissions, we are responding to evolving global demand by offering our customers more and cleaner energy solutions.

The world needs a balanced energy transition, one that maintains secure energy supplies, while accelerating the transition to affordable low-carbon solutions. We believe our strategy supports a balanced transition by providing the oil and gas people need today, while helping to build the energy system of the future.

We recognise that the scale of the energy transition requires fundamental change in both supply and demand. It will take supportive government policies, advances in technology and investments by companies across all parts of the economy to achieve this. We advocate policies, legislation and regulations in areas where we can best support the decarbonisation of our customers, reduce our own emissions and help accelerate the energy transition.

There remains significant uncertainty around the shape of the future energy system. As a result, we are developing a multi-energy portfolio that has the flexibility to respond to uncertainty, and that we believe will allow us to remain a successful business while working towards net-zero emissions. We are changing the mix of energy products we sell and developing new carbon removal and abatement businesses.

We aim to lead in the energy transition where we have competitive strengths, see strong customer demand, and identify clear regulatory support from governments.

We are reducing emissions from our operations, and helping our customers transition to more cost-competitive and cleaner energy solutions. Our energy transition plans cover all our businesses.

Integrated Gas - growing our world-leading LNG business with lower carbon intensity

We plan to grow our LNG volumes by adding new liquefaction capacity. We are developing new projects with lower carbon intensity by using renewable power and carbon abatement technology in the form of carbon capture and storage (CCS). Beyond our own production, we will continue to add scale and flexibility to our portfolio by growing the LNG volumes that we purchase from third parties.

LNG provides both energy security and flexibility because it can be easily transported to places where it is needed most. It is also a critical fuel in the energy transition. Natural gas is the lowest-carbon fossil fuel, producing around 50% less carbon emissions than coal when used to generate electricity, according to the International Energy Agency.

Upstream - cutting emissions from oil and gas production.

As we sustain oil and gas liquids production, we will continue to focus on delivering more value with less emissions. The oil we are producing will increasingly come from our deep-water business. Through innovative designs, our deep-water platforms are producing higher-margin and lower-carbon barrels.

As a responsible energy producer, we are implementing carbon management plans and working to reduce carbon emissions from our assets. We are looking at ways to electrify our offshore oil facilities, and using wind and solar power to reduce operational emissions. We see CCS as a core technology to further capture emissions from our facilities, reusing our own oil and gas fields where possible.

We set a target to eliminate routine flaring from our upstream-operated assets by 2025 [A] five years ahead of the World Bank's initiative. Routine flaring burns gas that is not used or reinjected into wells, which is inefficient and contributes to climate change. With effect from January 1, 2025, SPDC has ceased routine flaring of associated gas, with the completion of essential gas capture projects and the shut-in of remaining facilities from which gas cannot be transported to market. We have therefore met our target to eliminate routine flaring from our upstream-operated assets by 2025 as of this date.

[A] This target was subject to the completion of the sale of The Shell Petroleum Development Company of Nigeria Limited (SPDC). As detailed elsewhere in this report, on March 13, 2025, Shell completed the sale of SPDC to Renaissance.

Downstream, Renewables and Energy Solutions – focusing our businesses to offer more low-carbon solutions while reducing sales of oil products.

We are starting from a place of strength. We believe that our global customer reach, our innovation and technology, and the strength of our supply and trading capabilities, mean we are well placed to deliver the low-carbon solutions people and businesses need, such as electric vehicle charging and biofuels, to support our customers as they decarbonise. Leveraging our integrated portfolio of energy and chemicals parks, terminals and blending plants, we will make, buy, and blend products to meet customer demand. We are also able to identify changes in demand for products so that we can respond quickly.

To help us get to net zero, we have set short-, medium- and long-term targets to reduce the carbon intensity of the energy products we sell, measured by using our net carbon intensity (NCI) metric. We believe these targets are aligned with a 1.5°C pathway derived from scenarios developed for the IPCC's Sixth Assessment Report (AR6). For more information see "Setting targets for NCI" on page 102.

We set out our climate-related targets and ambition on page 93.

See "Our strategy" on pages 10-13.

Climate-related targets and ambition

0% **Net-zero emissions by 2050** (Scope 1, 2 and 3)

Emissions from own operations (Scope 1 and 2, operational control)

Target
Halve Scope 1 and 2 emissions by 2030, on a net basis
(2016 baseline)

Target
Eliminate routine flaring
from Upstream operations by 2025 [A]

Target
Maintain methane emissions intensity below 0.2% and achieve near-zero methane emissions by 2030 [B]

Emissions from the products we sell (Scope 3, equity boundary)

Target
Net carbon intensity (NCI)
Reduce NCI by 15-20% by 2030 (2016 baseline)

Ambition
Oil products ambition
Reduce customer emissions from the use of our oil products by 15-20% by 2030, Scope 3, Category 11 [C] (2021 baseline)

All our businesses contribute to delivering more value with less emissions

Leading Integrated Gas

Lower the carbon intensity of our LNG business

Advantaged Upstream

Cutting emissions from oil and gas production

Differentiated Downstream, Renewables and Energy Solutions

Offering more low-carbon solutions while reducing sales of oil products

[A] This target was subject to the completion of the sale of The Shell Petroleum Development Company of Nigeria Limited (SPDC). With effect from January 1, 2025, SPDC ceased routine flaring. As detailed elsewhere in this report, on March 13, 2025, Shell completed the sale of SPDC to Renaissance.
[B] On an intensity basis. Methane intensity is measured separately for oil and gas assets with marketed gas (gas, LNG and GTL available for sale) and assets without marketed gas (oil and gas assets where gas is reinjected).
[C] We set this ambition in March 2024. Customer emissions from the use of our oil products (Scope 3, Category 11) were 517 million tonnes carbon dioxide equivalent (CO_2e) in 2023 and 569 million tonnes CO_2e in 2021.

Focused decarbonisation pathways

We have identified pathways to net zero for our two biggest customer sectors, transport and industry. These two sectors make up more than 70% of total global final energy demand and more than 55% of global carbon emissions today. Our pathways are based on sectors where we believe we have the competitive advantage to provide our customers with the affordable products they need through the transition.

Note: The order from left to right and the size of the circles in the graphic above indicate their likely relative prominence within that section of the pathway. Significant uncertainty remains on the shape of these future pathways.

Leading to our strategic decarbonisation areas for this decade

Electric vehicle charging	Biofuels infrastructure	Integrated power positions	CO_2 capture and removal value chains

Enabled by our strengths and competitive advantages

Trading capabilities and infrastructure network | Technology and innovation | Policy and advocacy

Climate-related risks and opportunities identified by Shell over the short, medium and long term T

We are continually enhancing our approach to assessing and managing risks and opportunities resulting from climate change. This includes considering different time horizons and their relevance to risk identification and business planning. We actively monitor societal developments, such as regulation-driven carbon pricing mechanisms and customer-driven preferences for products. We incorporate these developments, where relevant, into potential scenarios which provide insights into how the energy transition may unfold in the medium and long term. These insights and those from various external scenarios (such as those prepared for the IPCC AR6) help guide how we set our strategy, capital allocation and climate-related targets and ambition.

The process for identifying and assessing climate-related risks is set out in "Risk management" on page 134. The impact and likelihood assessment described on page 134 helps us to prioritise climate-related risks and determine their relative materiality, based on a comprehensive picture of significant risks to any relevant business objectives. We consider climate-related risks from a strategic, operational, conduct and culture perspective to help us maintain a comprehensive view of the different types of climate risks we face and the different time horizons in which they may affect us. Monitoring and reviewing risks is a key risk management process. The EC, the Board and Board committees review climate-related risks and their impact on the Group, as appropriate. This allows management to take a holistic view and optimise risk mitigation responses, to ensure that climate-related risk responses are properly integrated into the relevant activities.

Shell has identified climate change and the energy transition as a material risk. The risk could potentially continue to result in changes to the demand for our products, supply chains and markets; further changes to the regulatory environment in which we operate; and increased litigation (see Note 32 to the Consolidated Financial Statements "Legal proceedings and other contingencies" on page 309).

The risk is composed of a combination of complex and interrelated elements that affect Shell's value chain and our asset, product and business portfolio. The risk landscape is evolving rapidly. To achieve our climate-related targets and ambition, active holistic management of all climate-related risk components is important. The composite risk is broken down into the following sub-components:

- commercial risk;
- regulatory risk;
- societal risk (including litigation risk); and
- physical risk.

We are working to mitigate our identified climate-related risks and deliver more value with less emissions by focusing on performance, discipline and simplification. We believe we are positioning ourselves to achieve our financial targets, and climate-related targets and ambition by:

- reducing the GHG emissions from our operations (Scope 1 and 2) by improving our energy efficiency, deploying renewable electricity, and reducing methane emissions in our assets and projects;
- growing our LNG business while decarbonising our LNG portfolio in two main ways: by growing our portfolio with a lower carbon intensity, and continuing to invest in emissions abatement projects to reduce both CO_2 and methane emissions;
- managing our Integrated Gas and Upstream portfolio to support a balanced energy transition by cutting emissions from oil and gas production. Oil production is increasingly from our deep-water business which, through innovation, produces higher-margin and lower-carbon barrels; and
- focusing our businesses in Downstream and Renewables and Energy Solutions to offer more low-carbon energy solutions, while reducing sales of oil products.In addition, we adapt our assets and activities as necessary to enhance our resilience to the physical risks related to climate change. Many of these adaptations are based on our Safety, Environment and Asset Management (SEAM) Standards and practices.

See page 83 for more details of physical risks.

Our approach to climate change emphasises the need to work collaboratively. We aim to continue to build strategic alliances with customers, other companies and entire sectors so we and they can make profitable progress towards net zero.

We engage with governments on their climate policies to advocate policies that help establish regulatory frameworks that will help to enable society to reach the goals of the Paris Agreement. We are a founding member of the Oil and Gas Climate Initiative (OGCI), a group of 12 national and international energy companies. The OGCI supports the climate goals of the Paris Agreement and recognises that collective actions can help drive the energy transition.

We are signed up to the Oil and Gas Decarbonization Charter (OGDC), in which companies have pledged to achieve near-zero methane emissions by 2030, zero routine flaring by no later than 2030 and commit to halving scope 1 and 2 emissions by or before 2050. In April 2024, we became the first official partner to the World Bank Global Flaring and Methane Reduction Fund partnership which we committed to at the 28th Conference of the Parties (COP28) in 2023. We are a founding signatory of the Oil and Gas Methane Partnership (OGMP) 2.0 reporting framework. Shell achieved the OGMP 2.0 Gold standard of reporting in 2023.

As a leading global energy business, Shell seeks to identify opportunities in the energy transition. These risks and opportunities are described below. Climate-related risks are also summarised in the "Risk management and risk factors" section on pages 137-138.

Time horizons: short, medium and long

Due to the inherent uncertainty and pervasive risks across our strategy and business model, we monitor climate-related risks and opportunities across multiple time horizons.

- Short term (up to three years): we develop detailed financial projections and use them to manage performance and expectations on a three-year cycle. These projections incorporate decarbonisation measures required to meet our short-term targets.
- Medium term (generally three to 10 years): these are embedded within our Operating Plan, with our continued focus on the customer, the investments and portfolio shifts required in the medium term that will reshape Shell's portfolio.
- Long term (generally beyond 10 years): our portfolio and product mix are expected to evolve over time with changing customer demand.

Transition risks

Description	**CR1 Climate-related commercial risk** ◦ The transition to a low-carbon economy may lead to lower sales volumes and/or margins due to a general reduction or elimination of demand for oil and gas products, possibly resulting in underutilised or stranded oil and gas assets, and a failure to secure new opportunities. ◦ Changing preferences of investors and financial institutions could reduce access to and increase the cost of capital.
Relevant time horizon	medium and long
Potential material impacts	**Lower demand and margins for oil and gas products** ◦ Changing customer sentiment favouring the use of renewable and sustainable energy products may reduce demand for our oil and gas products. An excess of fossil fuel supply over demand could in the future result in reduced fossil fuel prices. This could result in lower earnings in the future, cancelled projects and potential impairment of certain assets. **Changing preferences of investors and financial institutions** ◦ Certain investors have decided to divest their investments in fossil fuel companies. If this were to increase significantly, it could have a material adverse effect on the price of our securities and our ability to access capital markets. Some investors and financial institutions have been aligning their portfolios to a low-carbon and net-zero world, driven by both regulatory and broader stakeholder pressures. ◦ A failure to decarbonise our business portfolios in line with investor and lender expectations could have a material adverse effect on our ability to access financing for certain types of projects. This could also adversely affect our partners' ability to finance their portion of costs, either through equity or debt. ◦ Sensitivity analysis of a 1% shift in Shell's weighted average cost of capital on asset carrying values is presented in the section "Carbon pricing and discount rate sensitivities" on page 89. **Remaining in step with the pace and extent of the energy transition** ◦ The energy transition provides us with significant opportunities, as described in "Climate-related opportunities" (CO1) below. If we fail to stay in step with the pace and extent of change, or customers and other stakeholders' demand for low-carbon products, this could adversely affect our reputation and future earnings. If we move much faster than society, we risk investing in technologies, markets or low-carbon products for which there may be insufficient demand. Therefore we cannot transition too quickly or we will be trying to sell products that customers do not want. If we are slower than society, customers may prefer a different supplier, which would reduce demand for our products and adversely affect our reputation and materially affect our financial results. ◦ Low-carbon technology and innovation are essential to our efforts to help meet the world's energy demands competitively. If we are unable to develop the right technology and products in a timely and cost-effective manner there could be an adverse effect on our future earnings. The operating margins for our low-carbon products and services have been, and could continue to be, lower than the margins we have experienced historically in our oil and gas operations.
Description	**CR2 Climate-related regulatory risks** ◦ The transition to a low-carbon economy has increased, and is likely to continue to increase the cost of compliance for our assets and/or products, and may include restrictions on the use of hydrocarbons. The lack of net-zero-aligned global and national policies and frameworks increases the uncertainty around this risk.
Relevant time horizon	short, medium and long
Potential material impacts	**Increased compliance costs** ◦ Some governments have introduced carbon pricing mechanisms, which we believe can be an effective way to reduce GHG emissions across the economy at the lowest overall cost to society. ◦ Shell's cost of compliance with the Emissions Trading Scheme (ETS) and related schemes was around $381 million in 2024, as recognised in Shell's Consolidated Statement of Income for 2024. A further $3,565 million of costs in respect of emissions schemes and related environmental programmes were incurred in respect of biofuels ($2,942 million) and renewable power ($623 million) programmes (see Note 5 to the "Consolidated Financial Statements" on pages 266-267). ◦ Shell's annual carbon cost exposure (including ETS and related schemes) is expected to increase over the next decade because of evolving carbon regulations, with the forecast annual cost exposure in 2025 estimated to be around $1 billion and around $5 billion in 2034. This estimate is based on a forecast of Shell's equity share of emissions from operated and non-operated assets, and real-term carbon cost estimates using the mid-price scenario (see Note 4 to the "Consolidated Financial Statements" on pages 255-265 for more information) [A]. This exposure also takes into account the estimated impact of available CO_2 free allowances as relevant to assets based on their location [B]. **Restrictions on use of hydrocarbons** ◦ Governments may set regulatory frameworks in the future that could further restrict our exploration and production of hydrocarbons, and introduce controls to limit the use of such products. Failure to replace proved reserves could result in an accelerated decrease of future production, which could have a material adverse effect on our earnings, cash flows and financial condition. **Lack of net-zero-aligned global and national policies and frameworks** ◦ The lack of net-zero-aligned global and national policies and frameworks increases the uncertainty around how carbon pricing and other regulatory mechanisms will be implemented in the future. This makes it harder to determine the appropriate assumptions to be taken into account in our financial planning and investment decision processes which could impair our ability to evaluate the robustness of our plans and opportunities. Changing net-zero policies and regulations could also lead to impairments of our existing oil and gas assets.

[A] Carbon cost estimates that include inflation, usually a yearly 2% inflation is applied.
[B] Free allowances are amounts of CO_2 an asset is allowed to emit without paying the emissions trading scheme (ETS) price/tax.

Transition risks continued

Description	**CR3 Climate-related societal risks (including litigation)** ◦ As societal expectations develop around climate change, there is a potential impact on Shell's licence to operate, reputation, brand and competitive position. This is likely to include litigation.
Relevant time horizon	short, medium and long
Potential material impacts	**Decline in reputation, brand and licence to operate** ◦ Societal expectations of businesses are increasing, with a focus on business ethics, quality of products, contribution to society, safety and minimising damage to the environment. There is a focus on the role of the oil and gas sector in the context of climate change and the energy transition. This could negatively affect our brand, reputation and licence to operate, which could limit our ability to deliver our strategy, reduce consumer demand for our products, harm our ability to secure new resources and contracts, and restrict our ability to access capital markets or attract employees. **Deteriorating relationships with key stakeholders** ◦ Failure to decarbonise Shell's value chain in line with societal, governmental and investor expectations is a material risk to Shell's reputation as a responsible energy company. The impact of this risk includes shareholder divestment, greater regulatory scrutiny and potential asset closure resulting from public interest groups' protests. **Litigation** ◦ There is an increasing risk to oil and gas companies from private (including non-governmental organisations) and governmental lawsuits. If successful, these claims may have wide-ranging consequences, including forcing entities to hand over strategic autonomy in part to regulators, divesting from hydrocarbon technologies, denying entities regulatory approvals and/or requiring payment of fines or penalties or large compensation packages to plaintiffs. ◦ In some countries, governments, regulators, organisations and individuals have filed lawsuits of a wide variety, including seeking to hold oil and gas companies liable for costs associated with climate change, or seeking court-ordered reductions in emissions, challenging the regulatory approvals and operating licences, or challenging energy transition strategies and plans. While we believe these lawsuits to be without merit, losing could have a material adverse effect on our earnings, cash flows and financial condition. ◦ In the Netherlands, in a case against Shell brought by a group of environmental NGOs and individual claimants (referred to herein as "Milieudefensie"), the Hague District Court in 2021 found that while Shell was not acting unlawfully, Shell had the obligation to reduce the aggregate annual volume of CO_2 emissions of Shell operations and energy-carrying products sold across Scope 1, 2 and 3 by 45% (net) by the end of 2030 relative to its 2019 emissions levels. For Scope 2 and 3, this was a significant best-efforts obligation. Shell appealed that ruling. On November 12, 2024, the Hague Court of Appeal upheld Shell's appeal and dismissed the claim against Shell. In doing so, the Court of Appeal annulled the earlier judgment of the District Court in its entirety with immediate effect. On February 11, Milieudefensie filed an appeal to the Supreme Court of the Netherlands. ◦ We have also been subjected to climate activism which has caused disruptions to our operations and such disruptions could happen again in the future.

Physical risks

Description	**CR4 Climate-related physical risks** ◦ The potential physical effects of changing climatic conditions could adversely affect our assets, operations, supply chains, employees and markets.
Relevant time horizon	short, medium and long
Potential material impacts	**Types of physical risk** The impact of physical risks comes from both acute and chronic climate hazards. Acute hazards, such as flooding and droughts, wildfires and more severe tropical storms, and chronic hazards, such as rising temperatures and rising sea levels, could potentially impact some of our facilities, operations and supply chains. The frequency of these hazards and impacts is expected to increase in certain locations. Extreme weather events, whether or not related to climate change, could have a negative impact on our earnings, cash flows and financial condition. Mitigation of physical risks, whether or not related to climate change, is considered and embedded in the design and construction of our projects, and/or operation of our assets to help minimise the risk of adverse incidents to our employees and contractors, the communities where we operate, and our equipment. **Shell's assessment** ◦ In 2023, we carried out a detailed review to assess the impact of a range of changing climatic conditions, including projected changes in temperature, precipitation, wind and sea levels, across segments and geographies for our significant assets. We used IPCC climate modelling data covering three exploratory climate scenarios (RCP2.6, RCP4.5 and RCP8.5 [A]) across the time horizons 2025, 2030 and 2050. These scenarios were selected to ensure a broad range of risks and uncertainties were assessed. There have been no changes to the climate modelling data that would require a full update of the 2023 assessment. We have confirmed there are no changes to the risk profile of our significant assets and accounted for portfolio changes. ◦ In the short to medium term, the risks identified were found to be related to factors that Shell is already aware of (whether or not related to climate change) and that the assets are actively managing to mitigate, e.g. hurricane impacts on the US Gulf Coast, rising air temperatures in the Middle East and water scarcity in Europe and Asia. As an example, in recent years the Rhine river in Europe has seen historic lows during the summer months leading to challenges in the use of barges for transportation of our products. Dredging of harbours and investment in shallower-draft barges have helped to mitigate the risk. ◦ In the long term, the results of the exercise indicated that while we have evaluated against current climate modelling projections and our current asset portfolio, by 2050 the frequency and severity of the climate hazards may differ from current projections. The level of predictability is such that the need for investment in climate adaptation measures at the assets is not immediate and the results mean we are in a position to monitor the assets and determine whether there is any need for adaptation action, e.g. the impact of potential water scarcity on various assets. ◦ Our testing to assess the potential impact of climate-related changes on our significant assets covers over 70% of the carrying value of our physical assets as at December 31, 2023. Over 12% (based on the carrying value) of physical assets tested are considered to be exposed to climate-related physical risks in the short to medium term which the assets are already actively managing to mitigate. In addition, we reviewed significant acquisitions made in 2023 and 2024, none of which were found to have significant climate-related physical risks in the short to medium term. ◦ Our business plan reflects the impact of mitigating actions in the short to medium term for the assets assessed. We will continue to monitor and assess the future exposure of our assets in the longer term to changing climatic conditions to establish the need for any further adaptation actions and related metrics. ◦ The impact of physical climate change on our operations is unlikely to be limited to the boundaries of our assets. For example, the downstream transportation and distribution of our products from our own operations could potentially be exposed to climate-related hazards that ultimately impact our operations. The overall impact, including how supply chains, resource availability and markets may be affected, also needs to be considered for a holistic assessment of this risk. Our assets manage this risk as part of broad risk and threat management processes as required by our SEAM Standards, part of the wider Shell Performance Framework.

[A] Representative Concentration Pathway (RCP) refers to the GHG concentration (not emissions) trajectory adopted by the IPCC. The pathways describe different climate change scenarios, all of which are considered possible depending on the amount of GHG emitted in the years to come.

Opportunities

Description	**CO1 Climate-related opportunities** ◦ The transition to a low-carbon economy also brings significant opportunities for us to benefit from changing customer demands, given our position as a leading global energy provider.
Relevant time horizon	short, medium and long
Potential material impacts	As the global energy mix changes, our current infrastructure, know-how and global footprint put us in an ideal position to service the changing energy demands of the market. Our global customer reach, our use of technology and innovation to develop the business models and fuels of the future and the strength of our trading capabilities, coupled with our own production, will help us deliver affordable and low-carbon solutions for our customers. Our research and development (R&D) activities are an important contributor to achieving our net-zero emissions target. We believe we are the investment case and partner of choice through the energy transition. As we work to deliver more value with less emissions we are focusing on: **LNG** ◦ Demand for LNG is expected to grow. We are one of the world's largest suppliers of LNG, with around 40 million tonnes of equity capacity. Gas is critical to the energy transition and plays an important role in enabling countries to replace coal-fired power generation with a less carbon-intensive alternative, as on average, coal-to-gas switching reduces emissions by 50% when producing electricity [A]. LNG also provides grid stability alongside wind and solar power in electricity generation. LNG is the lowest-carbon marine fuel available at scale today and offers significant GHG emissions reductions compared with conventional fuels. Furthermore, LNG offers a long-term decarbonisation pathway through bioLNG when the supply is scaled up. Shell has developed the world's largest LNG fuelling network of ports and bunker vessels on key trading routes, enabling more customers to choose LNG. Beyond our own production, we expect to continue to add scale and flexibility to our portfolio by buying LNG from others. Our LNG business will remain a key priority for Shell, meeting continued strong demand especially in Asia where we send most of our shipments today. Our integrated model is at the heart of LNG value creation, with our business spanning every stage of the LNG journey. **Biofuels** ◦ We invest in biofuels where we see growing customer demand and where we can use the strength of our supply and trading positions. Aviation and shipping remain some of the slower-to-decarbonise sectors and we expect that they will require low-carbon molecular solutions, such as biofuels, at scale in the future. Shell is already one of the world's largest energy traders and blenders of biofuels, selling significantly more low-carbon fuels than we produce. We expect to continue to grow both our own production and sales of biofuels in the coming years. We are focusing on producing premium biofuels such as sustainable aviation fuel, renewable diesel and renewable natural gas (RNG). We expect that these fuels will help to reduce emissions in commercial road transport. To support our production of biofuels, we are investing in new feedstocks through investments and partnerships, while using the strength of our trading business to expand sales beyond our production volumes. Through our Raízen joint venture in Brazil we are already the largest producer of second-generation ethanol and the leading sugar-cane ethanol producer globally. To support growing demand for biofuels this decade, we are developing more second-generation technologies. We are also developing technologies and feedstocks that aim to allow continued and sustainable growth in biofuels, while minimising impacts on the environment and food supplies. **Integrated power** ◦ Renewable power is expected to be critical for helping our commercial customers decarbonise and we will continue to grow our integrated power business. We are making disciplined choices to create value from our portfolio, stepping back from activities that do not fit our strategy or generate enough return. We aim to use the strength of our trading and optimisation capabilities to meet the growing need for flexible power storage solutions such as batteries. We already have a significant presence in battery and storage through our ventures programme and investments in research and development. We are focusing on selling power, including renewable power, to business customers. We are also using renewable power to decarbonise our own operations. Over time, we expect to use our renewable power capacity to produce low-carbon molecules, such as hydrogen. **Electric vehicle charging** ◦ We are growing our electric vehicle charging business to support customers who choose to change from a petrol or diesel vehicle to an electric one. We are focusing on offering our customers choices where we see increasing demand, such as in the fast-growing electric mobility markets of China and Europe. We are focusing on public charging, rather than home charging, because we believe it will be needed most by our customers. We have a major competitive advantage in terms of locations, as our global network of service stations is one of the largest in the world. We have other competitive advantages, such as our convenience retail offering which allows us to offer our customers coffee, food and other convenience items as they charge their cars. **Carbon capture and storage** ◦ We are developing technologies related to carbon capture and storage (CCS) and carbon removals, which are necessary to reduce emissions where there are few low-carbon alternatives. For the rest of this decade, we expect to direct most of our investments in CCS towards decarbonising our own operations. We are also looking to turn this into a profitable business for Shell by helping other companies decarbonise their operations in the future. However, in many countries CCS still lacks a clear business model. To address this challenge, Shell advocates policy mechanisms to enable CCS, and supports industry partnerships dedicated to the growth of commercially viable CCS projects.

[A] Source "The Role of Gas in Today's Energy Transitions", IEA 2019.

Impact of climate-related risks and opportunities on Shell's businesses, strategy and financial planning T

The transformation of the energy system to net-zero emissions will require simultaneous action in three areas:

- an unprecedented improvement in the efficiency with which energy is used;
- a sharp reduction in the carbon intensity of the energy mix; and
- the mitigation of residual emissions through the use of technology and natural sinks.

While it is difficult to predict the exact combination of actions that will deliver the net-zero goal, scenarios help us to consider the variables and the potential direction and pace of the transition needed. Scenarios are not intended to be predictions of likely future events or outcomes and, therefore, are not the basis for Shell's Operating Plans and financial statements.

We have been developing scenarios within Shell for almost 60 years, helping Shell leaders to explore ways forward and make better decisions. Shell scenarios are designed to stretch management's thinking when it comes to considering events that may be possible, even if remotely. Scenarios help management to consider options and make choices in times of uncertainty and transition as we grapple with tough energy and environmental issues. They are aligned to different energy transition pathways and help in decision-making by guiding the identification of a wide range of risks and opportunities.

Different socio-economic and technological parameters are used to construct these scenarios, such as:

- sectoral and regional energy demand;
- future trajectory of oil consumption and demand for natural gas;
- renewable electricity demand and the pace of the electrification of the global energy system;
- supply of solar and wind energy;
- pace of uptake of electric vehicles;
- demand for biofuels;
- growth of the hydrogen economy;
- level of CCS available;
- deployment of lower-carbon energy technologies; and
- global trade of oil and gas.

Management consideration of different climate change outcomes informs a range of areas, including, but not limited to, the setting of the long-term strategy, business planning, and investment and divestment decisions. The outcomes considered by management vary in relation to the extent and pace of the energy transition.

Carbon Management Framework (CMF)

Shell's CMF provides the structure and processes to drive delivery of Group carbon targets. The CMF seeks to manage and reduce emissions in a manner that is similar to how we use our financial framework. Carbon budgets are used as input and guidance for the annual business plan process. They act as an effective mechanism to maintain absolute emissions below a capped level and help drive a change in product mix. The carbon budgets are allocated to the businesses and enable trade-offs between emitting carbon and generating shareholder value to occur within those budgets. The CMF informs portfolio decisions and supports delivery of our decarbonisation targets.

For the 2024 Operating Plan cycle, our net carbon intensity (NCI) targets and 2030 oil products emissions ambition were translated into relevant budgets or targets for each business (see Greenhouse gas and energy management below). These budgets and targets were used by each business to optimise their operating plans. Performance against the annual NCI target, including the relative mix of products, is monitored and reviewed by the EC on a quarterly basis, facilitating corrective action if required.

Examples of how our decarbonisation targets are taken into account in fundamental decisions across the organisation include the use of carbon metrics (profitability per unit of carbon emitted), a key parameter considered in decision-making and when comparing different growth opportunities against each other within the various businesses.

Greenhouse gas and energy management

Each Shell entity and Shell-operated venture is responsible for the development of its Greenhouse Gas (GHG) Emissions and Energy Management Plan. Plans are in place for all significant assets.

Our Greenhouse Gas and Energy Management process sets out Shell's requirements for GHG reduction opportunities and portfolio choices to meet our carbon budgets and achieve our decarbonisation targets. These requirements allocate accountabilities for GHG and energy management within businesses, assets and projects, including responsibility for analysing our emissions, identifying improvement opportunities, and forecasting future performance. These requirements are applied to capital project delivery and through the asset-level annual business planning process, ensuring it is reflected in both opportunity realisation and strategic asset management planning.

A key aspect of the GHG and Energy Management process is the development of an energy efficiency and greenhouse gas reduction opportunity curve, economically assessed against the current and future costs of carbon. This information provides the basis for forecasts of absolute GHG emissions and associated intensities at the asset and project level. These forecasts are then aggregated to inform decisions on potential decarbonisation opportunities across our businesses.

The Shell Global Process Council for GHG and Energy Management, led by the Global Process Owner for GHG and including business and functional experts, meets regularly to evaluate opportunities for the ongoing improvement of processes, tools, communications, and capabilities needed within the businesses to achieve our decarbonisation aspirations.

Impact on strategic planning

The application of scenario analysis informs our assessment of the impact of a wide range of risks and opportunities, including climate-change-related issues, on our strategy and business planning at the Group and business levels. At the Group level, the potential impacts of the energy transition on our business model are discussed and assessed by the Board and the EC as part of the annual strategic and business planning cycle. This assessment allows us to challenge accepted ways of thinking, identify material risks and opportunities, and identify key dilemmas and trade-offs.

Key financial and non-financial components of business planning

The Board approves our annual business plan. The plan contains operational and financial metrics, and its objective is to drive the delivery of our strategy.

Decarbonisation targets are key to our business planning process. Each business owner offers viable Scope 1, 2 and 3 reduction opportunities as part of this process, in line with the CMF, see "Our approach to Sustainability" on page 127).

The business plan is underpinned by assumptions about internal and external parameters and includes:

- commodity prices;
- refining margins;
- production levels and product demand;
- exchange rates;
- future carbon costs;
- the schedules of capital investment programmes; and
- risks and opportunities that may have material impacts on free cash flow.

These assumptions are developed with input from our scenarios and internal estimates and outlooks. The level of uncertainty around these assumptions increases over longer time horizons.

Impact on business and financial planning

There is no single scenario that underpins Shell's business and financial planning. Our scenarios help develop our future oil and gas pricing outlooks. These outlooks take account of factors relating to the energy transition, such as potential changes in supply and demand (see details of scenario parameters above). The low-, mid- and high-pricing outlooks are prepared by a team of experts, reviewed by the EC and approved by the CEO and CFO. The mid-price outlook represents management's reasonable best estimate and is the basis for Shell's financial statements, Operating Plans and impairment testing.

Shell's Operating Plan reflects Shell's strategy. We will continue to update our Operating Plan, price outlooks and assumptions as we move towards net-zero emissions by 2050.

As described in "Climate-related risks and opportunities identified by Shell over the short, medium and long term" on page 80, the low-pricing outlooks could result in increased commercial, regulatory and societal risks. The prioritisation of these risks is described in "Risk management" on page 134. Given our net-zero target, the use of low-pricing outlooks is part of our resilience testing and resulting actions.

Our strategy and national net-zero commitments

In accordance with UK Listing Rule 6.6.12G, we have taken into account the extent to which country-level net-zero commitments have been considered in developing our energy transition plans.

Our strategy aims to deliver a net-zero emissions energy business by 2050. The pace of the energy transition will be heavily influenced by government policy, creating a strong country and regional dimension in seeking to deliver the goals of the Paris Agreement. Our commitment is a global one and, as such, we look to deliver our strategy through a global lens.

We seek to translate our energy transition plans into specific targets and plans at a business segment level. We also seek to take capital deployment and portfolio decisions in the context of the integrated nature of our global operations. However, we continue to recognise the importance of engagement and collaboration in delivering the fundamental changes to the energy system that are required. This includes supporting and advocating for policies that aim to reduce carbon emissions and working with governments and other stakeholders in the development of policies that support the transition to a low-carbon energy system. As national transition plans develop, consideration will be given to the impact on our operations and the associated implications for our energy transition plans.

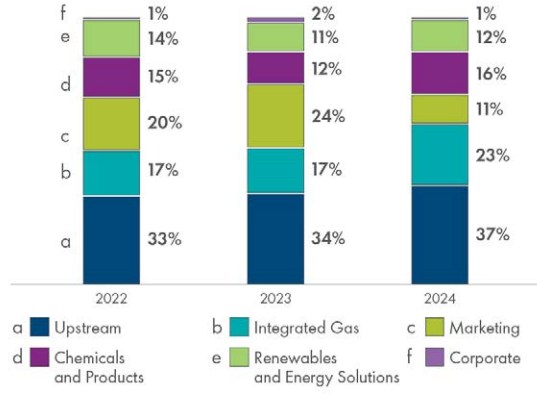
Resilience of Shell's strategy to different climate-related scenarios T

Shell's financial strength and access to capital give us the ability to reshape our portfolio as the energy system transforms. They also allow us to withstand volatility in oil and gas markets.

As we work towards net-zero emissions, we continue to exercise focus and discipline to optimise our capital allocation and operational expenditure, balancing energy security and demand, as well as internal and external transition considerations and opportunities. We will make disciplined choices about where we can create the most value for our investors and customers through the energy transition.

Investing in the energy transition

Cash capital expenditure evolution by segment [A]



[A] 2022 and 2023 for Marketing and Chemicals and Products revised to conform with reporting segment changes applicable from 2024.

Cash capital expenditure monitors investing activities on a cash basis, excluding items such as lease additions which do not necessarily result in cash outflows in the period. The measure comprises the following lines from the Consolidated Statement of Cash Flows: Capital expenditure, Investments in joint ventures and associates and Investments in equity securities. The reconciliation of "Capital expenditure" to "Cash capital expenditure" is presented in Note 7 to the "Consolidated Financial Statements" on pages 268-273.

Investing in the energy transition: Total cash capital expenditure

Total cash capital expenditure* of $21.1 billion in 2024

Non-energy products [A] **$2.2 billion**	Low-carbon energy solutions [B] **$2.4 billion**
LNG, gas and power marketing and trading [C] **$5.0 billion**	Oil, oil products and other [D] **$11.5 billion**

[A] Products for which usage does not cause Scope 3, Category 11 emissions: Lubricants, Chemicals, Convenience Retailing, Agriculture and Forestry, Construction and Road.
[B] E-Mobility and Electric Vehicle Charging Services, Low-Carbon Fuels, Renewable Power Generation, Environmental Solutions, Hydrogen, CCS. We define low-carbon energy products as those that have an average carbon intensity that is lower than conventional hydrocarbon products, assessed on a life-cycle basis.
[C] LNG Production & Trading, Gas and Power Trading, and Energy Marketing.
[D] Upstream segment, GTL, Refining and Trading, Marketing fuel and hydrocarbon sales, Shell Ventures, Corporate segment.

Total cash capital expenditure was lower in 2024 compared with 2023 driven by project prioritisation and cost optimisation. Movements by category in 2024 versus 2023 were driven by:

- Non-energy products: comparable year-on-year.
- Low-carbon energy solutions: decreased by $3.2 billion compared with 2023. This reflects lower spend on renewable power generation projects and lower spend in the Marketing business, when compared with the significant inorganic growth investments in 2023 (the acquisition of Nature Energy for nearly $2 billion and the roll-out of electric vehicle charging).
- LNG, gas and power marketing and trading: 25% higher spend in 2024 compared with 2023 due to investments in LNG infrastructure projects and Renewable and Energy Solutions (two-unit combined-cycle gas turbine power plant).
- Oil, oil products and other: 8% lower spend compared with 2023 due to reductions in Marketing and Upstream (in deep water assets, including in the Gulf of America, partly offset by higher spend in Nigeria and the UK).

Cash capital expenditure* by segment for 2025 is expected to be around $7 billion for Upstream ($7.9 billion in 2024), around $6 billion for Integrated Gas ($4.8 billion in 2024), in the range of $2-3 billion for Marketing ($2.4 billion in 2024), around $3 billion for Chemicals and Products ($3.3 billion in 2024), in the range of $2-3 billion for Renewables and Energy Solutions ($2.5 billion in 2024).

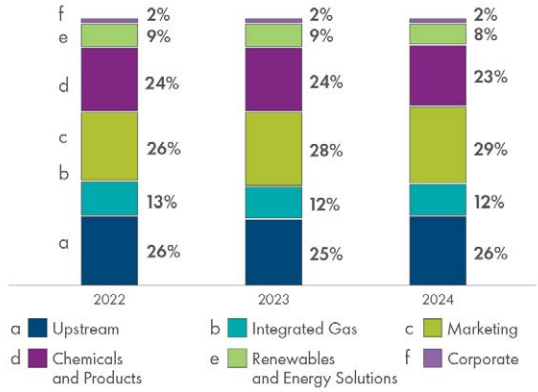
Energy transition: Total cash capital expenditure* by segment

$ billion

Classification [1]	Segment	2024		2023		2022	
Non-energy products [A]	Marketing	0.6	2.2	0.9	2.3	1.5	3.9
	Chemicals and Products	1.6		1.4		2.4	
Low-carbon energy solutions [B]	Marketing	0.8	2.4	3.3	5.6	1.4	4.3
	Renewables and Energy Solutions	1.6		2.3		2.9	
LNG, gas and power marketing and trading [C]	Integrated Gas	4.2	5.0	3.7	4.0	3.8	4.2
	Renewables and Energy Solutions	0.8		0.3		0.4	
Oil, oil products and other [D]	Integrated Gas	0.6	11.5	0.5	12.5	0.5	12.5
	Upstream	7.9		8.3		8.1	
	Marketing	1.0		1.6		2.1	
	Chemicals and Products	1.8		1.6		1.3	
	Renewables and Energy Solutions	0.1		0.1		0.2	
	Corporate	0.1		0.4		0.3	
Total		21.1	21.1	24.4	24.4	24.8	24.8

[1] See the corresponding footnotes under the table "Investing in the energy transition: Total cash capital expenditure" on page 87 for more details.
* Non-GAAP measure (see page 445).

Operating expenses evolution by segment [A]



[A] 2022 and 2023 for Marketing and Chemicals and Products revised to conform with reporting segment changes applicable from 2024.

Operating expenses is a measure of Shell's cost management performance, comprising the following items from the "Consolidated Statement of Income": production and manufacturing expenses; selling, distribution and administrative expenses; and research and development expenses. See Note 7 to the "Consolidated Financial Statements" for reconciliation of total operating expenses.

Total operating expenses* in 2024 were $36.9 billion with a focus on structural cost savings and improved operational efficiency, including lower maintenance cost.

Energy transition: Total operating expenses

Total operating expenses* of $36.9 billion in 2024

Non-energy products [A] **$7.4 billion**	Low-carbon energy solutions [B] **$1.9 billion**
LNG, gas and power marketing and trading [C] **$5.4 billion**	Oil, oil products and other [D] **$22.2 billion**

[A] Products for which usage does not cause Scope 3, Category 11 emissions: Lubricants, Chemicals, Convenience Retailing, Agriculture & Forestry, Construction & Road.
[B] E-Mobility and Electric Vehicle Charging Services, Low-Carbon Fuels, Renewable Power Generation, Environmental Solutions, Hydrogen, CCS. We define low-carbon energy products as those that have an average carbon intensity that is lower than conventional hydrocarbon products, assessed on a life-cycle basis.
[C] LNG Production & Trading, Gas & Power Trading, and Energy Marketing.
[D] Upstream segment, GTL, Refining & Trading, Marketing fuel and hydrocarbon sales, Shell Ventures, Corporate segment.

Total operating expenses* by segment for 2025 are expected to be approximately $9 billion for Upstream (2024: $9.8 billion), $5 billion for Integrated Gas (2024: $4.4billion), $11 billion for Marketing (2024: $10.7 billion), $8 billion for Chemicals and Products (2024: $8.4 billion), and $3 billion for Renewables and Energy Solutions (2024: 2.9 billion).

Energy transition: Total operating expenses* by segment

$ billion

Classification [1]	Segment	2024		2023		2022	
Non-energy products [A]	Marketing	3.9	7.4	4.1	8.1	3.9	7.5
	Chemicals and Products	3.5		4.0		3.6	
Low-carbon energy solutions [B]	Marketing	0.7	1.9	0.9	2.2	0.5	1.5
	Renewables and Energy Solutions	1.2		1.3		1.0	
LNG, gas and power marketing and trading [C]	Integrated Gas	3.7	5.4	4.0	6.5	4.4	6.9
	Renewables and Energy Solutions	1.7		2.5		2.5	
Oil, oil products and other [D]	Integrated Gas	0.8	22.2	0.8	23.2	0.8	23.6
	Upstream	9.8		9.8		10.3	
	Marketing	6.0		6.2		5.8	
	Chemicals and Products	4.9		5.6		6.0	
	Renewables and Energy Solutions	0.0		0.0		0.0	
	Corporate	0.7		0.8		0.7	
Total		36.9	36.9	40.0	40.0	39.5	39.5

[1] See the footnotes under the table "Energy transition: Total operating expenses" on page 88 for more details.
* Non-GAAP measure (see page 445).

Key aspects of Shell's financial resilience in the context of climate-related impacts are assessed and described in more detail in Note 4 to the "Consolidated Financial Statements". This describes how Shell has considered climate-related impacts in key areas of the financial statements and how this translates into the valuation of assets and measurement of liabilities. Shell's financial statements are based on reasonable and supportable assumptions that represent management's best estimate of the range of economic conditions that may exist in the foreseeable future.

Sensitivity analysis using external, and often normative, climate change scenarios has been performed for the period covering asset life cycles. If these different price outlooks were used, this would impact the recoverability of certain assets recognised in the "Consolidated Balance Sheet" as at December 31, 2024.

As there is no single scenario that underpins our Operating Plans, sensitivity analysis has been conducted using a range of key assumptions to test the resilience of our asset base. This includes (but is not limited to):

- sensitivity analysis on asset carrying values using commodity price outlooks from external, and often normative, climate change scenarios;
- carbon price sensitivities;
- chemical and refining margins price sensitivities; and
- discount rate sensitivities.

Commodity price sensitivities

Oil and gas prices are one of the key assumptions that underpin Shell's financial statements, with the mid-price outlook informed by Shell's scenario planning representing management's reasonable best estimate. Price outlooks reflect a broad range of factors, including, but not limited to, future supply and demand, and the pace of growth of low-carbon solutions. The scenarios have been selected to illustrate the resilience of the asset base under a range of possible outcomes, including the price implications arising from the ambitious IEA Net Zero Emissions scenario which provides a potential path for the global energy system (IEA NZE50) to achieve net-zero emissions by 2050. Sensitivities of asset carrying values to prices are under the assumption that all other factors in the models used to calculate impacts remain unchanged.

Sensitivity analysis has been performed using price outlooks from:

1. Average prices from three 1.5-2°C external climate change scenarios: in view of the broad range of price outlooks across the various scenarios, the average of three external price outlooks was taken from IHS Markit/ACCS 2024; Woodmac WM AET-1.5 degree; and IEA NZE 2050 (IEA NZE50).

   Applying this priceline to Integrated Gas assets of $74 billion and Upstream assets of $77 billion as at December 31, 2024, shows recoverable amounts that are $11-15 billion and $1-3 billion lower, respectively, than the carrying values as at December 31, 2024.

2. Hybrid Shell Plan and IEA NZE50: for this Shell's mid-price outlook is applied for the next 10 years. Because of greater uncertainty, the IEA normative Net Zero Emissions scenario is applied for the period after 10 years. This gives less weight to the price-risk uncertainty in the first 10 years reflected in the Operating Plan period and applies more risk to the more uncertain subsequent periods.

   Applying this priceline to Integrated Gas assets of $74 billion and Upstream assets of $77 billion as at December 31, 2024, shows recoverable amounts that are $7–10 billion and up to $1 billion lower, respectively, than the carrying values as at December 31, 2024.

3. A 1.5°C scenario, derived from IEA NZE50: this priceline applies the IEA normative Net Zero Emissions scenario over the whole period under review and reflects the sensitivity to a pure net-zero emissions scenario from the IEA.

   Applying this priceline to Integrated Gas assets of $74 billion and Upstream assets of $77 billion as at December 31, 2024, shows recoverable amounts that are $21-27 billion and $5-7 billion lower, respectively, than the carrying values as at December 31, 2024.

In addition, further sensitivities are provided of -10% or +10% to Shell's mid-price outlook, as an average percentage over the full period. A change of -10% or +10% to the mid-price outlook, as an average percentage over the full period, would result in around $5-9 billion impairment or some $2-5 billion impairment reversal, respectively, in Integrated Gas and Upstream as at December 31, 2024.

Carbon pricing

We consider the potential costs associated with operational GHG emissions when we assess the resilience of projects. For each region, we have developed short-, medium- and long-term estimates of future costs of carbon. These are reviewed and updated annually. See Note 4 to the "Consolidated Financial Statements" for further details on our regional cost of carbon estimates.

Up to 2030, costs for carbon emissions estimates are largely policy driven through emissions trading schemes or taxation which is levied by governments and which varies significantly on a country-by-country basis. Beyond 2030, where policy predictions are more challenging, the costs for carbon emissions are estimated based on the expected costs of abatement technologies required for 2050. The estimated cost is trending towards $50 to $230 per tonne (RT24), depending on the country, in 2050.

See "The resilience of Shell's strategy" on page 86 for more information on how carbon costs impact our resilience to climate-related risks, including sensitivity analysis.

See Shell's "Climate and Energy Transition Lobbying Report 2024", which will be published in May 2025, for more information on Shell's advocacy across a range of issues including carbon pricing.

Carbon pricing and discount rate sensitivities

The risk of stranded assets may increase in a higher-carbon-price scenario. Sensitivities of our asset carrying values to carbon prices have been based on the IEA NZE50 scenario to illustrate the resilience of asset carrying values to higher long-term carbon prices than those included in the Shell mid-price outlook.

Applying the IEA NZE50 carbon price scenario to Integrated Gas assets of $74 billion and Upstream assets of $77 billion, up to the end of life of these assets, shows recoverable amounts that are $1-2 billion and up to $1 billion lower, respectively, than the carrying values as at December 31, 2024.

Applying the IEA NZE50 carbon price scenario to Chemicals and Products assets of $38 billion shows recoverable amounts that are up to $1-2 billion lower than the carrying values as at December 31, 2024. For Chemicals and Products, increased carbon costs could potentially be recovered partially through increased product sales prices.

See "Carbon pricing" above for more information on our carbon price assumptions.

The discount rate applied for impairment testing is based on a nominal post-tax weighted average cost of capital (WACC) and is determined at 7.5%, except for power activities in the Renewables and Energy Solutions segment where 6% is applied. The discount rate includes generic systematic risk for energy transition risk. In addition, cash flow projections applied in individual assets include specific asset risks, including risk of transition. An increase in generic systematic energy transition risk could lead to a higher WACC and consequently to a higher discount rate to be applied in impairment testing. We have used a 1% shift in discount rate for sensitivity analysis purposes as an indicator of the resilience of our asset base to incremental increases in our cost of capital.

An increase of the WACC of 1% under the assumption that all other factors in the models used to calculate recoverability of carrying values remain unchanged would lead to a change in the carrying value of $1-3 billion for Integrated Gas and Upstream and no significant impairment in other segments.

See Note 4 to the "Consolidated Financial Statements" on pages 255-265 for further information on climate-related impacts in key areas of the financial statements.

Delivering progress in the energy transition

To ensure the resilience of our strategy, our responses to the risks and opportunities identified are:

- delivery through our integrated business model;
- decarbonisation of our energy value chains and operations; and
- a focus on demand-driven decarbonisation – recognising that we need to work with our customers to identify low-carbon energy solutions for their energy demands in the sectors where we have competitive advantages.

Our integrated approach allows us to withstand volatility in oil and gas markets. Our financial framework aims to enhance shareholder distributions, maintain discipline in capital allocation and targets a strong credit investment grade rating.

- In Integrated Gas, we are growing our world-leading liquefied natural gas (LNG) business. We plan to grow LNG sales by 4-5% a year through to 2030. LNG provides energy security and flexibility because it can be easily transported to places where it is needed most. Gas is a critical fuel in the energy transition and plays an important role as a lower-carbon alternative to coal for industry, and provides grid stability alongside wind and solar power in electricity generation.
- In Upstream, we continue to focus on more value and less emissions. The oil we are producing will increasingly come from our world-class deep-water business. Through innovative designs, our deep-water platforms are producing higher-margin and lower-carbon barrels. As we work towards net-zero emissions, we will continue to approach capital and carbon allocation with discipline and focus.
- In Downstream, Renewables and Energy Solutions, we are making clear choices and changes to enable this business to thrive through the energy transition. We are focusing on developing low-carbon energy and solutions where we have competitive advantages and are starting to see increasing demand. We are focusing on value over volume across all our businesses in Downstream, Renewables and Energy Solutions, while driving down our emissions and helping to drive down our customers' emissions.
- We are progressing the repurposing of our energy and chemical parks; these key focused assets allow us to underpin our hydrocarbon energy sales and the sales of lower carbon energy products. Our energy transition plans for this decade across our Downstream, Renewables and Energy Solutions business are focused on: growing our electric vehicle charging business; investing in biofuels; continuing to grow our integrated power positions, and developing technologies related to CCS and carbon removals.

See "Outlook" on page 16.

Our research and development (R&D) activities are an important contributor to achieving our net-zero emissions target. They are an important way to address the technology risk as mentioned in "Transition risks" on page 81 and "Transition opportunities" on page 84.

In 2024, our R&D expenditure on projects that contributed to decarbonisation was around $497 million, representing about 45% of our total R&D spend, compared with around 49% in 2023. This includes expenditure on reducing GHG emissions:

- from our own operations, for example, by improving energy efficiency and electrification;
- from the fuels and other products we sell to our customers - for example, biofuels, synthetic fuels and products made from low-carbon electricity, and hydrogen produced using renewable sources;
- by carbon capture, utilisation and storage applied to hydrogen production from natural gas and other carbon emissions;
- by researching nature-based solutions to offset emissions; and
- for our customers, through renewable power generation, storage, e-mobility and other electrification solutions.

Examples of R&D areas other than decarbonisation include safety, performance products, such as lubricants and polymers, automation and artificial intelligence.

Decarbonising our value chains and operations

We seek to base the decarbonisation of our value chains and operations on an understanding of the decarbonisation strategies and plans of our customers and users of our energy products. We are focused on decarbonising our own operations by:

- making portfolio changes such as acquisitions and investments in low-carbon intensity projects, decommissioning plants, divesting assets, while sustaining our oil production with increasingly lower carbon intensity;
- progressing the repurposing of our energy and chemicals parks;
- improving the energy efficiency of our operations;
- using more renewable electricity to power our operations; and
- developing CCS for some of our facilities.

If required, we may choose to use high-quality carbon credits to offset any remaining emissions from our operations, in line with the carbon mitigation hierarchy of avoid, reduce and compensate or to meet local regulatory requirements.

We have set an interim target to achieve a 50% reduction in absolute Scope 1 and 2 emissions under our operational control by 2030 on a net basis, when compared with 2016.

We set a target to eliminate routine flaring from our upstream-operated assets by 2025 [A]. With effect from January 1, 2025, SPDC has ceased routine flaring of associated gas, with the completion of essential gas capture projects and the shut-in of remaining facilities that do not yet meet the applicable emissions standards. We have therefore met our target to eliminate routine flaring from our upstream-operated assets by 2025 as of this date. We also aim to maintain methane emissions intensity for operated oil and gas assets below 0.2% and achieve near-zero methane emissions intensity by 2030.

[A] This target was subject to the completion of the sale of The Shell Petroleum Development Company of Nigeria Limited (SPDC). As detailed elsewhere in this report, on March 13, 2025, Shell completed the sale of SPDC to Renaissance.

See "Working to reduce our absolute Scope 1 and 2 emissions" on page 103.

Supporting our customers in achieving net-zero emissions

The transport sector is by far the largest market for our oil products. We are building on our customer relationships and expertise to help drive the decarbonisation of passenger cars, heavy-duty trucks, planes and ships. Changes to the supply of energy products and decarbonising the energy system require structural changes in the end-use of energy.

This requires energy users to improve, update or replace equipment so that they can use carbon-based energy more efficiently, or switch to low- and zero-carbon energy. For example, replacing internal combustion engine vehicles with electric vehicles, converting heavy-duty transport to biofuels such as renewable diesel, and, in the future, hydrogen and its derivatives.

Such structural changes are expected to help to trigger transitions along the supply chain of individual sectors and across sectors, including the production of energy and emissions over time. The IEA estimates that these changes in the end use of energy will require substantial investment.

The World Energy Outlook 2024 report by the IEA includes an estimate that by 2035 for every one US dollar spent on fossil fuels, a further $20 will need to be spent on clean energy (low-emissions fuels, and energy-efficient and low-emissions power) under the NZE50 Scenario.

We are seeking and will continue to seek to change the mix of energy products we sell to our customers as their needs for energy change. Emissions resulting from customer use of our energy products make up a large proportion of Shell's reported emissions. We believe we can make the greatest contribution to the energy transition by helping to enable our customers to switch to low-carbon energy products and services. We are working to:

- develop low- and zero-carbon alternatives to traditional fuel, including biofuels, and other low- and zero-carbon gases;
- provide more renewable power solutions to customers by growing our portfolio in select markets;
- work with customers across different sectors to help them decarbonise their use of energy, for example by substituting the use of coal with LNG; and
- address any remaining emissions from conventional fuels with solutions such as CCS and high-quality carbon credits.

Energy transition in action - selection of portfolio changes and actions in 2024

Reducing emissions from the products we sell

By the end of 2024, the number of Shell-branded electric vehicle charge points was almost 73,000 compared with 54,000 in 2023. We reached our goal of installing 70,000 public electric vehicle charge points globally by 2025 one year ahead of schedule.

Shell and our non-operated joint venture Raízen (Shell interest 44%) are, together, one of the world's largest blenders and distributors of biofuels. In 2024, Raízen commissioned the second and third of eight world-scale second-generation biofuel plants, which it aims to build in Brazil, and its first biomethane plant to produce RNG made from waste in sugar ethanol production.

In March 2024, Hollandse Kust Noord, our offshore wind park in the Netherlands (Shell interest 79.9%), achieved commercial operations.

In March 2024, we started operations at Shell Downstream Bovarius, which is one of two facilities at the Bettencourt Dairies in Wendell, Idaho, USA, where we are converting dairy manure to RNG. Bovarius is expected to produce around 400,000 MMBtu a year of RNG. The second facility, Shell Downstream Friesian, is expected to produce around 350,000 MMBtu a year of RNG and operations are expected to start in 2025.

In September 2024, our Northern Lights joint venture (Shell interest 33.3%) with Equinor and TotalEnergies completed the onshore and offshore facilities for the world's first carbon transport and storage project in Norway. The first shipments are expected in 2025. Northern Lights has the capacity to store around 1.5 million tonnes of CO_2 per year.

In April 2024, we opened our bioLNG liquefaction plant at the Shell Energy and Chemicals Park Rheinland. This can produce 100,000 tonnes of bioLNG per annum, which will help around 5,000 LNG trucks a year reduce their carbon emissions.

In July 2024, we announced that we had paused on-site construction work at the biofuels facility at the Shell Energy and Chemicals Park Rotterdam in the Netherlands to assess the most commercial way forward for the project.

Nature Energy is one of Europe's largest producers of RNG. In 2024, Nature Energy opened its first biogas plant in France. The Sécalia plant is operated in partnership with the Dijon Céréales consortium of 150 farmers. It is France's largest renewable gas plant with annual production of 230 GWh of biogas. Together with its partners, Nature Energy also owns and operates 13 biogas plants in Denmark and one in the Netherlands.

In October 2024, we announced the acquisition of RISEC Holdings, LLC (RISEC), which owns a 609-megawatt (MW) two-unit combined-cycle gas turbine power plant in Rhode Island, USA. RISEC's combined-cycle gas turbine power plant supplies power to the ISO New England power market, where demand is expected to increase due to growing decarbonisation efforts in sectors such as home heating and transport.

Rotterdam-Singapore Green and Digital Shipping Corridor (GDSC) partners conducted a successful pilot for the bunkering of mass-balanced liquefied bio-methane (LBM) at the Port of Rotterdam in October 2024. A total of 100 tonnes of mass-balanced LBM was supplied by Shell to CMA CGM's liquefied natural gas-powered.

In December 2024, a consortium led by Eku Energy and Shell Energy successfully completed the Rangebank Battery Energy Storage System (BESS) in Melbourne's Rangebank Business Park, marking the second-largest battery storage project in Victoria. With a capacity of 200 MW and 400 MWh of storage, the facility can power up to 80,000 homes.

Reducing emissions from our own operations

In January 2024, we announced our investment decision to convert the hydrocracker at our Energy and Chemicals Park Rheinland in Germany into a unit that will produce premium base oils. The hydrocracker at the Wesseling site near Cologne will stop processing crude oil into petrol, jet fuel and diesel in 2025. The planned changes are expected to reduce Shell's Scope 1 and 2 carbon emissions by around 620,000 tonnes a year.

In May 2024, the Petrobras-operated Atapu consortium (Shell interest 16.7%) announced a final investment decision (FID) for the Atapu-2 project. The new unit is expected to feature all-electric capability, aimed at lowering carbon intensity for production processes.

In June 2024, we took an FID for Polaris, a carbon capture project at the Shell Energy and Chemicals Park Scotford in Alberta, Canada. Polaris is designed to capture approximately 650,000 tonnes of CO_2 annually from the Shell-owned Scotford refinery and chemicals complex.

We also took an FID to proceed with the Atlas Carbon Storage Hub which will store CO_2 captured by the Polaris project. Polaris and Atlas will build on the success of the Quest carbon capture and storage (CCS) facility at Scotford, which has safely captured and stored more than nine million tonnes of CO_2 since 2015 that would otherwise have been released into the atmosphere.

In July 2024, we signed an agreement to invest in the Abu Dhabi National Oil Company's (ADNOC) Ruwais LNG project through a 10% participating interest. The deal is still subject to completion. The Ruwais LNG facility is set to have an electric-powered liquefaction system and will utilise access to a renewable power supply. This design supports lower operational emissions compared to traditional gas-powered LNG facilities.

In July 2024, we took the final investment decision to build REFHYNE II, a 100 MW electrolyser to produce renewable hydrogen, in Germany. We plan to use this hydrogen to partially decarbonise the Shell Energy and Chemicals Park Rheinland.

In October 2024, Shell NBS formed a joint venture with New Forests Company: Tausi Forests Limited. Operating in Tanzania and Uganda, Tausi is dedicated to establishing certified commercial plantations and to initiating afforestation projects, creating reforestation and restoration carbon credits, and enhancing climate resilience, community well-being, and biodiversity in the areas that it operates in.

Our climate-related metrics and targets

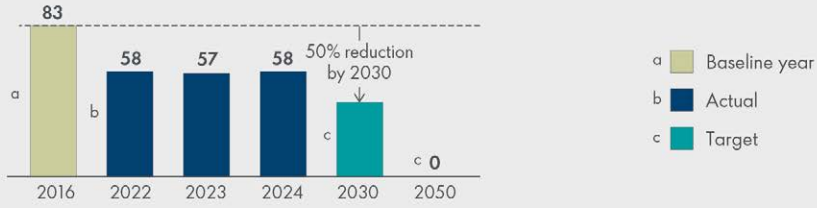
This section describes our performance against our climate-related targets and ambition, including those reflected in the remuneration of senior management and employees.

Carbon performance, targets and ambition at a glance

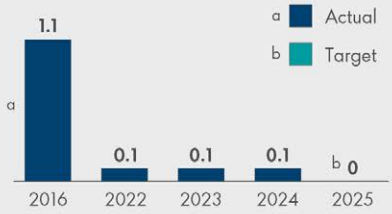
0% **Net-zero emissions by 2050** (Scope 1, 2 and 3)

Emissions from our own operations (Scope 1 and 2, operational control)

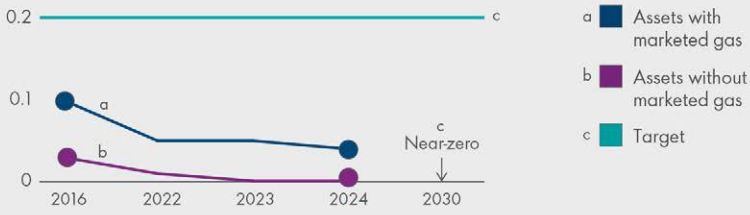
Halve Scope 1 and 2 emissions by 2030, on a net basis
(million tonnes CO_2e)



Eliminate routine flaring by 2025 [A]
(million tonnes of hydrocarbon flared)

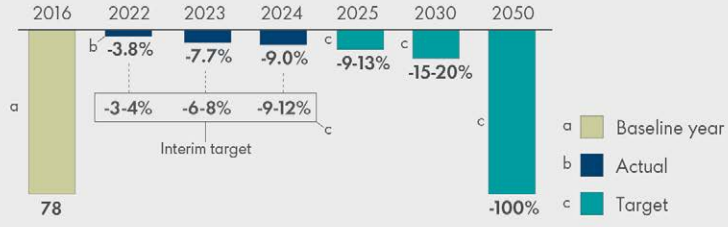


Maintain methane emissions intensity below 0.2% and achieve near-zero methane emissions by 2030 [B]
(percentage)

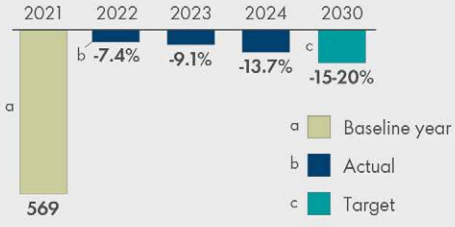


Emissions from the products we sell (Scope 3, equity boundary)

Reduce net carbon intensity (NCI) [C]
(gCO_2e/MJ)



Reduce customer emissions from the use of our oil products [D]
(million tonnes CO_2e)



[A] This target was subject to the completion of the sale of The Shell Petroleum Development Company of Nigeria Limited (SPDC). With effect from January 1, 2025, SPDC ceased routine flaring. Our target is therefore met. As detailed elsewhere in this report, on March 13, 2025, Shell completed the sale of SPDC to Renaissance.

[B] On an intensity basis. Methane intensity is measured separately for oil and gas assets with marketed gas (gas, LNG and GTL available for sale) and assets without marketed gas (oil and gas assets where gas is reinjected).

[C] Average intensity, weighted by sales volume, of the energy products we sell, on an equity boundary, net of carbon credits. Estimated total GHG emissions included in NCI reflect well-to-wheel emissions associated with energy products sold by Shell. This includes the well-to-tank emissions associated with the manufacturing of energy products by others that are sold by Shell. In 2024, we revised the 2016 baseline NCI values and other historical NCI values. As a result, the percentage reduction achieved in 2023 was revised from 6.3% to 7.7%. (See "NCI baseline and restatement policy" on page 98).

[D] In March 2024, we set an ambition to reduce absolute emissions related to the use of our oil products by 15–20% by 2030, compared with 2021 (Scope 3 Category 11). Customer emissions from the use of our oil products (Scope 3, Category 11) were 517 million tonnes carbon dioxide equivalent (CO_2e) in 2023 and 569 million tonnes CO_2e in 2021.

Metrics used by Shell to assess climate-related risks and opportunities in line with our strategy and risk management process T

This section sets out the key metrics we use to track progress against our energy transition targets and ambition. These metrics are as follows.

- Metrics related to our own operations:
  - absolute Scope 1 and 2 emissions under operational control, with a 2016 baseline; and
  - routine flaring and methane emissions intensity under our operational control.
- Metrics related to emissions from the products we sell:
  - the NCI of the energy products we sell (equity basis), with a 2016 baseline; and
  - customer emissions from the use of our oil products (Scope 3, Category 11, equity basis), with a 2021 baseline.
- Performance indicators for the energy transition performance condition reflected in the remuneration of senior management and employees as set out in "Linking Shell's emissions targets to remuneration" on page 104.
- Additional metrics associated with the resilience of Shell's strategy to climate-related risks and opportunities, including information on capital allocation between our business segments and the sensitivity of our assets to carbon pricing, discount rate and commodity price assumptions as set out in "Resilience of Shell's strategy to different climate-related scenarios" on page 86.
- Metrics and targets in respect of climate-related environmental risks as set out in "Metrics and targets in respect of climate-related environmental risks" page 101.

Scope 1, 2 and 3 emissions and related risks T

In assessing progress against our target to be a net-zero emissions energy business by 2050, we report our performance against Scope 1, 2 and 3 emissions.

See "Climate-related risks and opportunities identified by Shell over the short, medium and long term" on pages 80-84.

Scope 1 and 2 emissions

In 2024, total combined Scope 1 and 2 GHG emissions (net) from assets and activities under Shell operational control were 58 million tonnes of carbon dioxide equivalent (CO_2e), reflecting a 30% reduction compared with 2016, the base year for our target to halve these emissions by 2030.

Total combined Scope 1 and 2 GHG emissions (net) were 2% higher compared with 2023 due to higher utilisation and production, offset by reductions from abatement projects.

Drivers of Scope 1 and 2 emissions

Gross direct GHG emissions (Scope 1, operational control boundary) were stable in 2024 compared with 2023, at 50 million tonnes of CO_2e, as the effect of higher Chemicals utilisation and Integrated Gas production was offset by reductions from GHG abatement projects and reduction activities.

Gross indirect GHG emissions (Scope 2, operational control boundary, using a market-based method) increased from 7 million tonnes of CO_2e in 2023 to 8 million tonnes CO_2e in 2024. This increase was driven by higher electricity consumption and reduced purchases of renewable electricity in Australia following regulatory changes for purchasing and reporting renewable energy. We present examples of our energy efficiency projects on page 108.

In 2024, carbon credits were used for compliance with the requirements of the Australian Safeguard Mechanism, resulting in an offset of 0.1 million tonnes CO_2e related to Scope 1 emissions under our operational control.

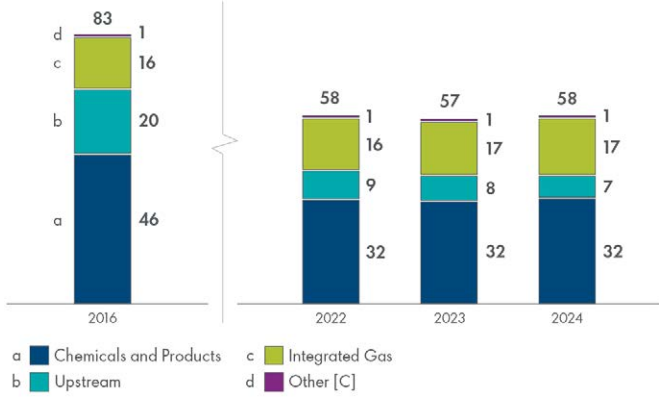
Scope 1 and 2 emissions [D, E]

				million tonnes of CO_2e
(operational control boundary)	2024	2023	2022	2016
Scope 1 emissions (gross) [A]	50	50	51	72
Scope 2 emissions (gross) [B]	8	7	7	11
Carbon credits [C]	0.1	–	–	–
Total Scope 1 and 2 emissions (net) [F]	58	57	58	83

[A] Total direct GHG emissions from assets and activities under our operational control. It includes emissions from production of energy and non-energy products. Scope 1 emissions are reported gross without the inclusion of carbon credits.
[B] Total indirect GHG emissions from imported energy from assets and activities under our operational control using a market-based method. It includes imported energy used for production of energy and non-energy products. Scope 2 emissions are reported gross without the inclusion of carbon credits.
[C] In 2024, carbon credits were used for compliance with the requirements of the Australian Safeguard Mechanism, resulting in an offset of 0.1 million tonnes CO_2e related to Scope 1 emissions under our operational control.
[D] Oil and gas industry guidelines from Ipieca indicate that several sources of uncertainty can contribute to the overall uncertainty in Scope 1 and 2 emissions inventories.
[E] Figures disclosed are rounded. Rounding differences can occur between the total combined Scope 1 and 2 absolute GHG emissions disclosed in this Report and the sum of components individually rounded to the nearest million tonnes.
[F] We measure total combined Scope 1 and 2 GHG emissions compared with a 2016 baseline, on a net basis. The 2016 baseline may be recalculated if an acquisition or a divestment has an impact of more than 10% on total Scope 1 and 2 emissions. There was no such event in 2024.

Scope 1 and 2 emissions (net) by business [A, B]

million tonnes carbon dioxide equivalent (CO_2e)

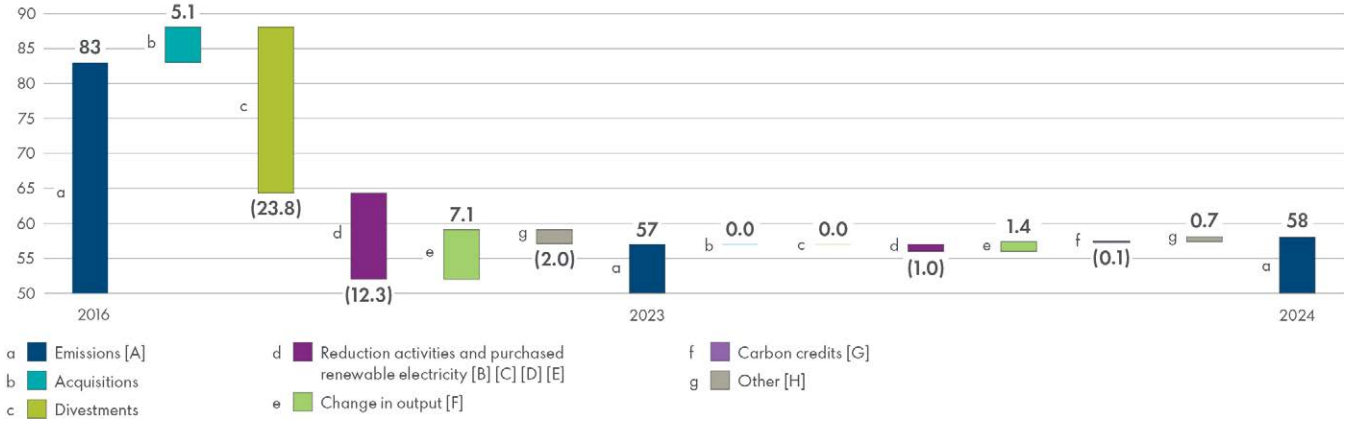


[A] Total direct (Scope 1) and energy indirect (Scope 2) GHG emissions from assets and activities under the operational control boundary, net of carbon credits. It includes emissions from production of energy and non-energy products. For Scope 2, we used a market-based method.
[B] Figures disclosed are rounded. The split between Scope 1 and 2 may not add up to the total due to rounding.
[C] Renewables and Energy Solutions, Marketing, P&T and Real Estate.

Drivers of absolute Scope 1 and 2 emissions change

Scope 1 and Scope 2 GHG emissions (net): Changes from 2016 to 2023 and from 2023 to 2024

million tonnes carbon dioxide equivalent (CO_2e)



[A] Total Scope 1 and Scope 2 emissions, rounded to the nearest million tonnes. Scope 2 emissions were calculated using a market-based method.
[B] In addition to reductions from GHG abatement and energy efficiency projects, this category includes reductions from permanent shutdowns and conversion of existing assets.
[C] Excludes 7.8 million tonnes of CO_2 captured and sequestered by the Shell-operated Quest CCS facility in Canada in 2016-2023.
[D] Excludes 1.0 million tonnes of CO_2 captured and sequestered by the Shell-operated Quest CCS facility in Canada in 2024.
[E] Of the 1,028 thousand tonnes of reduction activities and purchased renewable electricity in 2024, around 20 thousand tonnes related to purchased renewable electricity.
[F] Change in output relates to changes in production levels, including those resulting from shutdowns and turnarounds as well as production from new facilities.
[G] In 2024, carbon credits were used for compliance with the requirements of the Australian Safeguard Mechanism, resulting in an offset of 0.1 million tonnes CO_2e related to Scope 1 emissions under our operational control.
[H] In 2024, category Other represents the regulatory change for purchasing and reporting renewable energy in Australia and inclusion of emissions from Shell-owned, but third-party operated Mobility retail stations.

Routine flaring

Routine flaring of associated gas occurs during normal oil production where it is not possible to transport the gas to market, use it on-site or reinject it.

Routine flaring from The Shell Petroleum Development Company of Nigeria Limited (SPDC) was 0.1 million in 2024, comparable with 2023.

With effect from January 1, 2025, SPDC has ceased routine flaring of associated gas, with the completion of essential gas capture projects, such as the Forcados Yokri Gas Project, and the shut-in of remaining facilities from which gas cannot be transported to market. We have therefore met our target to eliminate routine flaring from our upstream-operated assets by 2025 as of this date.

Total routine and non-routine flaring at our Integrated Gas and Upstream facilities was 0.6 million tonnes in 2024, compared with 0.7 million tonnes in 2023. Around 50% of total flaring in 2024 occurred in assets operated by SPDC and SNEPCo.

On March 13, 2025, Shell completed the sale of SPDC to Renaissance, a consortium of five companies. SPDC will continue to operate the SPDC joint venture (SPDC JV [A]) on behalf of all the joint-venture partners, who together will continue to make decisions relating to work programmes for the SPDC JV's assets and infrastructure.

[A] The SPDC JV comprises SPDC (30%), the government-owned NNPC (55%), Total Exploration and Production Nigeria Ltd (10%) and Nigeria Agip Oil Company Ltd (5%).

Total routine flaring [A]

million tonnes

(operational control boundary)	2024	2023	2022	2016
Total hydrocarbons flared in routine flaring	0.1	0.1	0.1	1.1

[A] Routine flaring of associated gas occurs during normal oil production where it is not possible to transport the gas to market, use it on site or reinject it.

Methane intensity

In 2024, we continued to deliver methane emissions intensities well below our 0.2% target, with overall methane emissions intensity at 0.04% for Shell-operated oil and gas assets with marketed gas and 0.001% for Shell-operated oil and gas assets without marketed gas.

Total methane emissions from assets under Shell operational control (including Integrated Gas and Upstream, and Downstream, Renewables and Energy Solutions assets) were 33 thousand tonnes in 2024 compared with 41 thousand tonnes in 2023 due to lower venting (e.g. in 2023 venting occurred due to the maintenance of our Prelude floating LNG asset and operational issues in assets operated by Sarawak Shell Berhad).

We believe our methane emissions are quantified according to industry best practice. Methane emissions include those from unintentional leaks, venting and incomplete combustion, for example in flares and turbines.

Methane emissions intensity

%

(operational control boundary)	2024	2023	2022	2016
Methane emissions intensity - assets with marketed gas [A]	0.04%	0.05%	0.05%	0.10%
Methane emissions intensity - assets without marketed gas [B]	0.001%	0.001%	0.01%	0.03%

[A] Methane emissions intensity from all Shell-operated oil and gas assets that market their gas (including LNG and GTL assets), defined as the total volume of methane emissions in normal cubic metres (Nm^3) per total volume of gas available for sale in Nm^3.
[B] Methane emissions intensity from all Shell-operated oil and gas assets that do not market their gas (such as where gas is reinjected), defined as the total mass of methane emissions in tonnes per total mass of oil and condensate available for sale in tonnes.

Scope 3 and NCI

NCI performance

In 2024, Shell's NCI was 71 grams of carbon dioxide equivalent per megajoule of energy (gCO_2e/MJ), a 1.4% decrease from the previous year and a 9.0% reduction compared with the 2016 baseline. We therefore met our interim target to reduce our NCI by 9-12% in 2024. The decrease in our NCI in 2024 was mainly achieved through a reduction in sales of oil products, continued growth in power sales and a reduction in the average intensity of the oil products we sell.

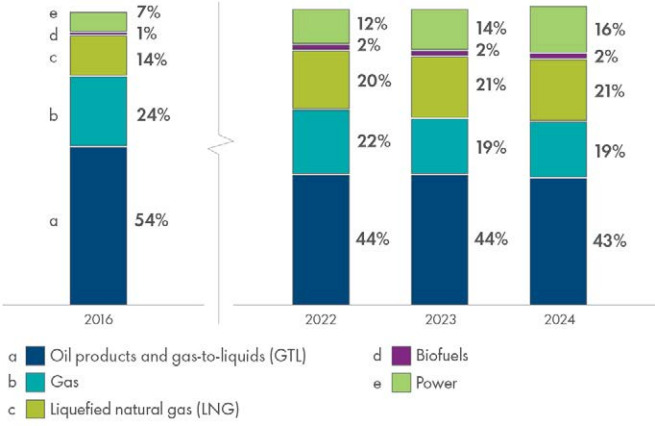
NCI performance

(equity boundary)		2024	2023	2022	2016
NCI [A] [B] [C]	gCO_2e/MJ	71	72	75	78
Estimated total energy delivered by Shell [D] [E]	trillion (10^12) MJ	15.85	16.13	16.34	20.80
Estimated total GHG emissions included in NCI (net) [F] [G]	million tonnes CO_2e	1,122	1,158	1,220	1,615
Carbon credits	million tonnes CO_2e	16.4	20.0	4.1	0
Estimated total GHG emissions (gross) [G] [H]	million tonnes CO_2e	1,139	1,178	1,225	1,615

[A] Rounded to the nearest gram of carbon dioxide equivalent per megajoule.
[B] We measure our NCI performance compared with a 2016 baseline. The NCI targets and baseline are not adjusted for the impact of acquisitions and divestments, which could have a material impact on meeting the NCI targets.
[C] In 2024, we revised the 2016 baseline NCI values from 79gCO_2e/MJ (g) to 78g. The 2022 and 2023 values were revised from 76g to 75g and from 74g to 72g respectively. (See "NCI baseline and restatement policy" on page 98.
[D] Volume of energy products sold, aggregated on an energy basis, with power represented as fossil equivalent. Energy products consist of energy oil products (gasoline, diesel, kerosene, fuel oil and LPG), GTL, biofuels, liquefied natural gas, pipeline gas and power.
[E] In 2024, consistent with revisions of NCI values, we revised the estimated total energy delivered by Shell from 16.07 trillion (10^12) MJ (t MJ) to 16.13t MJ for 2023, from 16.29t MJ to 16.34t MJ for 2022 and from 20.93t MJ to 20.80t MJ for 2016. (See "NCI baseline and restatement policy" on page 98).
[F] In 2024, consistent with revisions of NCI values, we revised the estimated total GHG emissions included in NCI (net) from 1,185 million tonnes CO_2e (mt) to 1,158mt for 2023, from 1,240mt to 1,220mt for 2022 and from 1,645 to 1,615mt for 2016. (See "NCI baseline and restatement policy" on page 98).
[G] Estimated total GHG emissions included in NCI (net) are the product of the NCI and the total energy delivered by Shell. Adding emissions offset using carbon credits gives the Estimated total GHG emissions included in NCI (gross).
[H] In 2024, consistent with revisions of NCI values, we revised the estimated total GHG emissions (gross) from 1,205 million tonnes CO_2e (mt) to 1,178mt for 2023, from 1,244mt to 1,225mt for 2022 and from 1,645mt to 1,615mt for 2016. (See "NCI baseline and restatement policy" on page 98).

As part of our strategy, we aim to increase the share of low-carbon products in our energy product sales, which is the biggest driver for reducing our NCI.

Share of estimated total energy delivered per energy product type [A, B, C]



[A] Percentage of delivered energy may not add up to 100% because of rounding.
[B] Total volume of energy products sold, aggregated on an energy basis (lower heating value) with power represented as fossil equivalents.
[C] In 2024, consistent with revisions of NCI values, the share of energy delivered through sales of biofuels was revised from 1% to 2% in 2023 and 2022. The share delivered through gas sales was revised from 20% to 19% for 2023. See "NCI baseline and restatement policy" on page 98.

Our ability to change the emissions intensity of each energy product varies, depending on the product type:

- Hydrocarbon fuels - emissions from end use by customers are by far the biggest contributors to the carbon intensity of the product. As a result, the emissions intensity of hydrocarbon fuels is expected to stay relatively unchanged over time. This is why we are focused on helping our customers decarbonise.
- Biofuels - can vary significantly in intensity depending on the feedstock and production process used.
- Power - the emissions intensity of power can be highly variable depending on how it has been generated. The proportion of our renewable power sales and the generation mix in countries where we sell power to the market both affect Shell's overall power mix and its resulting emissions intensity.

We sell more energy products than we produce ourselves. Therefore, when we calculate our emissions, we include emissions from energy products that we produce ourselves and from the products that we purchase from others for resale. This is reflected in the scope for calculation of our emissions shown in the chart on page 99.

Life-cycle carbon intensities for energy product categories included in the NCI calculation are summarised in the table below:

Carbon intensity of energy products [A]

	gCO_2e/MJ			
	2024	2023	2022	2016
Oil products and gas-to-liquids [B]	86	87	87	87
Gas [C]	66	66	66	66
Liquefied natural gas (LNG) [D]	70	70	71	73
Biofuels [E]	34	34	37	38
Power [F, G]	48	49	57	60

[A] In 2024, consistent with NCI value revisions, we revised the intensities of individual products in this table. See "NCI baseline and restatement policy" on page 98.
[B] Revised from 91gCO_2e/MJ (g) to 87g for 2023, from 91g to 87g for 2022 and from 89g to 87g for 2016.
[C] Revised from 65gCO_2e/MJ(g) to 66g for 2022 and from 67g to 66g for 2016.
[D] Revised from 70gCO_2e/MJ(g) to 71g for 2022 and from 71g to 73g for 2016.
[E] Revised from 39gCO_2e/MJ(g) to 34g for 2023, from 39g to 37g for 2022 and from 40g to 38g for 2016.
[F] Revised from 58gCO_2e/MJ(g) to 57g for 2022 and from 59g to 60g for 2016.
[G] Emissions included in the carbon intensity of power have been calculated using a market-based method.

Drivers of absolute Scope 3 emissions change in 2024

Scope 3 emissions associated with our energy product sales were 1,084 million tonnes CO_2e, compared with 1,123 million tonnes CO_2e in 2023, driven by lower sales of oil products.

Emissions from Scope 3 categories 1, 3, 9 and 11, related to the sale of energy products, are the most significant categories for Shell. Emissions from the use of our energy products (Category 11) form the largest component of our indirect Scope 3 emissions. As we sell more products than we produce or refine ourselves, the emissions associated with the products we purchase from third parties are also material, as reported under Category 1 for hydrocarbon products such as oil products, gas and LNG, and Category 3 for power. Although quantitatively less significant, emissions reported under Category 9 are significant to Shell for consistency with the boundaries of our net carbon intensity measure. Other Scope 3 categories have been assessed to be quantitatively and qualitatively insignificant.

Scope 3 emissions by category [A], [B], [C]

million tonnes CO_2e

(equity boundary)	2024	2023	2022	2016
Scope 3, Category 1: purchased goods and services [D]	119	130	136	179
Scope 3, Category 3: fuel and energy-related activities	117	112	115	89
Scope 3, Category 9: downstream transport and distribution [E, F]	3	3	3	–
Scope 3, Category 11: use of sold products [G]	845	878	909	1,252
	1,084	1,123	1,163	1,520

[A] Categorised using the definitions from the GHG Protocol's Corporate Value Chain (Scope 3) Standard.
[B] Ipieca notes that due to the diversity of Scope 3 emissions, sources and the fact that these emissions occur outside the company's boundaries, the emissions estimates may be less accurate or may have a high uncertainty.
[C] In 2024, the total of Scope 3 Categories 1,3,9 and 11 was revised for 2023 (from 1,147 million tonnes CO_2e to 1,123 million tonnes CO_2e), for 2022 (from 1,174 million tonnes CO_2e to 1,163 million tonnes CO_2e) and for 2016 (from 1,545 million tonnes CO_2e to 1,520 million tonnes CO_2e). See "Basis of preparation – absolute Scope 1, 2 and 3 emissions" on page 100-101.
[D] In 2024, we revised Scope 3 Category 1 for 2023 (from 154 million tonnes CO_2e to 130 million tonnes CO_2e), for 2022 (from 144 million tonnes CO_2e to 136 million tonnes CO_2e) and for 2016 (from 172 million tonnes CO_2 to 179 million tonnes CO_2e). See "Basis of preparation – absolute Scope 1, 2 and 3 emissions" on page 100-101.
[E] In 2024, we revised Scope 3 Category 9 for 2022 (from 5 million tonnes CO_2e to 3 million tonnes CO_2e). See "Basis of preparation – absolute Scope 1, 2 and 3 emissions" on page 100-101.
[F] An estimate of Scope 3, Category 9 could not performed for 2016.
[G] In 2024, we revised Scope 3 Category 11 for 2022 (from 910 million tonnes CO_2e to 909 million tonnes CO_2e) and for 2016 (from 1,284 million tonnes CO_2e to 1,252 million tonnes CO_2e). See "Basis of preparation – absolute Scope 1, 2 and 3 emissions" on page 100-101.

Drivers of absolute Scope 3 Category 11 oil products emissions change in 2024

In 2024, Scope 3 Category 11 emissions from the use of our oil products were 491 million tonnes CO_2e, a reduction of 5.0% compared with 2023. This reduction was driven by lower sales in our Mobility and Products businesses.

At the end of 2024, we achieved a reduction of 13.7% compared with 2021, and are progressing towards our ambition to reduce customer emissions from the use of our oil products (Scope 3, Category 11) by 15-20% by 2030 compared with 2021.

Customer emissions from the use of our oil products

million tonnes CO_2e

(equity boundary)	2024	2023	2022	2021
Scope 3, Category 11: use of sold products (oil products)	491	517	527	569

Carbon credits

In 2024, Shell accounted for the retirement of 17.3 million carbon credits, of which 16.4 million were related to our NCI (including 2.4 million linked to the sale of energy products).

Of our total carbon credit retirements for 2024, 74% were certified by the Verra, Verified Carbon Standard Program (VCS), 10% by the ACR (formerly American Carbon registry), 15% by Gold Standard, and 1% via Australian Carbon Credit Units.

We carefully source and screen the credits we purchase and retire from the market.

Carbon credit retirements [A]

Million carbon credits [B]

(equity boundary)	2024	2023	2022	2016
Included in Shell's NCI metric [C]	16.4	20.0	4.1	0.0
Excluded from Shell's NCI metric [D]	0.9	1.8	1.7	0.0
	17.3	21.8	5.8	0.0

[A] Represent credits related to transactions occurring in the financial year irrespective of the actual retirement date. Retirements from registries may take place after the year-end. Excludes carbon credits transactions executed by Shell on behalf of/with third parties without a link to Shell activities.
[B] One carbon credit represents the avoidance or removal of one metric tonne of CO_2 equivalent.
[C] Carbon credits associated with the sale of energy products and carbon credits used to compensate for Shell Group emissions including operational emissions and emissions associated with the use of sold products.
[D] Carbon credits retired in relation to sales of non-energy products and Shell's internal activity like corporate travel.

Basis of preparation

NCI

Shell's NCI is the average intensity, weighted by sales volumes, of the energy products sold by Shell. It is tracked, measured and reported using Shell's Net Carbon Footprint (NCF) methodology.

NCI objective

Shell's NCI provides an annual measure of the life-cycle emissions intensity of the portfolio of energy products sold. The intended use of the NCI metric is to track progress in reducing the overall carbon intensity of the energy products sold by Shell. NCI measures emissions associated with each unit of energy we sell, compared with a 2016 baseline. It reflects changes in sales of oil and gas products, and changes in sales of low- and zero-carbon products such as biofuels and renewable electricity.

NCI definition

The NCI is calculated on a life-cycle basis and as such includes GHG emissions – on an equity basis – from several sources, including:

- direct GHG emissions from Shell operations;
- indirect GHG emissions from the generation of energy consumed by Shell; and
- indirect GHG emissions from the use of the products we sell.

The NCI is not a mathematical derivation of total emissions divided by total energy, nor is it an inventory of absolute emissions. It is a weighted average of the life-cycle CO_2 intensities of different energy products, normalising them to the same point relative to their final enduse. The use of a consistent functional unit, grams of carbon dioxide equivalent per megajoule (gCO_2e/MJ), allows like-for-like comparisons and the aggregation of individual life-cycle intensities for a range of energy products including renewable power.

Emissions from other parts of the product life cycle are also included, such as those from the extraction, transport and processing of crude oil, gas or other feedstocks and the distribution of products to our customers. Also included are emissions from parts of this life cycle not owned by Shell, such as the extraction of oil and gas processed by Shell but not produced by Shell; or from the production of oil products and electricity marketed by Shell that have not been processed or generated at a Shell facility.

We also take into account emissions offset through the use of carbon credits and mitigation actions such as the use of CCS technology.

See "Scope of NCI" on page 99 for details of the supply chains and steps in the product life cycles that are included in the Net Carbon Footprint methodology.

The following GHG emissions are not included in the NCI:

- emissions from production, processing, use and end-of-life treatment of non-energy products, such as chemicals and lubricants;
- emissions from third-party processing of sold intermediate products, such as the manufacture of plastics from feedstocks sold by Shell;
- emissions associated with the construction and decommissioning of production and manufacturing facilities;
- emissions associated with the production of fuels purchased to generate energy on-site at a Shell facility;
- other indirect emissions from waste generated in operations, business travel, employee commuting, transmission and distribution losses associated with imported electricity, franchises and investments; and
- emissions from capital goods, defined by the GHG Protocol as including fixed assets or property, plant and equipment, and other goods and services not related to purchased energy feedstocks sourced from third parties or energy products manufactured by third parties and sold by Shell.

The NCI calculation uses Shell's energy product sales volumes data, as disclosed in this Report. This excludes certain sales volumes such as:

- certain contracts held for trading purposes reported net rather than gross. Business-specific methodologies to net volumes have been applied in oil products and pipeline gas and power. Paper trades that do not result in physical product delivery are excluded; and
- retail sales volumes from markets where Shell operates under trademark licensing agreements.

The energy products included in the NCI calculation are oil products, (gasoline, diesel, kerosene, fuel oil and LPG), GTL, biofuels, LNG, pipeline gas and power.

We review the NCI methodology annually to ensure it reflects changing energy products, relevant data inputs and simplification opportunities. See our Net Carbon Footprint (NCF) methodology documentation on shell.com for further information.

NCI baseline and restatement policy

We measure our NCI performance compared with a 2016 baseline. The NCI targets and baseline are not adjusted for the impact of acquisitions and divestments, which could have a material impact on meeting the NCI targets. The 2016 baseline may be recalculated as a result of changes in estimates with a cumulative impact of 2% or more on the NCI value in any historically disclosed year.

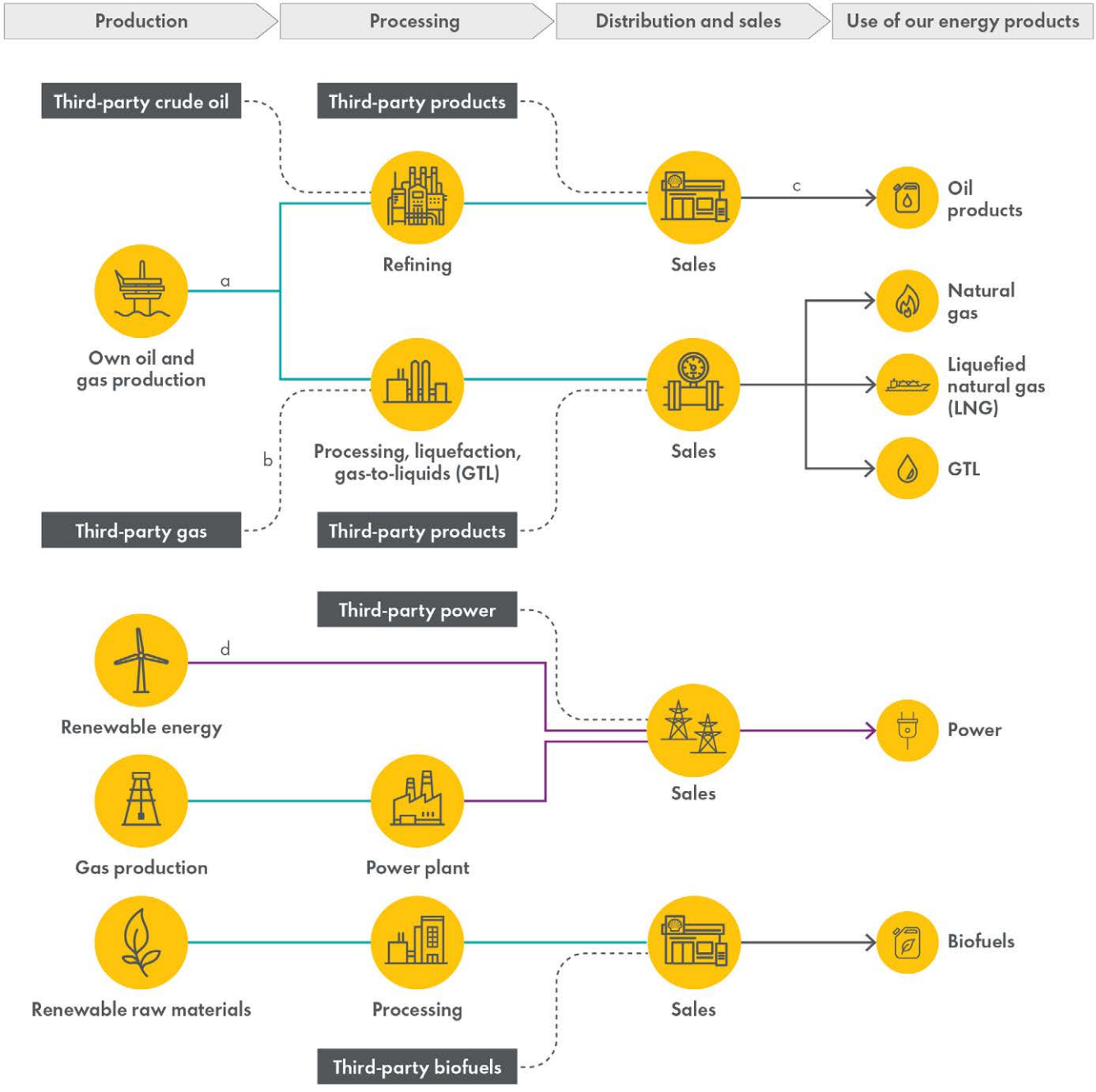
In 2024, the 2% cumulative restatement threshold was met, triggered by changes in external data sources for the third-party upstream and refining intensities used in our calculation of life-cycle product intensities.

Accordingly NCI values were revised for the following years:

- 2016: from 79g to 78gCO_2e/MJ (Baseline)
- 2017: from 79g to 78gCO_2e/MJ
- 2018: from 79g to 78gCO_2e/MJ
- 2019: from 78g to 77gCO_2e/MJ
- 2020: from 75g to 74gCO_2e/MJ
- 2021: from 77g to 76gCO_2e/MJ
- 2022: from 76g to 75gCO_2e/MJ
- 2023: from 74g to 72gCO_2e/MJ

These changes did not impact the NCI performance outcomes compared with interim reduction targets in 2022 and 2023 or preceding years. Compared with the revised 2016 baseline, the percentage reduction achieved in 2022 remains 3.8%, within the target of 3-4% for that year. The percentage reduction achieved in 2023 was revised from 6.3% to 7.7%, still within the target of 6–8% for that year.

Scope of NCI


Production
Processing
Distribution and sales
Use of our energy products
Third-party crude oil
Third-party products
Refining
Sales
c
Oil products
a
Own oil and gas production
Natural gas
Liquefied natural gas (LNG)
GTL
Processing, liquefaction, gas-to-liquids (GTL)
Sales
b
Third-party gas
Third-party products
Third-party power
d
Renewable energy
Power
Sales
Gas production
Power plant
Renewable raw materials
Processing
Sales
Biofuels
Third-party biofuels
Scope includes Shell's CO_2 sinks such as carbon capture and storage (CCS) and nature-based solutions (NBS)
a Emissions from bringing own products to market
b Emissions from bringing third-party products to market
c Emissions from use of sold products
d Power distribution

Basis of preparation – absolute Scope 1, 2 and 3 emissions

We follow the GHG Protocol's Corporate Accounting and Reporting Standard, which defines three scopes of GHG emissions:

- Scope 1: direct GHG emissions from sources under Shell's operational control.
- Scope 2: indirect GHG emissions from the generation of purchased energy consumed by Shell assets under operational control.
- Scope 3: other indirect GHG emissions, including emissions associated with the use of energy products sold by Shell.

GHG emissions comprise CO_2, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, sulphur hexafluoride and nitrogen trifluoride, with CO_2 and methane being the most significant contributors.

Scope 1 and 2 emissions

Our GHG inventory is prepared in line with the requirements outlined in the ISO 14064-1:2018 Specification with Guidance at the Organizational Level for Quantification and Reporting of Greenhouse Gas Emissions and Removals and the GHG Protocol's Corporate Accounting and Reporting Standard.

In line with external standards, we aggregate GHG emissions into tonnes of CO_2 equivalent by applying global warming potential (GWP) factors to non-CO_2 GHGs. With effect from 2023, these factors are taken from the IPCC's Fifth Assessment Report (AR5) over a 100-year time period, as required by the UK Government GHG Conversion Factors for Company Reporting. GHG emissions are aggregated and consolidated from emission source. All operated assets are included in our GHG inventory.

Scope 1 emissions

All significant sources were included in our Scope 1 inventory. Sources included comprise:

- combustion of carbon-containing fuels in stationary equipment (e.g. boilers and gas turbines) for energy generation;
- combustion of carbon-containing fuels in mobile equipment (e.g. trucks, vessels and mobile rigs);
- flares;
- venting and emissions from industrial processes (e.g. hydrogen plants and catalytic cracking units); and
- fugitive emissions, including piping and equipment leaks and non-routine events.

Our Scope 1 emissions follow the GHG Protocol guidance. As a result, the following are not included in our reported Scope 1 emissions:

- CO_2 emissions from biogenic sources such as biofuels or biomass (however methane and nitrous oxide emissions from biogenic sources are included);
- captured CO_2 that was subsequently sold or otherwise transferred to third parties;
- CO_2 captured and sequestered using CCS technologies; and
- carbon credits.

Scope 2 emissions

All significant sources were included in our Scope 2 inventory. Sources included comprise indirect emissions from purchased and consumed electricity, steam and heat. We did not identify any assets with imported cooling or compressed air used for energy purposes.

Scope 2 emissions are calculated using the market- and location-based methods separately as defined by the GHG Protocol Scope 2 Guidance. Scope 2 emissions are presented on a gross basis.

Carbon credits

Our target to halve total Scope 1 and 2 GHG emissions by 2030 has been set on a net basis, including emissions offset by carbon credits.

In 2024, carbon credits were used for compliance with the requirements of the Australian Safeguard Mechanism, resulting in an offset of 0.1 million tonnes CO_2e related to Scope 1 emissions under our operational control.

Baseline and restatement policy

We measure our total combined Scope 1 and 2 GHG emissions performance compared with a 2016 baseline, on a net basis. The 2016 baseline may be recalculated if an acquisition or a divestment has an impact of more than 10% on total Scope 1 and 2 emissions. There was no such event in 2024.

Scope 3 emissions

This Report provides Scope 3 emissions associated with our energy product sales. Emissions were consolidated using the equity boundary approach. Under this approach, we reported the Shell share of emissions from energy products sold, including those sourced from third parties.

Emissions from Scope 3 categories 1, 3, 9 and 11, related to the sale of energy products, are the most significant categories for Shell. Emissions from the use of our energy products (Category 11) form the largest component of our indirect Scope 3 emissions. As we sell more products than we produce or refine ourselves, the emissions associated with the products we purchase from third parties are also material, as reported under Category 1 for hydrocarbon products such as oil products, gas and LNG, and Category 3 for power. Although quantitatively less significant, emissions reported under Category 9 are significant to Shell for consistency with the boundaries of our net carbon intensity measure. Other Scope 3 categories have been assessed to be quantitatively and qualitatively insignificant.

Consistent with our revisions of NCI historical data, we revised Scope 3 emissions under Categories 1, 9 and 11, as applicable, for years 2016, 2022 and 2023 in this Report. There was no change to previously published Scope 3 emissions Category 11 Oil products. See "NCI baseline and restatement policy" on page 98 for details.

The calculation of Scope 3 Category 11 emissions uses energy product sales volumes data, disclosed in this Report where relevant. These sales volumes exclude certain contracts held for trading purposes and reported net rather than gross. Business-specific methodologies have been applied to net volumes of oil products, pipeline gas and power. Paper trades that do not result in physical product delivery are excluded. Retail sales volumes from markets where Shell operates under trademark licensing agreements are not included in the sales volumes reported by Shell and are therefore excluded from Scope 3 emissions.

Scope 3, Category 1: purchased goods and services

This category includes well-to-tank emissions from purchased third-party unfinished and finished energy products excluding electricity (which is reported separately under Category 3: fuel and energy-related activities and not included in Scope 1 or Scope 2). Emissions from purchased non-energy products are not included.

Emissions in this category are estimated using well-to-tank emission factors for crude oil, natural gas, refined oil products (such as gasoline, and diesel), LNG and biofuels. Because the emission factors include transport, we do not estimate emissions from the transport of purchased third-party products separately.

In 2024, Category 1 emissions were revised for the following years:

- 2016: from 172 million tonnes CO_2e to 179 million tonnes CO_2e
- 2020: from 147 million tonnes CO_2e to 150 million tonnes CO_2e
- 2021: from 147 million tonnes CO_2e to 142 million tonnes CO_2e
- 2022: from 144 million tonnes CO_2e to 136 million tonnes CO_2e
- 2023: from 154 million tonnes CO_2e to 130 million tonnes CO_2e

Scope 3, Category 3: fuel and energy-related activities (not included in Scope 1 and 2)
This category includes well-to-wire emissions from purchased third-party electricity sold by Shell, calculated using a market-based method. Emissions are not adjusted for any potential double-counting of sold natural gas that may have been used for generating this electricity.

This category does not include:
- indirect emissions from the generation of imported energy (steam, heat or electricity consumed by our assets). These emissions are reported separately as Scope 2 emissions; and
- well-to-tank emissions from purchased electricity, steam and heat consumed by our assets (i.e. Scope 3 emissions from the extraction, refining and transport of primary fuels before their use in the generation of electricity or steam).

Following the NCI restatement in 2024, Scope 3, Category 3 emissions remained unchanged at:
- For 2016 at 89 million tonnes CO_2e
- For 2020 at 103 million tonnes CO_2e
- For 2021 at 136 million tonnes CO_2e
- For 2022 at 115 million tonnes CO_2e
- For 2023 at 112 million tonnes CO_2e

Scope 3, Category 9: downstream transport and distribution
This category includes estimated emissions from the transport and distribution of energy products produced or refined by Shell. It does not include the emissions associated with transporting third-party products, which are included in Scope 3, Category 1. To avoid double counting across emission scopes, emissions from transport activities which are already included in our Scope 1 and 2 equity emissions are excluded from this category.

In 2024, Category 9 emissions were revised for the year 2022, from 5 million tonnes CO_2e to 3 million tonnes CO_2e. Scope 3 Category 9 emissions remained unchanged for 2021 (at 6 million tonnes CO_2e) and for 2023 (at 3 million tonnes CO_2e). An estimate of Scope 3 Category 9 was not performed for 2016 and 2020.

Scope 3, Category 11: use of sold products
This category includes estimated emissions from the use of sold energy products, such as LNG, GTL, pipeline gas, refined oil products and biofuels. These emissions relate to products manufactured and sold by Shell and third-party products sold by Shell.

This category does not include non-energy products that may have been combusted during use (for example, lubricants).

In 2024, Category 11 emissions were revised for the following years:
- 2016: from 1,284 million tonnes CO_2e to 1,252 million tonnes CO_2e
- 2020: from 1,054 million tonnes CO_2e to 1,028 million tonnes CO_2e
- 2021: from 1,010 million tonnes CO_2e to 963 million tonnes CO_2e
- 2022: from 910 million tonnes CO_2e to 909 million tonnes CO_2e

For 2023, Scope 3 Category 11 remained unchanged at 878 million tonnes CO_2e.

Revisions did not impact Category 11 emissions from the use of oil products.

Biogenic emissions
CO_2 emissions from biogenic sources related to the combustion of sold biofuels are estimated but, in line with GHG Protocol guidance and ISO 14064-1:2018, not included in Scope 3, Category 11. Methane and nitrous oxide emissions from biogenic sources are included in Scope 3, Category 11.

It is assumed that the presence of biogenic emissions associated with other Scope 3 categories is negligible at present.

Customer emissions from the use of our oil products
Our ambition to reduce customer emissions from the use of our oil products is a subset of Scope 3, Category 11 emissions, focusing on the use of refined oil products.

We measure these emission reductions compared with a 2021 baseline. The 2021 baseline may be recalculated in the event of a revision of our sales of oil products, or in the event of other changes to emissions factors subject to a 2% cumulative threshold.

Metrics and targets in respect of climate-related environmental risks T
We monitor physical risk exposures, whether climate-related or not, water use, emissions to air and water, biodiversity, and waste generated from our operations. Where relevant, we may manage our environmental performance by establishing specific targets. See 'Respecting nature' on page 111 for more information.

See "Respecting nature" on pages 109-113.

Targets used by Shell to manage climate-related risks and opportunities and performance against targets T
Our response to the energy transition risk focuses on decarbonising our value chain. This section sets out our climate targets which are focused on reducing our NCI and our absolute emissions, as presented on pages 102-103. Shell's material climate-related risks and opportunities are set out in the "Climate-related risks and opportunities identified by Shell over the short, medium and long term" section on pages 80-84.

We have set intensity targets and absolute targets and an ambition over the short, medium and long term to track our performance over time (as summarised below). The targets are forward-looking targets based on management's current expectations and certain material assumptions and, accordingly, involve risks and uncertainties that could cause actual results, performance or events to differ materially from those expressed or implied herein.

We believe our total net absolute emissions peaked in 2018 at 1.7 gigatonnes of carbon dioxide equivalent ($GtCO_2$).

Our net-zero target includes emissions from our operations, as well as from the end use of all the energy products we sell. We are seeking to reduce emissions from our own operations, including the production of oil and gas. More than 90% of the total emissions we include within our NCI boundary are indirect emissions associated with third-party products and end-use emissions of energy products we sell, so we are also working with our customers to support them in transitioning to low-carbon products and services.

In October 2021, in support of our 2050 net-zero emissions target, we set a target to reduce Scope 1 and 2 absolute emissions from assets and activities under our operational control (including divestments) by 50% by 2030 compared with the 2016 baseline, on a net basis.

We aim to maintain methane emissions intensity for operated oil and gas assets below 0.2% and achieve near-zero methane emissions by 2030. We were aiming to eliminate routine flaring from our upstream-operated assets by 2025 [A] and Shell has delivered this target.

[A] This target was subject to the completion of the sale of The Shell Petroleum Development Company of Nigeria Limited (SPDC). With effect from January 1, 2025, SPDC ceased routine flaring. As detailed elsewhere in this report, on March 13, 2025, Shell completed the sale of SPDC to Renaissance.

In March 2024, we set revised targets to reduce the NCI of the energy products we sell in 2024 by 9-13% by 2025, 15-20% by 2030 and 100% by 2050. In recognition of the uncertainty in the pace of change in the energy transition, we retired our 2035 target of a 45% reduction in NCI.

The NCI metric measures the pace of transition by tracking our progress in reducing the overall carbon intensity of the energy products sold by Shell. NCI measures emissions associated with each unit of energy we sell, compared with a 2016 baseline. It reflects changes in sales of oil and gas products, and changes in sales of low- and zero-carbon products – such as biofuels and renewable electricity. Unlike Scope 1 and 2 emissions, reducing the NCI of the products we sell requires action by both Shell and our customers, with the support of governments and policymakers to create the right conditions for change.

In March 2024, we set an ambition to reduce customer emissions from the use of our oil products (Scope 3, Category 11) by 15-20% by 2030 compared with 2021 [B]. This level of ambition is in line with the EU's climate goals in the transport sector, among the most progressive in the world. Achieving this ambition will mean reducing sales of oil products, such as gasoline and diesel, as we support customers as they move to electric mobility and lower-carbon fuels.

[B] Customer emissions from the use of our oil products (Scope 3, Category 11) were 517 million tonnes carbon dioxide equivalent (CO_2e) in 2023 and 569 million tonnes CO_2e in 2021.

In the short and medium term, we have set climate targets for emissions that we are able to control, namely our Scope 1 and 2 emissions, methane emissions and flaring. We have also set climate targets and an ambition for emissions that are outside our control. These include our ambition to reduce the Scope 3, Category 11 customer emissions from the use of our oil products, and our target to reduce the net carbon intensity of all the energy products we sell.

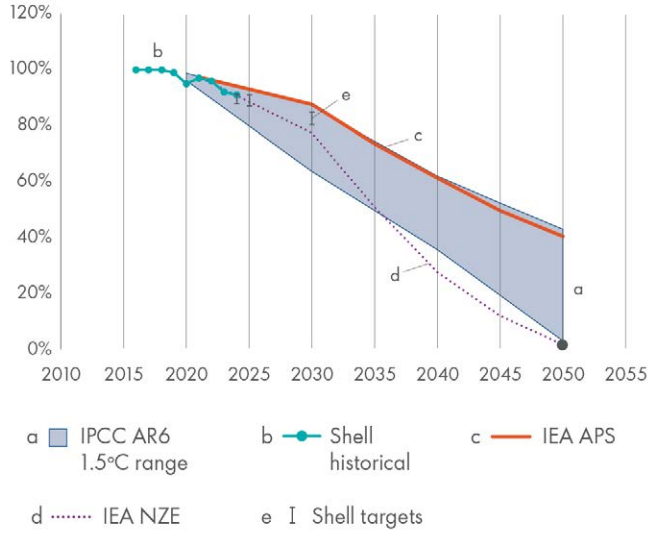
Setting targets for NCI

Shell's target is to become a net-zero emissions energy business by 2050. We also have short-, medium- and long-term targets to reduce the carbon intensity of the energy products we sell, measured using our NCI metric. We believe these targets are aligned with the more ambitious goal of the Paris Agreement, which is to limit the rise in global average temperature this century to 1.5°C above pre-industrial levels. There is no established standard for aligning an energy supplier's decarbonisation targets within the 1.5°C temperature goal of the Paris Agreement. For this reason, we have defined our NCI target using 1.5°C scenarios developed for the IPCC's AR6.

We start with the complete set of 1.5°C scenarios and then exclude scenarios which are too reliant on carbon removals or use of bioenergy before removing outliers. We then calculate an emissions intensity for each scenario which is comparable to our own NCI. Finally, we produce a 1.5°C pathway based on the reductions in emissions intensity over time. We have chosen to use a range instead of any individual scenario to better reflect the uncertainty of the energy transition.

We believe that using this pathway to set our targets demonstrates that they are aligned with the more ambitious 1.5°C goal of the Paris Agreement. This is illustrated in the chart below. We also believe that the pace of change will vary around the world by region and by sector, taking into consideration the time needed for energy users to invest in large-scale equipment and the energy infrastructure changes needed for Shell to deliver more low- and zero-carbon energy.

Shell's Paris-aligned targets



Progress towards our Scope 1 and 2 target

The chart below shows our progress since 2016 in reducing our Scope 1 and 2 emissions and gives an indication of how we expect to achieve our target in 2030. The actions we take to achieve our target will depend on the evolution of our asset portfolio and the continued development of technologies which reduce carbon emissions. We expect that, on a net portfolio basis, reductions predominantly from abatement projects including carbon capture and storage and electrification, may outweigh increases in our Scope 1 and 2 emissions from new investments between 2025 and 2030. Our investments in producing low-carbon energy will increase our Scope 1 and 2 emissions, while reducing the NCI of the products we sell. Subsequent reductions in our emissions are reflected in the mechanisms outlined below and reflect an expected path to meeting our target by 2030.

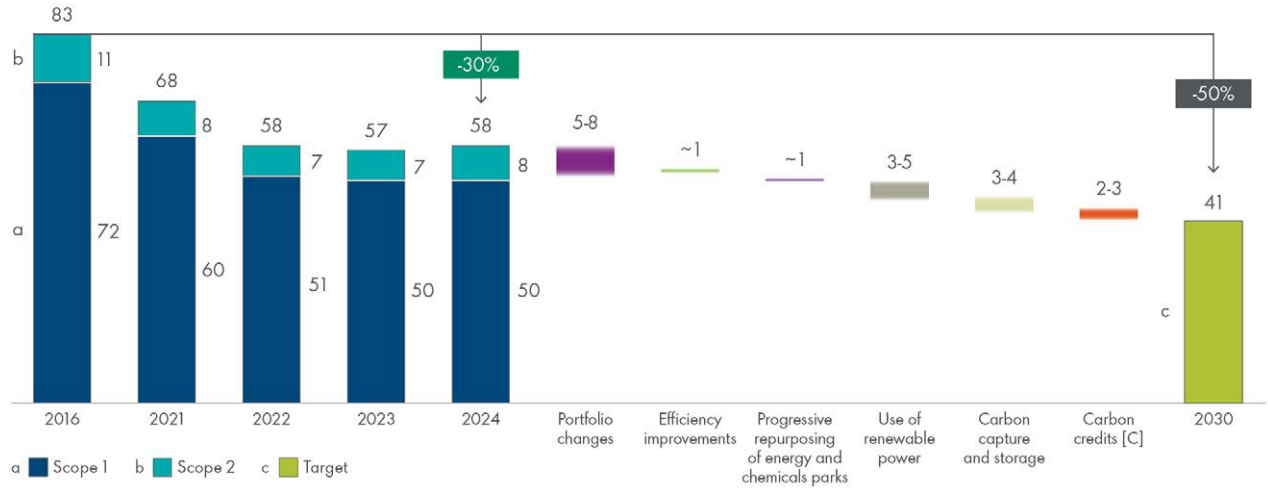
To decarbonise our operations, we are focusing on:

- making portfolio changes such as acquisitions and investments in low-carbon intensity projects, decommissioning plants, divesting assets, while sustaining our oil production with increasingly lower carbon intensity;
- progressing the repurposing of our energy and chemicals parks;
- improving the energy efficiency of our operations;
- using more renewable electricity to power our operations; and
- developing CCS for some of our facilities.

If required, we may choose to use high-quality carbon credits to offset any remaining emissions from our operations, in line with the carbon mitigation hierarchy of avoid, reduce and compensate.

Working to reduce our absolute Scope 1 and 2 emissions

Scope 1 and 2 emissions in million tonnes of CO_2e [A],[B]



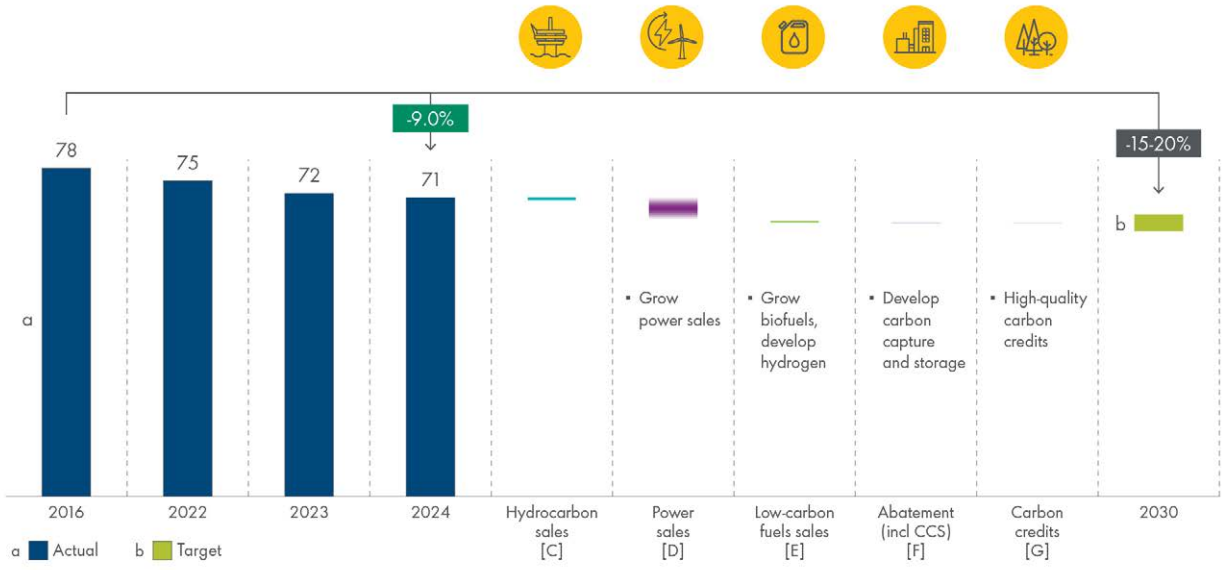
[A] The 2016 baseline may be recalculated if an acquisition or a divestment has an impact of more than 10% on total Scope 1 and 2 emissions. There was no such event in 2024.
[B] Operational control boundary and presented on a net basis (i.e. inclusive of any use of carbon credits).
[C] Including compliance and voluntary carbon credits as required.

Progress towards our NCI target

Unlike Scope 1 and 2 emissions, reducing the NCI of the products we sell requires action by both Shell and our customers, with the support of governments and policymakers to create the right conditions for change. The biggest driver for reducing our NCI is increasing the sales of and demand for low-carbon energy. The chart below illustrates how changes in the volume of products and services we sell could result in NCI reductions towards 2030. The change in our sales of these products and services will also reflect the development and adoption of new technologies and infrastructure, and the adoption of public policies designed to encourage the energy transition.

Working to reduce our NCI

NCI in gCO_2e/MJ [A], [B]



[A] Grams of carbon dioxide equivalent per megajoule.
[B] In 2024, we revised the 2016 baseline NCI value from 79gCO_2e/MJ (g) to 78g. The 2022 and 2023 values were respectively revised from 76g to 75g and from 74g to 72g.
[C] Hydrocarbon sales reflect the effect of lower sales of oil products, and higher sales of natural gas. Emissions associated with gas are lower than those of oil products.
[D] Power sales show the expected growth of our integrated power business and increasing sales of renewable power.
[E] Sales of low-carbon fuels reflect higher sales of biofuels and hydrogen, which are low- and zero-carbon products.
[F] CCS reduces carbon emissions by capturing them at source.
[G] High-quality carbon credits such as nature-based solutions can be used to offset remaining carbon emissions, particularly in hard-to-abate sectors such as aviation and industries including cement and steel.

Linking Shell's emissions targets to remuneration

We have established remuneration structures to support us in reducing our operational emissions and to support customers in reducing their emissions. The majority of employees participate in the annual bonus scheme which is linked to the Group scorecard. From 2025, the Long-Term Incentive Plan (LTIP) is referred to as the Performance Share Awards (PSA) and no further Performance Share Plan (PSP) awards will be made. Our annual bonus scorecard and PSA include "Shell's journey in the energy transition" performance metrics, which are designed to ensure that remuneration is aligned with Shell's Operating Plan and longer-term strategic ambitions.

PSA will be awarded to Executive Directors and around 120 senior executives. Circa 12,000 employees will receive PSA and/or Restricted Share Awards (RSA), which are time-based, based on seniority.

See "Directors' Remuneration Report" on pages 188-190.

Energy transition performance condition and the vesting of the 2022 LTIP and PSP awards

The following performance outcomes for the energy transition performance condition were considered in the vesting assessment of the 2022 LTIP and PSP awards, covering the performance cycle 2022-2024:

2022 LTIP energy transition performance condition: outcome

	Outcome
Net carbon intensity (NCI)	Performance indicator met
Growing the power business	Performance indicator met
Growing new lower-carbon product offerings	Performance indicator partially met
Develop emissions sinks	Performance indicator partially met

In addition to the above, a number of broader indicators of Shell's progress in the energy transition were considered. Overall, it was determined that the energy transition measure (accounting for 20% of the LTIP award and 10% of the PSP award) should vest at 130% of the target. See "Long-term Incentive Plan vesting: 2022 LTIP - 2022 LTIP energy transition performance conditions outcome" on pages 197-199 for more information.

See "Annual Report on Remuneration" on pages 191-207.

Energy transition performance condition in the 2024 LTIP and PSP awards

For LTIP and PSP awards granted in 2024, the energy transition performance condition had a weighting of 25% in the LTIP and 12.5% in the PSP. Determination of the extent to which awards will vest will be based on its holistic assessment of progress towards reducing emissions from our operations and supporting customers to reduce their emissions.

Energy transition performance condition for 2025 PSA

For the 2025 PSA, the "Shell's journey in the energy transition" performance condition retains the same weighting and performance assessment framework as for 2024. The determination of the extent to which awards will vest will be based on an holistic assessment of progress towards reducing emissions from our operations and supporting our customers to reduce their emissions. This will be based on climate-related targets for our own operations of:

- halving Scope 1 and 2 emissions by 2030 under operational control on a net basis (2016 baseline);
- eliminating routine flaring from upstream operations by 2025 [A]; and
- maintaining methane emissions intensity below 0.2% and achieving near-zero methane emissions by 2030 [B].

[A] This target was subject to the completion of the sale of The Shell Petroleum Development Company of Nigeria Limited (SPDC). With effect from January 1, 2025, SPDC ceased routine flaring. As detailed elsewhere in this report, on March 13, 2025, Shell completed the sale of SPDC to Renaissance.
[B] On an intensity basis.

It will also take into account progress in developments that support the energy transition to 2030 and beyond, such as the development of our Power business (including renewables), lower-carbon LNG, biofuels, electric vehicle charging, hydrogen and CCS.

Additionally, progress towards achieving a 15-20% reduction in NCI by 2030 (2016 baseline) and a 15-20% reduction in customer emissions from the use of our oil products by 2030 (2021 baseline) [C], as well as Shell's wider performance in helping to accelerate the energy transition, such as by demonstrating leadership and advocacy in standard-setting, alongside any other factors considered material will be taken into account.

[C] This ambition was set in March 2024. Customer emissions from the use of our oil products (Scope 3, Category 11) were 517 million tonnes CO_2e in 2023 and 569 million tonnes CO_2e in 2021.

See "Annual Report on Remuneration" on page 206 for more information on the proposed performance framework.

Energy transition targets in the annual bonus scorecard

Delivering on our net-zero emissions target is a part of the annual bonus scorecard, which helps determine annual performance bonus outcomes for senior management and the majority of Shell's employees.

The energy transition progress measures are shown in the table below.

2024 scorecard: Shell's journey in the energy transition

		2024 Target	2024 Performance	2024 Status
LNG volumes [A]	million tonnes per annum	28.7	29.1	Above target
Reducing operational emissions	thousand tonnes of CO_2	700	1,028	Outstanding [B]
Supporting customer decarbonisation	Number of EV charge points	70,000	72,800	Above target

[A] Equity liquefaction.
[B] Above the maximum target

Our score for LNG volumes in 2024 was above target, reflecting strong operational performance. This was driven mainly by volume increases in Australia and the Atlantic region, partly offset by feedgas constraints in Nigeria and Egypt.

The 2024 outcome for operational emissions reductions was outstanding with 1,028 thousand tonnes of GHG emissions reductions from abatement, renewable energy and permanent shutdowns or conversions ("right-sizing"). This was driven by catalyst improvements in Pearl, Forcados Yokri Gas Project in Nigeria and optimisation of liquefaction control system in QGC.

We have continued to grow our network of electric vehicle charge points, exceeding our 2024 target. In 2024, we added around 19,000 charge points, which brings the total number to around 73,000.

There is no change to the energy transition measure in our annual bonus scorecard for 2025.

See "Annual Report on Remuneration" on page 195.

Assurance of GHG emissions measures

Independent assurance report to the directors of Shell plc on Greenhouse Gas Emissions

We have been engaged by Shell plc ("Shell") to perform a 'limited assurance engagement', as defined by International Standards on Assurance Engagements, here after referred to as the engagement, to report on the accompanying GHG statement to be included within the "Our Journey to Net Zero" section within Shell's Annual Report & Accounts for the year ended 31 December 2024 (the "Report"), comprising of the following, hereafter the "Subject Matter". All Subject Matter relates to the year ended 31 December 2024 unless stated otherwise.

Scope 1 & 2 Greenhouse Gas Emissions ("GHG Subject Matter")

- Scope 1 & 2 Greenhouse Gas Emissions (Operational Control Boundary)

Net Carbon Intensity related KPI's ("NCI Subject Matter")

- Net Carbon Intensity
- Scope 3, Categories 1, 3, 9, 11 Greenhouse Gas Emissions (Equity Boundary)
- Revised Net Carbon Intensity for the years ended 31 December 2016 through 31 December 2023 (inclusive)
- Revised Scope 3, Categories 1, 3, 9, 11 Greenhouse Gas Emissions (Equity Boundary) for the years ended 31 December 2016, 31 December 2020 through 31 December 2023 (inclusive)

Other than as described in the preceding paragraph, which sets out the scope of our engagement, we did not perform assurance procedures on the remaining information included in the Report, and accordingly, we do not express a conclusion on this information.

Comparative information included in the Report has not been part of our limited assurance engagement other than KPI's set out within the Subject Matter. Consequently, we do not provide any assurance on the comparative information and thereto related disclosures in the Report. Our conclusion is not modified in respect of this matter.

Criteria applied by Shell

In preparing the GHG Subject Matter, Shell applied its internal performance monitoring and reporting requirements that incorporates ISO 14064-01 (2018) and the Greenhouse Gas Protocol (the "GHG Criteria").

In preparing the NCI Subject Matter, Shell applied the Shell Net Carbon Footprint: Methodology (the "NCI Criteria"). The NCI Criteria can be accessed on shell.com.

GHG and NCI Criteria were designed for the preparation of the Report. As a result, the Subject Matter information may not be suitable for another purpose.

Shell's responsibilities

Shell's management is responsible for selecting the Criteria, and for presenting the Subject Matter in accordance with that Criteria, in all material respects. This responsibility includes establishing and maintaining internal controls, maintaining adequate records and making estimates that are relevant to the preparation of the GHG statement, such that it is free from material misstatement, whether due to fraud or error.

EY's responsibilities

Our responsibility is to express a conclusion on the presentation of the Subject Matter based on the evidence we have obtained.

Our engagement was conducted in accordance with the International Standard for Assurance Engagements on Greenhouse Gas Statements ('ISAE 3410') and the International Standard for Assurance Engagements other than Audits or Reviews of Historical Financial Information ("ISAE 3000 (Revised)"), and the terms of reference for this engagement as agreed with Shell on August 8, 2024.Those standards require that we plan and perform our engagement to express a conclusion on whether we are aware of any material modifications that need to be made to the Subject Matter in order for it to be in accordance with the Criteria, and to issue a report. The nature, timing, and extent of the procedures selected depend on our judgment, including an assessment of the risk of material misstatement, whether due to fraud or error.

We believe that the evidence obtained is sufficient and appropriate to provide a basis for our limited assurance conclusion.

Our independence and quality management

We have maintained our independence and confirm that we have met the requirements of the Code of Ethics for Professional Accountants issued by the International Ethics Standards Board for Accountants and have the required competencies and experience to conduct this assurance review.

EY also applies International Standard on Quality Management 1, Quality Management for Firms that Perform Audits or Reviews of Financial Statements, or Other Assurance or Related Services engagements, which requires that we design, implement and operate a system of quality management including policies or procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

Description of procedures performed

Procedures performed in a limited assurance engagement vary in nature and timing from, and are less in extent than for a reasonable assurance engagement. Consequently the level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained had a reasonable assurance engagement been performed. Our procedures were designed to obtain a limited level of assurance on which to base our conclusion and do not provide all the evidence that would be required to provide a reasonable level of assurance.

Although we considered the effectiveness of management's internal controls when determining the nature and extent of our procedures, our assurance engagement was not designed to provide assurance on internal controls. Our procedures did not include testing controls or performing procedures relating to checking aggregation or calculation of data within IT systems. The Greenhouse Gas quantification process is subject to scientific uncertainty, which arises because of incomplete scientific knowledge about the measurement of GHGs. Additionally, GHG procedures are subject to estimation (or measurement) uncertainty resulting from the measurement and calculation processes used to quantify emissions within the bounds of existing scientific knowledge.

A limited assurance engagement consists of making enquiries, primarily of persons responsible for preparing the Subject Matter and related information, and applying analytical and other relevant procedures. Our procedures included:

- Making inquiries of the specialists responsible for managing the Subject Matter to obtain an understanding of the relevant reporting processes and control framework
- Obtaining an understanding of the Subject Matter and Criteria and considering the reasonableness of the methodology and associated assumptions
- Re-performing the underlying calculations applied in the Subject Matter
- Performing analytical review procedures over the Subject Matter
- Examining the disclosures within the Report for the appropriate presentation of the Subject Matter, including the discussion of limitations and assumptions relating to the data presented

We also performed such other procedures as we considered necessary in the circumstances.

Conclusion

Based on our procedures and the evidence obtained, we are not aware of any material modifications that should be made to the Subject Matter for the year ended 31 December 2024, in order for it to be in accordance with the Criteria.

Restricted use

We disclaim any assumption of responsibility for any reliance on this assurance report or its conclusions to any other persons, or for any purpose other than that for which it was prepared. Accordingly, we accept no liability whatsoever, whether in contract, tort or otherwise, to any third party for any consequences of the use or misuse of this assurance report or its conclusions.

/s/Ernst & Young LLP

Ernst & Young LLP
March 25, 2025
1 More London Place
London
SE1 2AF

Other regulatory disclosures

GHG emissions and energy consumption data - information provided in accordance with UK regulations

Data in this section are consolidated using the operational control approach. Under this approach, we account for 100% of the GHG emissions and energy consumption in respect of activities where we are the operator, irrespective of our ownership percentage.

Reporting on this operational control basis differs from that applied for financial reporting purposes in the "Consolidated Financial Statements".

See "Basis of preparation – absolute Scope 1, 2 and 3 emissions" on pages 100-101.

GHG emissions in million tonnes of CO_2 equivalent

(operational control boundary)	2024	2023	2022
Total global direct (Scope 1) [A]	50	50	51
UK including offshore area [B]	1.6	1.7	1.7
Market-based			
Total global energy indirect (Scope 2) [C]	8	7	7
UK including offshore area	–	–	–
Location-based			
Total global energy indirect (Scope 2) [D]	8	8	8
UK including offshore area	0.04	0.04	0.04
Shell GHG intensity in tonnes per tonne			
Shell GHG intensity [E]	0.27	0.27	0.27

[A] Emissions from the combustion of fuels and the operation of our facilities globally, calculated using global warming potential (GWP) factors from the IPCC's Fifth Assessment Report.
[B] Emissions from the combustion of fuels and the operation of our facilities in the UK and its offshore area, calculated using GWP factors from the IPCC's Fifth Assessment Report.
[C] Emissions from the purchase of electricity, heat, steam and cooling for our own use globally, calculated using a market-based method as defined by the GHG Protocol Corporate Accounting and Reporting Standard.
[D] Emissions from the purchase of electricity, heat, steam and cooling for our own use globally, calculated using a location-based method as defined by the GHG Protocol Corporate Accounting and Reporting Standard.
[E] In tonnes of total Scope 1 and Scope 2 gross emissions per tonne of crude oil and feedstocks processed and petrochemicals produced in downstream manufacturing and, oil and gas available for sale, LNG and GTL production in Integrated Gas and Upstream.

Data inputs used in the calculation of Shell's GHG intensity are as follows:

Inputs used for calculating Shell's GHG emissions intensity

	(operational control boundary)	2024	2023	2022
A	Scope 1 emissions (gross) [A]	50	50	51
B	Scope 2 emissions (gross) [A]	8	7	7
C=A+B	**Total Scope 1 and 2 GHG emissions (gross) [A]**	58	57	58
D	Total oil and gas production available for sale [B]	114	111	111
E	Refinery crude and feedstock processed [B]	60	62	63
F	Chemicals total production [B]	25	21	23
G	LNG production [B]	12	10	9
H	GTL production [B]	6	6	6
I=D+E+F+G+H	**Total Upstream, Integrated Gas and Downstream activity [B]**	**217**	**210**	**212**
J=C/I	**Shell GHG intensity [C]**	**0.27**	**0.27**	**0.27**

[A] In million tonnes CO_2 equivalent.
[B] In million metric tonnes of production. The production data in this table (operational control basis) are not directly comparable with the production data reported elsewhere in this Report (reflecting the sum of production financial control and share of joint ventures and associates).
[C] In tonnes of CO_2 equivalent per tonne of production.

Energy use in our operations

The energy consumption data provided below comprises own energy, generated and consumed by our facilities, and energy purchased (electricity, steam and heat) by our facilities for our use.

Energy consumption data reflects primary (thermal) energy (including the energy content of fuels used to generate electricity, steam, heat, mechanical energy). This includes energy from renewable and non-renewable sources.

Own energy generated is calculated by multiplying the volumes of fuels consumed for energy purposes by their respective lower heating values. Own energy generated that is exported to third-party assets or to the power grid is excluded.

Thermal energy for purchased and consumed electricity is calculated using actual electricity purchased multiplied by country-specific electricity generation efficiency factors (from IEA statistics).

Thermal energy for purchased and consumed steam or heat is calculated from actual steam or heat purchased multiplied by a supplier-specific conversion efficiency, or a generic efficiency factor where supplier-specific data are not available.

Our energy consumption increased from 205 billion kilowatt-hours (kWh) in 2023 to 212 billion kWh in 2024, in line with the increase in our Scope 2 GHG emissions. Around 1% of the energy we used in 2024 for our operations came from renewable sources.

Energy consumption in billion kilowatt-hours

	2024	2023	2022
Own energy generated and consumed			
Total energy generated and consumed	179	174	177
UK including offshore area	6.2	6.1	6.1
Purchased and consumed energy			
Total purchased and consumed energy	33	31	32
UK including offshore area	0.2	0.2	0.2
Energy consumption			
Total energy consumed	212	205	209
UK including offshore area	6.4	6.3	6.3

In 2024, we implemented a variety of measures to reduce the energy use and increase the energy efficiency of our operations.

Examples of some of the principal measures taken in 2024 to reduce energy use and improve efficiency (with estimated total savings of around 1,233 million kWh in 2024) are:
- At our Rheinland site in Germany: replacement of liquid fuel fired boilers with gas fired boilers.
- At our QGC site in Australia: implementation of advanced process control for liquefaction at the QGC Midstream LNG facility and a reduction in required hydraulic power motor speed at well sites.
- At our Prelude site in Australia: optimisation of process resulting in reduced steam consumption and flaring and reduced fuel gas use.
- At our GTL asset in Qatar: reduction of minimum flow of fuel gas to the cogeneration system, allowing fuel gas to be used in other furnaces replacing natural gas usage.
- At our Sarawak Shell Berhad assets in Malaysia: upgrading a gas turbine air intake filter to a high efficiency particulate air (HEPA) filter.
- At our upstream operations in the UK: flare optimisation, which resulted in less fuel gas that needed to be mixed with flare gas to make it combustible.
- At our Gulf of America Mars site: savings of fuel gas combustion as a result of operating the gas compression system with only one field gas compressor.
- At our Gulf of America Perdido site: reduction of the electrical power demand through reduction of production separation pressure.

Examples of some of the principal measures that were taken in 2023 are listed below (with estimated total savings of around 999 million kWh in 2023):
- At our Geismar site in the USA: idling the furnace when not required.
- At our Rheinland site in Germany: optimising the amount of steam required depending on use and load.
- At our Sarnia site in Canada: replacing an existing reaction furnace with a new high-intensity burner.
- At our Scotford complex in Canada: optimisation which enables a reduction in electricity and excess hydrogen vented to flare.
- At our Prelude site in Australia: optimisation of the process and operating conditions to reduce flaring.
- At our Pearl site in Qatar: reducing steam generation requirements via steam balance optimisation.
- At our GTL asset in Malaysia: optimising fuel flows to the boiler unit.
- At our UK Upstream operations: reducing compression power requirements between our Shearwater platform and St Fergus gas terminal.
- At our Gulf of America operations in the USA: optimising power generation between platform and rig and upgrading existing equipment.
- At our Sarawak Shell Berhad assets in Malaysia: optimising the use of gas turbine generators from four to three units.

EU Taxonomy Regulation

The EU Taxonomy Regulation is a classification system for determining when an economic activity can be considered environmentally sustainable according to EU standards. It aims to encourage investment in a low-carbon economy by creating common definitions of sustainability and mandatory disclosures to help investors make informed decisions. In anticipation of the transposition by the Netherlands of the EU Corporate Sustainability Reporting Directive (CSRD) into national law, a key development for Shell in 2024 has been the voluntary implementation of the CSRD and the accompanying European Sustainability Reporting Standards (ESRS). This means Shell plc will come fully into scope of the EU Taxonomy Regulation upon the transposition of the CSRD by the Netherlands into law. The CSRD extends the EU Taxonomy Regulation's reporting obligation to third-country issuers that are listed on European exchanges.

See "EU Taxonomy disclosure" on pages 377-390.

Respecting nature

We seek to protect the environment, increase our reuse and recycling, make a positive contribution to biodiversity and use water and other resources efficiently.

We seek to protect the environment, increase our reuse and recycling, make a positive contribution to biodiversity and use water and other resources efficiently. Our activities can impact nature through discharges and emissions to the environment, and through changes to the use of land and water.

In 2024, we have:
- continued to embed our respect for nature into our activities, standards and business processes;
- expanded our data reporting capabilities to help meet regulatory requirements;
- continued to build employees' awareness, knowledge and skills to deepen their understanding of respecting nature; and
- continued to meet our commitments to reduce fresh-water consumption in water-stressed areas and to use packaging for our products that is designed to be reusable or recyclable.

Our approach is underpinned by the Shell Commitment and Policy on Health, Security, Safety, the Environment and Social Performance (HSSE & SP), and our Safety, Environment and Asset Management (SEAM) Standards, which are part of the Shell Performance Framework.

We require our operated assets to be certified to an independent and internationally recognised standard for environmental management systems, such as ISO 14001 or equivalent, if they have significant environmental risks.

We report data in this section on a 100% basis for companies and joint ventures in which Shell is the operator, unless stated otherwise.

See "Our approach to sustainability" on page 130.

Biodiversity and ecosystems

We aim to manage the impact of our activities on the environment and to make a positive contribution to biodiversity in our operations.
- Forest habitats: We are replanting forests and working to achieve net-zero deforestation from new activities while maintaining biodiversity and conservation value.
- Critical habitats: Our new projects in areas rich in biodiversity, known as critical habitats, are designed to achieve a net positive impact on biodiversity.
- World Heritage Sites: Since 2003, we do not explore for, or develop, oil and gas resources in natural and mixed World Heritage Sites.

When planning a project, our standards require us to assess the potential impact of projects on biodiversity and communities as part of our impact assessment process. We then apply the mitigation hierarchy, a decision-making framework that involves a sequence of four key actions: avoid, minimise, restore and offset.

Achieving a positive impact on biodiversity can take many years because complex ecosystems need time to develop after conservation efforts. We believe it is important to involve communities in conservation projects, so we often work in collaboration with local organisations.

Photo: Reforestation programme, Canada, 2024.

Forest habitats

Deforestation occurs when forests are converted to non-forest uses. We apply the definition of forest used by the UN's Food and Agriculture Organization (FAO). Our commitment to net-zero deforestation commenced in 2022.

Our aim is to avoid deforestation, in line with the mitigation hierarchy. Where avoidance is not achievable, we require our assets, projects and businesses to develop and implement reforestation plans. These plans include measures designed to achieve net-zero deforestation, while maintaining biodiversity and conservation value. We work with partners and stakeholders to develop robust and credible plans unique to each reforestation project.

There is typically a time lag between the deforestation of an area and the start of the replanting process, which can range from months to years. As a result, there is often a difference in the number of hectares deforested and the number of hectares replanted within a single year.

In 2024, around 214 hectares were deforested as a result of our activities. This occurred largely in Australia, Canada and Nigeria where we are preparing for or implementing reforestation programmes in line with local plans. We reforested 64 hectares in 2024 in Canada.

Critical habitats

Critical habitats are specific areas of high biodiversity value in which receptors are particularly sensitive to development.

When undertaking a project in a critical habitat, we aim to go beyond compensating for a residual adverse impact to deliver an overall conservation gain to or net positive impact on biodiversity.

If a project is located in a critical habitat, we develop and implement a biodiversity action plan. This sets out the actions needed to follow the mitigation hierarchy and includes measures to achieve a net positive impact on biodiversity.

At the end of 2024, 62 new projects for which the final investment decision had been taken after February 2021 were located in critical habitats. Of these, 61 have a biodiversity action plan in place to work towards a net positive impact.

Examples of activities in development or under way in 2024 include:
- in partnership with a local university, we are executing an ecological restoration programme on Browse Island, Australia, to help eradicate invasive alien species, improve reef health and promote the return of breeding seabirds to enhance regional resilience;
- on Príncipe Island, São Tomé and Príncipe, we helped implement a turtle conservation programme in partnership with a local conservation organisation; and
- in partnership with the Marine Alliance for Science and Technology for Scotland (MASTS), and its member institutions, including Scottish government stakeholders, we helped to set up a multi-year research programme to gain insights into the ecology of skates and sharks in Scottish waters to help develop effective conservation strategies.

Photo: Turtle conservation, São Tomé and Príncipe, 2024.

Resource use and circular economy

We aim to use water and other resources efficiently, and to increase our reuse and recycling.
- Waste and circularity: Our businesses are deepening their efforts to better understand the types of waste we generate and identify options to increase circular approaches.
- Water: We are implementing water stewardship principles across our businesses and developing water stewardship management plans. This includes focusing on the sustainable management of fresh water resources, particularly in water-stressed areas.
- Packaging: We have a priority to increase the amount of recycled plastic in Shell-branded packaging to 30% by 2030, based on the reference year of 2022, and to ensure that the packaging we use for our products is reusable or recyclable by design. These priorities apply to Shell-branded Mobility and Lubricants products.

Waste and circularity

In 2024, we introduced a new requirement within our SEAM Standards for our assets, projects or businesses to develop strategies to identify circularity-related risks and opportunities. Through this, we aim to encourage the development of fit-for-purpose objectives and strategies based on the principles of rethink, refuse, reduce, reuse, recycle and repair.

Since 2021, we have completed 26 detailed assessments across our businesses to better understand the types of waste we generate and identify options to increase circular approaches. Using these results, our assets are improving local waste management practices by prioritising waste prevention, reuse and recycling over energy recovery and disposal.

Key developments related to waste and circularity in 2024 include:
- at the Pearl gas-to-liquids facility in Qatar, we have diverted waste to local cement kilns for use as clinker in cement production, thereby reducing use of raw materials and the amount of waste sent to landfill;
- our Gulf of America operations are finding ways to reduce disposal of unused chemicals, for example, by testing and treating them so that they can be returned to the supplier for reuse; and
- at our Brazos wind farm upgrade in Texas, we sent decommissioned turbine blades to be recycled for use as a component in construction materials.

We are working to reduce waste and increase circularity in those parts of our business where it is possible to do so. In 2024, we concluded our aim for zero waste is technically unfeasible. We continue to improve waste and circularity plans at the asset level to drive fit-for-purpose waste reduction and optimise local circular economies.

In 2024, we disposed of 1,933 thousand tonnes of waste, compared with 2,251 thousand tonnes in 2023.

Water

We require our assets, projects or businesses to manage sourcing, use, treatment and disposal of water based on recognised water stewardship principles and to implement this through a water stewardship management plan. These plans help us to move away from a traditional inside-out approach focusing on our impact on the environment to an outside-in approach that considers how we impact, and are impacted by, the environment. They also help us to reduce consumption in water-stressed areas.

Since 2021, we have conducted water stewardship assessments at 18 assets across different businesses and regions, with a priority on operations in areas of high water stress and those that use significant quantities of fresh water. The insights gained from these assessments have moved us towards a more holistic stewardship approach. This goes beyond only focusing on water use to also considering factors such as water footprint, regional water stress, water quality, catchments, governance and stakeholder engagement. Building on these efforts, our Mobility and US Midstream businesses developed water stewardship plans in 2024.

In 2021, we set a voluntary commitment to reduce our consumption of fresh water by 15% by 2025 compared with 2018 levels in areas where there is high fresh-water stress. We achieved this commitment ahead of time in 2022. In 2024, our consumption of fresh water in areas of high water stress was 16 million cubic metres compared with 25 million cubic metres in the base year of 2018, a 36% reduction over the period.

Discharges to water

We track pollutants in water returned to the environment from the day-to-day running of our facilities (referred to as "discharges to surface water"). We work to minimise these discharges according to local regulatory requirements and our SEAM Standards.

Plastics

Shell supports the need for improved circularity of the global plastics market. We encourage reduction, reuse and recycling of plastics and are a founding member of the Alliance to End Plastic Waste, which helps governments to assess and improve waste collection and waste management. We are working with partners across the plastic waste value chain, such as the waste management industry and pyrolysis oil producers, to encourage the development of a more circular value chain.

Since 2019, Shell has been processing pyrolysis oil made from mixed plastic waste at the Shell Norco Energy and Chemicals Park in the USA. In 2024, we began production at our new pyrolysis oil upgrader at the Shell Chemicals Park Moerdijk in the Netherlands. The upgrader improves the quality of pyrolysis oil, a liquid made from hard-to-recycle plastic waste, and turns it into chemical feedstock. The plant has the capacity to process up to 50,000 tonnes of pyrolysis oil per year.

Packaging

Shell has a priority to increase the amount of recycled plastic in Shell-branded packaging to 30% by 2030 based on the reference year of 2022 and to use packaging for our products that is reusable or recyclable by design. These priorities apply to Shell-branded Mobility and Lubricants products.

- Packaging classified as reusable or recyclable: In 2024, we continued to meet our priority to use packaging for our products that is reusable or recyclable by design. We maintained 99% total Shell-branded product packaging classified as reusable or recyclable in our Lubricants business and achieved 92% in our Mobility business, compared with 79% in the base year of 2022.
- Recycled plastic content in packaging: By the end of 2024, we had achieved a level of 17% recycled plastic content by weight in Shell-branded plastic packaging compared with 10% in the base year of 2022.

Air quality

We follow the most stringent of either the SEAM Standards or local regulations to manage airborne pollutants in our operations, including emissions of nitrogen oxides (NOx), sulphur oxides (SOx) and volatile organic compounds (VOCs).

There are often synergies to be achieved between greenhouse gas improvement opportunities and reducing emissions of other air pollutants. For example, operational efficiencies that reduce site power generation can also reduce emissions of VOCs, SOx and NOx. In 2024, we continued to implement leak detection and repair programmes to reduce emissions of volatile organic compounds, with a focus on sources exceeding 100 tonnes per year.

We are developing a range of choices for customers to help people and companies reduce their transport emissions. This includes building our electric vehicle charging business. For heavy-duty road transport, LNG as a fuel and GTL fuel and motor oils help reduce sulphur emissions, particulates and nitrogen oxide compared with oil-based products.

Our key metrics in 2024 include:

- SOx emissions in 2024 decreased to 21 thousand tonnes, compared with 31 thousand tonnes in 2023.
- NOx emissions in 2024 increased to 92 thousand tonnes compared with 88 thousand tonnes in 2023.
- VOC emissions in 2024 were 32 thousand tonnes compared with 32 thousand tonnes in 2023 (restated from 36 thousand tonnes following a review of the performance data).

See "Our journey to net zero" on page 76.

Spills

Our assets are designed to avoid discharges to soil or groundwater. However, spills can occur due to operational failure, accidents, unusual corrosion, or theft and sabotage. Large spills of crude oil, oil products and chemicals can harm the environment. They can also result in major clean-up costs, fines and other damages. Spills can affect our licence to operate and harm our reputation.

Spill prevention and response

Our policies on asset integrity and process safety are in place to prevent losses of containment from happening. We design, operate and maintain our facilities with the intention of preventing spills, by identifying potential hazards and implementing controls that can prevent them from occurring. This is integral to our Goal Zero ambition of doing no harm to people and to have no leaks across our operations. If a spill or a leak occurs, we use barriers that operate independently of each other to reduce the likelihood of a release becoming catastrophic. Such barriers are designed so that, if the failure of one occurs, it does not lead to the failure of others. Our policies on soil and groundwater are designed to manage the potential health and environmental impacts should spills occur.

Our business units are responsible for organising and executing spill responses in line with the SEAM Standards and relevant legal and regulatory requirements. Our assets have spill response plans, based on worst-case spill scenarios, should an incident occur. We also continue to be involved in industry groups to improve well-containment capabilities. These include the Marine Well Containment Company in the Gulf of America and Oil Spill Response Limited, a global industry group. For oil spills, we have a global response network that enables us to deal more effectively with oil spills, supplementing local response capability.

See "Safety" on page 123.

In 2024, there were 69 operational spills of more than 100 kilograms compared with 71 in 2023 (restated from 70 operational spills of more than 100 kilograms following a review of the performance data). The volume of operational spills of oil and oil products in 2024 was 1.23 thousand tonnes, compared with 0.37 thousand tonnes in 2023. The increase in operational spill volumes is partly attributable to a spill that occurred during severe weather in the Gulf of America, as well as incidents in Singapore, Canada and Nigeria.

Spills in Nigeria

SPDC JV - Nigeria: operational spills

In 2024, The Shell Petroleum Development Company of Nigeria Limited (SPDC) [A], as operator of the SPDC joint venture (SPDC JV, Shell interest 30%), reported 20 operational spill incidents of more than 100 kilograms of crude oil, compared with 9 reported in 2023. The increase in the number of operational spill incidents was largely because of a rise in cases of failure due to factory defects in a locally manufactured clamp used in pipeline repairs following the removal of illegal connections. The company that manufactured the clamps has recalled the affected batch, and SPDC has commenced the replacement of the clamps.

In 2024, the volume of operational spills of oil and oil products was 0.37 thousand tonnes compared with 0.005 thousand tonnes reported in 2023. The majority (89%) of the 2024 volume relates to two significant incidents, one onshore on the Trans Niger Pipeline and the other offshore at a terminal loading buoy.

[A] Unless otherwise stated, all activities reported for or as relating to The Shell Petroleum Development Company of Nigeria Limited (SPDC) in this section should be understood as SPDC acting as the operator of the SPDC joint venture (SPDC JV). SPDC, as the corporate entity, owns 30% of the joint venture.

SPDC JV has an ongoing work programme to appraise, maintain and replace key sections of pipelines and flow lines to reduce the number of operational spills.

On March 13, 2025, Shell completed the sale of SPDC to Renaissance. By preserving the full range of SPDC's operating capabilities, the transaction has been designed to ensure that the company can continue to perform its role as operator and to meet its share of commitments within the joint venture, including those relating to health, safety, security and environment.

See "Upstream" on page 43.

SPDC JV - Nigeria: spills caused by crude theft and sabotage

In 2024, about 81% of crude oil spill incidents of more than 100 kilograms from SPDC JV facilities were caused by the illegal activities of third parties. In 2024, the volume of crude oil spills of more than 100 kilograms caused by crude theft and sabotage was 2.0 thousand tonnes (84 incidents), compared with 1.4 thousand tonnes (139 incidents) in 2023. The decrease in the number of incidents in 2024 shows an increased effectiveness of anti-theft protection mechanisms.

Prevention

In 2024, SPDC JV continued on-ground surveillance of its areas of operation, including its pipeline network, to mitigate third-party interference and ensure that spills are detected and responded to as quickly as possible.

Regular surveillance flights and drones are used to inspect the most vulnerable segments of the pipeline network, monitor security and identify any new spills or illegal activity. SPDC JV continued to install and improve anti-theft protection mechanisms for key infrastructure, such as wellheads and manifolds. These include protective measures such as cages, anti-theft nuts and improved CCTV and networking capabilities. These measures continue to help deter theft and improve response.

SPDC JV continued to work with the government security agencies in 2024 to maintain surveillance and address illegal activities of third parties, primarily along the SPDC JV pipelines and their operational areas.

Response and remediation

Regardless of the cause, SPDC JV cleans up and remediates areas affected by spills originating from its facilities. Clean-up activities include bio-remediation which stimulates micro-organisms that naturally break down and use carbon-rich oil, effectively removing it. Once clean-up and soil remediation operations are completed, the work is inspected and, if satisfactory, approved and certified by the Nigerian regulators. In the event of operational spills, SPDC JV also pays compensation to affected people and communities.

SPDC JV works with a range of stakeholders in the Niger Delta to monitor biodiversity recovery at remediated sites and to build greater trust in spill response and clean-up processes.

The clean-up programme established following the 2011 United Nations Environment Programme (UNEP) report on Ogoniland is executed by the Hydrocarbon Pollution Remediation Project (HYPREP), an agency of the Nigerian government. Completion of remediation under this programme is verified and certified by the National Oil Spill Detection and Response Agency (NOSDRA). HYPREP has reported progress of the execution of its programme during 2024 with clean-up efforts for 18 sites continuing, and remediation plans being developed for the remaining 15 sites. SPDC has fully funded its share of the HYPREP programme.

In 2015, SPDC JV and the Bodo community in Ogoniland signed a memorandum of understanding, granting the remediation team access to begin cleaning up areas affected by two operational spills that occurred in 2008. Phase 1 of an agreed three-phase clean-up and remediation programme, which involved removal of oil from shoreline surfaces and mud flatbeds, was completed in 2018. In 2024, SPDC JV remediated soil and sediments in an additional 106 hectares, bringing Phase 2 to 99% completion. SPDC JV also planted about 1.7 million mangrove seedlings in 2024 as part of Phase 3, achieving 85% of the project's revegetation goal, up from 17% in 2023. SPDC JV is seeking certification of remediated areas from NOSDRA.

SPDC JV continues to raise awareness of and counter the negative effects of crude oil theft and illegal oil refining.

Powering lives

We power lives through our products and activities, and by supporting an inclusive society.

Shell strives to make a positive impact on people around the world and this includes providing the energy people need, contributing to local economies and communities, championing inclusion and respecting human rights.

We help ensure energy security in our key markets and invest in businesses that supply energy access in emerging markets. Through our social investments, we also provide funds, expertise and resources to increase energy access outside of our commercial business. The supply of affordable and secure energy is crucial for addressing global challenges, including those related to poverty and inequality.

Our activities contribute to economies and communities around the world through job creation, spending on goods and services, and through the payment of taxes and royalties to governments. Across more than 70 countries, we employ thousands of people and provide them with opportunities to develop their careers.

As we transform into a net-zero emissions energy business, we work with governments and society to support positive economic and social impacts of the transition on our workforce, communities, suppliers and customers.

Our core values of honesty, integrity and respect for people underpin everything we do. We aim to become one of the world's most diverse and inclusive organisations, a place where everyone feels valued, respected and has a strong sense of belonging.

The importance of respecting people also extends to our suppliers. Shell's Supplier Principles outline our expectations for business integrity, health, safety, security, labour and human rights, and environmental and social performance.

Many of our operations are located close to communities and we aim to be a good neighbour. This includes strong community engagement, managing the negative social impacts of our operations and delivering a range of benefits through jobs, local business opportunities and social investment programmes. This engagement enables us to identify and manage impacts from our activities and provide access to remedy.

Our people

Our people are essential to our purpose of powering progress together. They are key to delivering our strategy and we believe in helping them to develop their skills.

All metrics throughout this section exclude employees in portfolio companies [A], except for the metrics reflecting total employee number by gender and region, percentage of women employees, and certain mandatory training courses.

[A] Portfolio companies are non-integrated entities within the Shell Group. To give these companies the flexibility they need, they operate as subsidiaries while generally retaining their own processes and systems. Portfolio companies comply with Shell's minimum requirements for controls and compliance. This includes the Shell Performance Framework and mandatory requirements for ethics and compliance, risk management and safety.

Photo: Staff at Karachaganak, Kazakhstan.

Employee overview

We employed 96,000 people on a full- or part-time basis as of December 31, 2024. This compares with 103,000 at the end of 2023 and 93,000 at the end of 2022.

The reduced number of employees in 2024 compared with 2023 reflects our focus on performance, discipline and simplification as we implement our strategy. We improved efficiencies, and divested and ended some activities in our Downstream, Renewables and Energy Solutions business. We also improved efficiencies in our Projects & Technology, Human Resources, Legal and Corporate Relations functions.

Employee overview figures include people working for Shell companies and Shell-operated joint ventures, as well as those seconded to non-operated joint ventures, but exclude contingent workers, otherwise referred to as contractors. Contractors are external workers who are engaged directly or through third parties to provide services to Shell. They work alongside Shell employees in divisions such as Information and Digital Technology.

Changes in headcount

We employed 81,000 people in Shell, excluding portfolio companies, at the end of December 2024. This is fewer than the 84,000 at the end of 2023. Shell's portfolio companies, which generally maintain their own HR systems, employed 15,000 at the end of 2024 compared with 19,000 at the end of 2023.

See Note 33 to the "Consolidated Financial Statements" on page 311 for the average number of employees by business segment.

Employees
96,000
employees

Countries and territories
>70
countries in which we operate

Directors
42%
women on the Board of Directors

Executive Committee
57%
women on the Executive Committee

Senior leaders
33%
women in senior leadership positions

Women employees
35%
women employees

Training
264,000
training days for employees and joint-venture partners

Experienced hires
3,156
people joined Shell (37% women, 63% men)

Graduate hires
334
people joined Shell (57% women, 43% men)

[A] Numbers presented are as of December 31, 2024.

The table below presents the total employee number by gender and region as of December 31, 2024.

Number of employees by gender and region

Thousand

	2024			2023	2022
	Men	Women	Total	Total	Total
Number of employees	63	33	96	103	93
Breakdown by region					
Africa	2.5	0.9	3	4	4
Asia	21.7	14.0	36	38	32
Europe	19.1	10.7	30	31	30
North America	16.7	6.2	23	24	23
Oceania	1.9	0.9	3	4	3
South America	0.9	0.6	2	2	1

The table below presents the distribution of employee contract type, by gender and region as of December 31, 2024.

Employee contract type by gender and region [A]

	Permanent contract/ Employment at-will [B]		Fixed-term contract	
	Men	Women	Men	Women
Number of employees	52,000	28,000	763	344
Breakdown by region				
Africa	4%	3%	7%	15%
Asia	38%	44%	36%	40%
Europe	31%	34%	50%	40%
North America	22%	15%	1%	1%
Oceania	3%	2%	6%	4%
South America	2%	2%	–	–

[A] Excludes employees in portfolio companies.
[B] Employment at-will is used in the USA to describe employment contracts.

The table below presents the number of employees by age group.

Employees by age group [A] [B]

Thousand

	% of employees	2024	2023	2022
Under 30 years old	13%	10	12	11
Between 30 and 50 years old	64%	52	54	51
Above 50 years old	23%	19	18	17
Total employees	100%	81	84	79

[A] Excludes employees in portfolio companies.
[B] Includes employees seconded to joint ventures.

Shell aims to be an attractive employer to its existing and prospective employees. We offer employees the opportunity to develop their careers within Shell, including rotations across different parts of the business to grow their skills and progress.

People development remains a priority for our organisation. We proactively identify skill and capability gaps for traditional and emerging businesses; offer training to address these gaps; and if needed recruit talent externally to add to the skills and experiences of our workforce. To enable our leaders to lead this change, we support them through targeted interventions including leadership development and coaching. Our mindset and behaviours, which emphasise psychological safety, are at the heart of our leadership programmes. Training courses are accessible to all employees, either online or in person. In 2024, 264,000 formal training days were delivered to employees and joint-venture partners. This compares with 295,000 training days in 2023 and reflects staff reductions in 2024.

Shell's employee turnover as of December 31, 2024 was 7.6%; 6,227 employees left Shell of which 2,931 resigned voluntarily. This compares with 5.7% in 2023, during which 4,685 employees left Shell of which 2,669 voluntarily.

Employee engagement

Insight into employee needs and perspectives enables Shell to continually learn and improve our policies, processes and practices.

Management regularly engages with employees through elected employee representatives and a range of local formal and informal channels. These channels include webcasts and all-employee messages from our CEO and other senior leaders, as well as town halls, team meetings and site visits by the Board and EC.

In 2024, members of the Board and EC visited Shell sites in the Netherlands where they engaged with employees on our strategy and the energy transition. Board members and Chair, Sir Andrew Mackenzie, also met with employees in Qatar, Oman and Brazil.

See "Workforce engagement" on pages 167-168.

We seek to comply with applicable local laws and regulations, including those on working hours. Shell is committed to respecting human rights. This includes, but is not limited to, the elimination of forced and child labour, respect for freedom of association and the effective recognition of the right to collective bargaining. Where appropriate, engagements take place with union and employee representatives at asset and country level, as well as with the Shell European Works Council. Employees have access to senior leaders, local employee forums and employee resource groups. We believe these engagements enable Shell to maintain a constructive employee and industrial relations environment.

Photo: In June 2024, Shell's Board of Directors visited Holland Hydrogen 1, one of Europe's largest renewable hydrogen plants, which is under construction in the Netherlands.

The Shell People Survey

The Shell People Survey is one of the key tools we use to measure employee engagement, motivation, affiliation and commitment to Shell. External and internal research shows that increased employee engagement can result in better business performance and improved safety. In 2024, the response rate to the survey was 86%, compared with 88% in 2023 which indicates our people's desire to provide feedback. The overall employee engagement score decreased to 75 (compared with the top quartile 80 points) from 79 points in 2023, which we believe reflects the level of changes introduced in the organisation as we transform our business to deliver more value with less emissions.

Pay, benefits and well-being

Our Fair Pay Principles are designed to manage pay at Shell and help us ensure that employees are valued, respected and recognised for the work they do. Shell's pay is designed to be market competitive and free from bias. The basis for paying fairly is equal pay for equal work, taking into account factors such as performance and experience. Through regular benchmarking, Shell's compensation is typically higher than the minimum wage level observed locally, including in countries without legislation on minimum wage. Pay adjustment at Shell is linked to performance and we share this information with employees to help them understand how their pay adjustments are made. We continue to engage employees transparently and openly about our pay policies to help build understanding, trust and confidence in our approach.

Shell provides a range of benefits, such as global minimum standards for life, accident and disability cover, as well as maternity and parental leave, except in certain cases where we are precluded from offering this. Our benefit packages are tailored to each country to meet the requirements of local laws and regulations.

Flexible work

We seek to build a sense of community and collaboration within Shell's sites where we want employees to feel welcome and valued. By enabling people to balance their work and personal lives, we can help them perform at their best. Our Future of Work guide advises employees and team leaders on hybrid working options.

Employee well-being

Our goal is to empower our employees to feel their best and perform at their best. We do this by promoting mindsets and behaviours that support good health, by protecting our people from illness by mitigating known risk factors. We use evidence-based tools and provide access to timely support and care for those who are injured, ill or struggling.

Interventions to promote mental, physical and social well-being are delivered via a mix of measures. For example, through the design of our workspaces, through local benefit offerings such as gyms and health checks, and through our country-based employee networks, group activities and events. Our global campaigns such as I'm Not OK and World Mental Health Day, help develop individual and team well-being skill sets, to create healthy and psychologically safe working environments, and to nurture a culture of care.

Mental well-being

We work to reduce the stigma associated with mental ill health through open conversations, global and country-level campaigns, senior leader communications, engagements with elected employee representatives, and through our experience-sharing portal for employees. This commitment is underscored by our CEO signing a leadership pledge with MindForward Alliance and the launch of our Global Mental Well-being Programme in 2023. The programme's interventions focus on developing a workplace culture that supports good mental health and offers employees the opportunity to complete an anonymous and voluntary survey in which they can voice their experience of well-being at Shell. We monitor the survey results to identify opportunities to improve employee well-being. In 2024, we continued to improve the programme, introducing new resources such as those that address financial well-being.

Diversity, equity and inclusion

We have ambitions around diversity, equity and inclusion and monitor these on a regular basis. We also continually assess our culture and employee engagement through tools such as the annual Shell People Survey.

We promote equal opportunity and aim to create an environment where people feel included. Our approach seeks to reinforce respect for people and seeks to provide psychological safety for all our employees.

Shell employees and contractors are required to complete training courses that reinforce expected behaviours for a respectful, inclusive workplace, and build our stance against discrimination and harassment, including bullying and sexual harassment. Employees and contractors are required to take these courses every two years.

In 2024, our Shell People Survey showed a result of 81 points out of 100 for all questions relating to DE&I. This is a decrease of two points from 2023 and puts us below the top quartile (85 points). We will continue to focus on improving these efforts in the workplace.

As of 2024, Shell is able to provide 93% of employees where legally permissible with the option to voluntarily declare their gender identity, sexual orientation, race and ethnicity, and disability, via the HR system. Data from this self-identification initiative allow us to monitor progress against our DE&I aspirations.

Gender

We strive to achieve gender equality. We have signed the World Economic Forum declaration on closing the gender gap in the oil and gas sector and have endorsed the Catalyst CEO Champions for Change initiative for the advancement of women, especially those from ethnic minorities, into senior leadership and board positions.

In line with the UK Listing Rules, the Board of Shell plc aims for gender balance on the Board, with at least one senior Board position [A] held by a woman. To provide flexibility for periods of change, we aim to maintain the representation of both men and women at, or above, a minimum of 40%. As of December 31, 2024, women made up 42% of the Board and the position of CFO was held by a woman.

[A] Senior Board position means Chair, CEO, Senior Independent Director, or CFO.

Over the years, Shell has progressively increased the representation of women on the EC and in senior leadership roles. As of January 1, 2024, we had 57% women and 43% men on our EC. We aim to achieve 35% representation of women in our senior leadership positions by 2025, and 40% by 2030. The table below shows the representation of women as of December 31, 2024.

Gender diversity at Board and management level [A]

	Men		Women	
Level	2024	2023	2024	2023
Board	58%	58%	42%	42%
Executive Committee	43%	57%	57%	43%
Senior Leadership roles [A]	67%	68%	33%	32%

[A] Senior Leadership is a Shell measure based on compensation grade levels. This measure is distinct from "senior manager" as per statutory disclosure requirements set out in the table below.

Gender diversity data (at December 31, 2024)

	Men		Women	
Gender diversity data	Number	%	Number	%
Directors of the Company	7	58%	5	42%
Senior managers [A]	774	65%	413	35%
Employees (thousand)	63	65%	33	35%

[A] Senior manager is defined in section 414C(9) of the Companies Act 2006 and, accordingly, the number disclosed comprises the Executive Committee members who were not Directors of the Company, and other directors of Shell subsidiaries (excluding Directors of portfolio companies).

As of December 31, 2024, 35% of Shell employees were women. Of the experienced hires who joined Shell as of December 31, 2024, 37% were women compared with 38% in 2023. Of the graduate hires who joined Shell as of December 31, 2024, 57% were women compared with 40% in 2023.

A crucial element of achieving gender balance is addressing any pay gap [A] and we continue to work towards improvements in this area. The basis for paying fairly is equal pay for equal work, taking into account factors such as performance and experience. At Shell, we monitor pay equity [B] through regular analysis to be confident that we have pay equity between genders for performing the same jobs. We address any unexplained pay differences related to gender through rigorous internal processes and apply our Fair Pay Principles. We continue to make progress in our gender ambitions at Shell, but a gender pay gap exists for several reasons, including fewer women in senior leadership positions and fewer women in higher-paid specialist roles.

[A] Shell seeks to comply with applicable requirements and regulation on pay gap reporting.
[B] Men and women who are paid the same for doing similar jobs, at similar level, responsibility, tenure and performance.

Race and ethnicity

Through racial and ethnic representation across our workforce we aim to reflect the communities in which we work. Shell's Global Council for Race is supported by an Employee Advisory Board which aims to advance diversity in our workforce.

Shell aims to maintain or exceed having at least one Board member from an ethnic minority background, while acknowledging that in periods of Board change this may not be achieved. As of December 31, 2024, the Board had three members who identify as being from an ethnic minority group and one EC member who identifies as being from an ethnic minority group [A].

In support of the Parker Review recommendations, Shell aims to achieve 15% ethnic minority group representation in its Senior Management [B] by 2027. As of the end of 2024, 15% of Shell's Senior Management identifies as being from an ethnic minority group.

[A] Ethnic minority refers to an individual who self-identifies as Asian, Black, Mixed/multiple, or other ethnic minority group, in line with UK Office for National Statistics classifications.
[B] As per Parker Review recommendations, Senior Management refers to senior leadership based in the UK and is a Shell measure based on compensation grades. We have moved to this Shell definition of Senior Management for 2024 onwards to align with our self-identification data collection and processes.

See "Nomination and Succession Committee" on pages 171-174 for our current talent management and succession process.

In some countries, there are local restrictions on collecting and reporting race and ethnicity data. Shell offers employees the option to voluntarily declare their race and ethnicity via our self-identification initiative.

See shell.com for more information on our DE&I progress in the UK, the USA and the Netherlands.

LGBT+
We are working to advance lesbian, gay, bisexual and transgender plus (LGBT+) inclusion within Shell and the communities where we work. Most of our work around LGBT+ inclusion happens at a country level, in line with local policies, laws and regulations.

Disability inclusion and accessibility
We are working to advance an inclusive, psychologically safe and accessible environment where people with disabilities can excel. We provide support and adjustments for people with disabilities during the recruitment process. For example, candidates with a disability or long-term health condition can indicate whether they require adjustments to our facilities or our job application process. Our support teams and systems are equipped to make these adjustments if required. We also support employees throughout their careers with Shell, including access to educational resources, training programmes and personal and professional development. Our Disability, Accessibility and Inclusion portal provides comprehensive guidance and tools for line managers, leaders, people with disabilities and employees to be active allies. Shell's enABLE employee resource groups provide expertise and advice to Shell leaders and our businesses on accessibility and disability inclusion. We also offer a workplace accessibility service which covers 68 locations in 33 countries. The team is supported by functions such as Shell Health, Human Resources, Real Estate and IT.

Shell is part of the Valuable 500, which comprises 500 of the world's largest companies and organisations that are working collectively to progress disability inclusion. We are also an active member of the Business Disability Forum and PurpleSpace.

Employee share plans
Our share plans align employees' interests with our performance through share ownership.

See the "Directors' Remuneration Report" on pages 188-207.

Discretionary share awards
For 2024, Long-term Incentive Plan (LTIP) awards were made to Executive Directors and Senior Management, and Performance Share Plan (PSP) awards to nominated employees on a highly selective basis. These plans were designed to ensure that remuneration is clearly aligned with Shell's Operating Plan and/or longer-term strategic ambitions. Half of the performance conditions applied to the PSP are the same as those applied to the LTIP, and performance is measured over three years under both plans.

* Non-GAAP measure (see page 445).

For the 2024 LTIP, 25% of the award is linked to organic free cash flow and 25% to the energy transition, with the remaining 50% linked to comparative performance conditions. For the 2024 PSP, 50% of the award is linked to certain indicators described in "Performance indicators" on pages 18-19, averaged over the performance period, with the remaining 50% linked to the same performance conditions as for the LTIP.

See the "Directors' Remuneration Report" on pages 188-207.

For 2025, Restricted Share Awards (RSA) and/or Performance Share Awards (PSA) may be awarded to nominated employees on a highly selective basis. RSAs support employee retention over a three-year period and provide a stake in the Company's future. PSAs ensure that remuneration is clearly aligned with Shell's strategic ambitions and are measured over a three-year performance period.

See "Annual Report on Remuneration" on page 206 for further information on the performance conditions.

Separately, following the BG acquisition, certain employee share awards made in 2015 under BG's Long-term Incentive Plan were automatically exchanged for equivalent awards of shares in the Company. The outstanding awards take the form of nil-cost options.

Under all plans, vesting shares are increased by notional dividends accrued during the period from award to vesting. In certain circumstances, awards may be adjusted before delivery or be subject to clawback after delivery. None of the awards result in beneficial ownership until the shares vest.

See Note 28 to the "Consolidated Financial Statements" on page 305.

Global Employee Share Purchase Plan
Eligible employees in participating countries may participate in the Global Employee Share Purchase Plan. This plan enables them to make contributions from net pay towards the purchase of the Company's shares at a discount to the market price.

UK Shell All Employee Share Ownership Plan
Eligible employees of participating Shell companies in the UK may participate in the Shell All Employee Share Ownership Plan, under which monthly contributions from gross pay are made towards the purchase of the Company's shares with a matching element.

Contribution to society

People's lives are better with energy. We help to power lives by providing vital energy for homes, businesses and transport, including for cooking, heating and lighting. Energy is also used to provide essential services, such as health care, and manufactured products which society consumes daily. Shell delivers energy for millions of people around the world every day and is working to help provide energy to those who do not yet have it.

For example, in November 2024, we joined forces with bp, Equinor and TotalEnergies to announce a $500 million joint investment commitment to help address the challenges of energy access. This joint investment seeks to support promising, high-impact projects, primarily in Sub-Saharan Africa, and South and South-east Asia, that are working to bring access to electricity and improved cooking conditions to underserved communities.

We want to help communities benefit from having us as their neighbour. Some of the ways in which we make a meaningful contribution are by generating jobs and supporting start-ups and local businesses. In 2024, our operated and non-operated ventures spent around $42 billion on goods and services* from suppliers around the world, compared with $49 billion in 2023. This reduction is mainly driven by structural cost reductions and discipline and focus in cash capital expenditure as we implement our strategy.

Photo: For more than 40 years, Shell LiveWire has helped entrepreneurs start and/or grow their businesses. Its biennial Top Ten Innovators awards selects young businesses that excel in social impact, environmental sustainability and business innovation. Camila de Araujo Reveles Barreira of Brazil was a Top Ten winner in 2023.

Our activities also generate revenues for governments through the taxes and royalties we pay, which can help governments to fund health care, education and other essential services. We publish an annual Tax Contribution Report which sets out the corporate income tax that Shell companies paid in the countries and locations where we have a taxable presence. In 2024, Shell paid $18 billion in taxes* to governments, of which $12 billion was paid in corporate income taxes and $6 billion in government royalties.

See shell.com for the Tax Contribution Report.

* Non-GAAP measure (see page 445).

Supply chain

Our business activities depend on a competitive and resilient supply chain. Suppliers play an important role in helping to deliver our strategy and helping to create value for our stakeholders.

As part of Shell's responsible sourcing approach, we aim to work with suppliers that behave in an economically, environmentally and socially responsible manner. Shell partners with suppliers who adhere to our Shell General Business Principles and Shell Supplier Principles. The Shell Supplier Principles set out our expectations of suppliers with respect to business integrity; health, safety, security, environment and social performance (HSSE & SP); and labour and human rights. Our standard contract terms require adherence to these or equivalent principles.

Worker welfare

Our approach to worker welfare focuses on the well-being of supplier staff on Shell sites and dedicated supplier staff on non-Shell sites, where we have the most ability to influence safety, working conditions and labour rights. We also work with our partners and peers to include worker welfare in industry standards, guidance and best practice. This helps raise expectations and levels of consistency across the industry. Our approach is based on the principles established by Building Responsibly, an alliance of companies that seeks to promote the rights and welfare of workers in the engineering and construction industry.

In 2024, we continued to collaborate with peers and suppliers to drive consistency across the industry on worker welfare.

See shell.com for more information about how we engage with contractors and suppliers.

Working with communities

We engage with communities to help us understand their needs and expectations. This engagement enables us to identify and manage impacts from our activities and provide access to remedy. Engagement is a continuous process that helps us improve our decision-making and performance. Shell's Safety, Environment and Asset Management (SEAM) Standards are designed to help us to operate responsibly and avoid or minimise any potentially negative environmental and social impacts that may result from our operations.

Communities can raise concerns in a number of ways. At large projects and assets, community engagement practitioners act as a bridge between local communities and our operations. Community feedback mechanisms allow us to receive, track and respond to questions and complaints. In 2024, we improved our internal tools to make it easier to track community satisfaction with the remedy offered by the process. Communities can also raise concerns anonymously through the Shell Global Helpline.

Our SEAM Standards require us to apply special procedures in situations involving involuntary resettlement, cultural heritage, Indigenous Peoples or operations in environments with high or unusual social risks. In 2024, we engaged with communities who were impacted by our business activities through involuntary resettlement which restricted their access to some areas on which they depend for their livelihoods. This occurred in Albania, Norway, South Korea, Trinidad and Tobago, and the UK. Our engagement involved plans to manage these impacts. We also provided support to help avoid or manage involuntary resettlement impacts in our non-operated ventures.

See "Our approach to sustainability" on page 130.
See shell.com for more information about our work with communities.

Social investment

Our activities contribute to economies through taxes, jobs and business opportunities. We also make social investments in areas determined by local community needs and priorities. These investments are sometimes voluntary, sometimes required by governments, or part of a contractual agreement. Shell has three priority areas for social investment: access to energy; skills and enterprise development; and science, technology, engineering and mathematics (STEM) education.

In 2024, we spent $165 million on social investment, of which $87 million (53%) was required by government regulations or contractual agreements. We spent the remaining $78 million (47%) on voluntary social investment.

See shell.com for more information about our social investment.

Human rights

Human rights are fundamental to Shell's core values of honesty, integrity and respect for people. Respect for human rights is embedded in the Shell General Business Principles and our Code of Conduct. Shell is committed to respecting human rights, as set out in the United Nations Universal Declaration of Human Rights and the International Labour Organization's Declaration on Fundamental Principles and Rights at Work. Our approach is informed by the UN Guiding Principles on Business and Human Rights. We work closely with various organisations to improve how we apply these UN guiding principles.

In 2024, we continued to work on salient human rights issues (salient human rights are those that are most at risk from our operations). We prioritise four focus areas where respect for human rights is critical to how we operate: at the workplace including labour rights, in supply chains, communities and security. For each of these areas, we have systems to identify potential impacts and to avoid and mitigate them. Shell employees working in these focus areas need to complete mandatory human rights training. In addition, we encourage all employees to complete the course regardless of their role, to build greater understanding of human rights across Shell.

Human rights focus areas

	At the workplace	In supply chains	In communities	In security
Salient issues	• Health and safety • Discrimination • Decent living conditions in worker accommodation • Access to adequate and readily available channels to voice concerns	• Labour rights in our supply chains, e.g. prevention of forced labour, access to remedy • Safe and healthy working conditions • Decent living conditions in worker accommodation	• Social impact management • Vulnerable persons/ communities • Land access, livelihoods and cultural heritage • Engagement and access to remedy	• Human rights impact on communities by private security and/or government security forces we rely on • Security of employees and contract staff in high-risk environments where we work

See "Safety" on pages 122-124.
See shell.com for more information about our approach to human rights.

Safety

Safety, along with our core values, underpins our strategy. We aim to do no harm to people and to have no leaks across our operations. We call this our Goal Zero ambition.

The nature of our operations exposes us to a wide range of safety risks. We plan and execute our work with the aim of preventing harm to people or leaks to the environment and to be prepared to respond if something goes wrong.

We seek to improve safety by focusing on the three areas where the safety risks associated with our activities are highest: personal safety, process safety and transport safety. We strive to reduce risks and to minimise the potential impact of any incident. We place a particular emphasis on the risks that could lead to the most serious consequences if they materialised.

We continue our multi-year process of refreshing our approach to safety for all employees and contractors. This approach is rooted in a consistent focus on human performance. We ask people at Shell to apply a learner mindset, by which we mean the belief that we can always improve, enhance individual capabilities, learn from mistakes and successes, and speak up freely without repercussions.

In practice, our refreshed approach to safety is about enhancing how we prepare for and conduct high-risk activities by:
- improving our preparation and execution of frontline work, building an environment of trust and learning;
- moving to industry-wide tools so that Shell and contractors work on the same basis to manage risks; and
- using technology to reduce exposure and identify conditions that could lead to serious incidents.

It is also about capturing more insights by:
- focusing on serious injuries, illness and fatalities (SIF) and the lessons we can derive from high-potential incidents where the most serious consequences that could have led to SIF did not materialise;
- focusing on learning from losses or potential losses of containment, and on any degradation of barriers designed to prevent or minimise the consequences of leaks;
- capturing underlying causes through incident investigations; and
- embedding lessons learned in our training and instructions for future work.

Our approach is governed by our Safety, Environment and Asset Management (SEAM) Standards, which set out our detailed requirements for personal, process and transport safety.

See "Our approach to sustainability" on page 130.

Assurance activities play a key role for Shell in providing real-time feedback about our assets, businesses and functions regarding the health of critical human and technical safeguards that help prevent a safety incident. Our assurance activities aim to verify the design and functioning of controls, validate the overall efficiency of risk management, and highlight areas for improvement.

We report data in this section on a 100% basis for companies and joint ventures in which Shell is the operator, unless stated otherwise.

Technology and safety

We are using digitalisation and artificial intelligence to gather and process data from our equipment and improve analysis and reporting. This enables remote support and allows us to take action quickly in unsafe situations.

For example, we have installed T-Pulse, an AI-automated safety monitoring solution developed by Detect Technologies, at 26 sites. T-Pulse uses CCTV to identify and report real-time safety issues and unsafe behaviours. Since we began using T-Pulse in 2020, it has generated alerts for more than 20,000 potential safety issues. In more than 1,300 of those cases, interventions helped prevent significant harm to people or leaks into the environment.

We are installing active fatigue and distraction detection (AFDD) devices in vehicles operated by Shell employees or our contractors in countries where road transport risks are highest. These devices help us intervene earlier to prevent accidents by detecting the conditions that can lead to them.

Personal safety

We continue to strengthen the safety culture and leadership among our employees and contractors. This aligns with our focus on caring for people.

Our SEAM Standards establish requirements for occupational health and safety hazards that have the potential to result in harm to people. When our employees and contractors perform tasks, we expect them to consider the hazards that could potentially cause harm and the effectiveness of the barriers in place to prevent incidents and manage the consequences should an event occur. We establish and maintain competence management systems to help ensure people are competent to perform their roles and responsibilities.

We run safety awareness programmes and hold an annual global Safety Day to give employees and contractors time to discuss safety culture on the frontline, reflect on how to prevent incidents, and how to improve performance. In 2024, the focus was on "Before I start work", which means pausing to reflect on what needs to be in place before we start work, for that work to be done safely.

Process safety

Process safety management is about keeping hazardous substances inside pipes, tanks and vessels, and ensuring that well fluids are contained during construction, interventions (such as maintenance) and incidents. Our SEAM Standards establish requirements from project design and construction throughout the life cycle of the asset to keep sites, employees, contractors and communities safe.

Our SEAM Standards set the steps we take to manage process safety risks, from identifying potential safety hazards to designing the controls that prevent them from occurring. Our standards require the use of barriers that operate independently of each other to reduce the likelihood of a release becoming catastrophic. Such barriers are designed so that if one fails, this does not lead to the failure of others.

We are focusing on standardising our risk assessment tools, improving human performance, working to mitigate process safety risks and moving from lagging indicators (measuring past outcomes) to leading indicators (predicting future performance). With the implementation of the SEAM Standards, our assurance methodologies for process safety have been updated to provide more insight on the health of barriers designed to reduce the likelihood of leaks and mitigate any potential consequences should a leak occur.

We continue to learn from investigations into industry incidents and embed this knowledge into our process safety standards and training programmes.

Preparing for emergencies

We prepare and practise our emergency response to incidents, such as a spill or a fire. This involves working closely with local emergency services and regulatory agencies to jointly test our plans and procedures. Shell requires key operating facilities to test their emergency response preparedness as per regulatory requirements and aligned to industry best practices. In 2024, we held large-scale emergency response exercises at Shell Energy and Chemicals Park Rotterdam in the Netherlands and in Perth, Australia for offshore exploration to support our Prelude floating LNG facility.

We manage three regional Emergency Response Leadership Councils for the Americas; Asia-Pacific; and Europe, the Middle East and Africa. The councils bring together experts from different teams that need to be able to work together seamlessly in case of emergencies. In 2024, the councils' annual regional conferences covered a variety of topics such as lessons learned, dynamic risk assessments, new response technology, non-fluorinated firefighting foam tactics and response preparedness.

Transport safety

Transporting large numbers of people, products and equipment poses safety risks. We seek to reduce these risks by developing best-practice standards within Shell. We also work with specialist contractors, industry bodies, non-governmental organisations and governments to find ways of reducing transport safety risks.

Road safety

In 2024, we continued to focus on strengthening our controls and implementing technologies that help us to better detect the conditions which can lead to incidents. Our SEAM Standards require Shell employees and contractors who are identified as driving on work-related business to receive defensive driver training.

In 2024, Shell employees and contractors drove around 424 million kilometres on company business, equivalent to around 10,580 times around the world. Commercial road transport accounts for most of the kilometres driven. There were 17 severe motor vehicle incidents (SMVIs). An SMVI is defined as a motor vehicle incident resulting in a fatality, serious injury or a rollover of a vehicle. There were no road transport-related fatalities in 2024.

Maritime safety

At the end of 2024, we managed and operated a global fleet of 22 tankers, liquefied natural gas carriers and the world's first liquefied hydrogen carrier. We are one of the world's largest charterers of oil and gas vessels. We work with our global maritime partners through our Maritime Partners in Safety Programme to improve the safety performance of the shipping industry.

Air safety

In 2024, for Shell-operated ventures, our owned and contracted aircraft flew around 37,000 hours and carried around 292,000 Shell and contractor passengers to destinations across the world. In addition, remotely piloted aircraft completed flights on surveys, inspections, emissions surveillance, and security and incident response.

See shell.com for more information on transport safety.

Working with others

We work with contractors and suppliers to help them understand our safety requirements. We strive to improve the energy industry's safety performance by sharing safety standards and experience with other operators, joint-venture partners, contractors and professional organisations.

Executives from Shell and our major contractor companies have collaborated on Shell's contractor safety leadership programme since 2014. The programme seeks to identify strategies and practical ways to improve a shared safety culture and achieve our Goal Zero ambition of no harm and no leaks.

Photo: A safety briefing for a maintenance and operations crew at the 731.5 megawatt Borssele III and IV offshore wind farm, the Netherlands, which is owned and operated by the Blauwwind joint venture (Shell interest 20%).

Safety performance

Tragically, two of our contractor colleagues in Shell-operated ventures lost their lives in incidents which happened in 2024 while working for us. One contractor colleague in the Netherlands lost his life in an accident at Shell Energy and Chemicals Park Moerdijk in June 2024. Another contractor colleague in India was bitten by a snake in May 2024 and subsequently passed away in January 2025.

We sadly note that a contractor who sustained burn injuries in a flash fire at our EcoOils facility in Malaysia in February 2025 passed away later that month. The investigation into the incident remained under way at the time of publishing this report.

The death in February 2024 of a contractor colleague in Nigeria, who was injured in a fire incident in December 2023, was reported in our 2023 Annual Report.

Shell is profoundly impacted by these losses. We are resolutely committed to learn from these incidents and we aim to take all necessary measures to prevent anything similar from happening again. We continue to work closely with our contractors to help build a strong safety culture at the frontline.

We use serious injury, illness and fatality (SIF) and serious injury, illness and fatality frequency (SIF-F) to measure our safety performance. SIF is defined as a serious work-related injury or illness that resulted in a fatality or a permanent impairment, which is defined as a long-term or permanent injury or illness with a significant impact on daily activities. SIF-F is calculated by dividing the number of employee and contractor SIF by 100 million working hours. SIF-F enables us to focus our investigations on the most serious incidents. The aim is to collect and analyse relevant, high-quality data that can help us improve our efforts to prevent serious injuries and fatalities.

In 2024, the number of serious work-related injuries or illnesses, including those that resulted in fatality or permanent impairment, decreased to 7 from 12 in 2023. The SIF-F was 1.5 cases per 100 million working hours compared with 2.6 in 2023.

For reporting on process safety, we combine Tier 1 and 2 events. A Tier 1 process safety event is an unplanned or uncontrolled release of any material from a process, including non-toxic and non-flammable materials, with the greatest actual consequence resulting in harm to employees, contract staff or a neighbouring community, damage to equipment, or exceeding a defined threshold quantity. A Tier 2 process safety event is a release of lesser consequence.

The number of Tier 1 and 2 operational process safety events in 2024 increased compared with 2023. There were 90 events reported during the year compared with 63 in 2023. The increase in process safety tiered events was driven by our Downstream, Renewables and Energy Solutions business. We are actively addressing these challenges by refining our operational strategies, renewing our focus on fundamentals and leveraging new technologies to return to the downward trend of previous years.

A well control incident is defined as a well set-up with fewer than two barriers in place to protect it against a release through any potential path. In 2024, there were no Level 1 or Level 2 well control incidents in Shell-operated ventures. There were also no events in 2023.

As part of our learner mindset approach, we investigate serious incidents so we can understand the underlying causes, including technical, behavioural, organisational and human factors. We share what we learn, including with contractors. We implement mitigations at the site and in the country and business where the incident occurred. We seek to turn incident findings into improved standards or better ways of working that can be applied widely across similar facilities.

Security

Our operations expose us to criminality, civil unrest, activism, terrorism, cyber disruption and acts of war that could have a material adverse effect on our business. Our security risk mitigations follow the principles of "deter, detect, delay and respond". We strengthen the security of our assets, people and operations to reduce our exposure as appropriate, for example, by conducting site security risk assessments, using journey management plans and performing travel risk assessments. We also invest in information risk management capabilities and crisis management and business continuity measures.

Shell is a member of the Voluntary Principles on Security and Human Rights (VPSHR), a multi-stakeholder initiative that gives guidance on how to respect human rights while providing security for business operations. We implement this guidance within our own operations, concentrating on countries where the risks of working with government and private security providers are identified as greatest.

Living by our values

Our core values of honesty, integrity and respect for people, as well as our focus on safety and sustainability are critical to our strategy. We are committed to doing business in an ethical and transparent way.

Ethics and transparency

Our core values underpin our work with employees, customers, investors, contractors, suppliers, non-governmental organisations, the communities where we operate and others. The Shell General Business Principles (SGBP), Code of Conduct, and Ethics and Compliance Manual are designed to help everyone at Shell to act in line with our values. The Chief Ethics and Compliance Officer (CECO) reports to the Shell Legal Director. The CECO is the custodian of Shell's Code of Conduct, and oversees ethics and compliance activities.

Shell General Business Principles

The SGBP set out our responsibilities to shareholders, customers, employees, business partners and society. They set the standards for how we conduct business with integrity, care and respect for people. As part of these principles, we commit to contribute to sustainable development. All Shell employees and contractors, and those working at joint ventures we operate, are expected to behave in line with these principles. We undertake a range of activities to help embed the SGBP and the Code of Conduct throughout the organisation. This includes training and encouraging people to discuss the dilemmas they face in their work.

Code of Conduct

Our Code of Conduct explains how employees, contractors and anyone else acting on Shell's behalf must behave to live up to our business principles. It addresses key topics including safety, anti-bribery and corruption, fair competition and human rights.

Shell employees, contractors and third parties with whom Shell has a business relationship can report any potential breaches of the Code of Conduct confidentially through several channels, including anonymously through a global helpline operated by an independent provider. We maintain a stringent no retaliation policy to protect any person making an allegation in good faith. This protection extends to those who participate in or conduct an investigation. We investigate allegations of potential violations of the Code of Conduct or applicable laws promptly and independently of the management line concerned.

In 2024, there were 2,025 reports to the Shell Global Helpline. We confirmed 343 breaches of the Code of Conduct, 367 employees or contractors were subject to disciplinary action, and of those 110 people were dismissed. Confirmed breaches include cases in which an allegation received in 2024 or a prior year was substantiated and closed.

Ethics and compliance

Shell's Ethics and Compliance Manual defines the detailed requirements for our businesses and functions to comply with laws on anti-bribery and corruption, anti-money laundering, preventing the facilitation of tax evasion, antitrust, data privacy and trade compliance.

Our employees receive guidance on the requirements listed in our Ethics and Compliance Manual – including via a dedicated website, and training modules where completion is monitored – which is reinforced by messages from Shell leaders on these requirements. This manual also includes the Protect Shell Policy, which explains Shell's position on managing antitrust risks in engagements with parties external to Shell. In response to fast-moving external antitrust developments and trends, internal guidance is continually being monitored to ensure that it remains relevant.

The type and depth of training is dependent on the level of risk. Training is repeated every three years, or more frequently for positions where the risk exposure is higher. Those considered to be higher risk for exposure to bribery include, but are not limited to, persons involved in procurement and contracting, new business development and engaging with government officials. Shell Internal Audit and Investigations (SIAI) conducts risk-based audits of potential ethics and compliance issues across its operations in support of our Group-wide ethics and compliance programme.

To help manage antitrust, competition, anti-bribery, tax evasion, anti-money laundering and trade compliance risks with adequate resources we maintain risk-based compliance programmes, a comprehensive governance structure, established reporting lines and policies and procedures, including mandatory due diligence, counterparty-screening and regular risk assessments.

Compliance in our Trading and Supply business

We maintain a Trading Compliance function managed by a Chief Compliance Officer, as regulated by the UK Financial Conduct Authority, the US Commodities Futures Trading Commission and the Securities Commission of The Bahamas, with adequate resources, including employees and a budget; a comprehensive governance structure, controls, policies and procedures and established reporting lines. Employees in Shell's trading organisation receive clear guidance through the Code of Conduct; the organisation's Trading and Supply Compliance Manual, supplemented with specific policies; a specific compliance website; mandatory training modules where completion is monitored; and other relevant training.

Shell leaders reinforce the importance of managing compliance and conduct risk in the trading organisation through monitoring risk metrics, reporting to compliance risk management and governance committees, setting clear expectations via townhall meetings and other channels, and enforcing consequences for non-compliance.

Shell's Trading Compliance function has systems for trade surveillance and monitoring communication, in addition to a dedicated conduct and ethics investigation function to assess breaches of non-compliance and thematic trends.

Data protection

With regard to the protection of personal data, we continue to invest in and develop a mature and robust privacy compliance programme based on our Binding Corporate Rules (BCRs). Every Shell company is required to manage personal data in a professional, ethical and lawful manner. We have a robust "privacy by design" process, which includes the monitoring of data privacy regulations, to help ensure that necessary controls are built into our IT systems and solutions to protect personal data.

Shell's Chief Privacy Officer serves as the Data Protection Officer (DPO) under the EU's General Data Protection Regulation (GDPR) and other applicable data privacy laws, except where there is a requirement to have a locally based DPO, such as in China and the Philippines.

We monitor new data privacy legislation and seek to ensure we have a robust impact assessment process in place for the relevant businesses. We design our operations and processes based on relevant data privacy requirements and we build controls into our processes and practices which cover the handling of personal data.

We maintain a Group-wide incident management process designed to identify and remediate data privacy breaches. The process also helps us to comply with country-level requirements for reporting breaches. Some of our acquired companies are not yet in full compliance with our BCRs. Following assessments for each of those companies, specific actions are planned and put in place to achieve compliance, with regular updates made on their progress to management.

Reputation and brand

We continually assess and monitor the external environment for potential risks to our reputation. We engage in dialogue with our key stakeholders, such as investors, industry and trade groups, academics, governments and non-governmental organisations to gain greater insights into societal expectations of the Shell Group. We make efforts to explain to our stakeholders what the Company is doing and why, the validity of our energy transition targets and our progress towards meeting them. We take proactive steps when appropriate through legal means to protect our reputation from unwarranted accusations.

Our approach to sustainability

Our commitment to contribute to sustainable development has been part of the Shell General Business Principles since 1997. We have embedded this sustainability commitment into our strategy, business processes and decision-making, supported by comprehensive governance structures, policies and standards.

Our approach to sustainability takes into account the impacts, risks and opportunities related to climate, nature, safety, ethics, people and communities – from the global to the local level. For 2024 progress in each of these areas, refer to the Our journey to net zero, Respecting nature, Powering lives, Safety, and Living by our values sections.

In anticipation of the transposition by the Netherlands of the EU Corporate Sustainability Reporting Directive (CSRD) into national law, a key development for Shell in 2024 has been the voluntary implementation of the CSRD and the accompanying European Sustainability Reporting Standards (ESRS). The CSRD requires certain European and non-European companies (including Shell plc due to its listing on Euronext Amsterdam) to make disclosures on environmental, social and governance topics in accordance with reporting standards set out in the ESRS.

For the first time, in the Annual Report and Accounts 2024, Shell includes a Sustainability Statements section (pages 341-440), prepared on a voluntary basis in accordance with the CSRD and ESRS. The Sustainability Statements incorporates Shell's EU Taxonomy disclosure, which we have published on voluntary basis since 2021. The Sustainability Statements section forms an integral part of the consolidated management report [A]. With the introduction of the Sustainability Statements, we have retired our voluntary Sustainability Report after 27 years.

[A] The consolidated management report, as referenced in the CSRD, includes the Strategic Report and Governance sections of the Annual Report and Accounts.

Photo: Shell's Board of Directors visited Raízen facilities in Brazil in April 2024.

Governance

Board oversight of sustainability including climate-related impacts, risks and opportunities T

Our governance framework is designed to effectively deliver our strategy, which is to deliver more value with less emissions, while powering lives and respecting nature.

See "Our strategy" on pages 10-13.

We describe Shell's overall governance framework on pages 159-160 and provide information on the roles of the Board of Directors, Board Committees and the Executive Committee (EC).

See "Sustainability including climate governance" on page 129.

The Board has primary oversight of the delivery of Shell's strategy and monitors performance against our longer-term business targets. This includes the management of sustainability-related impacts, risks and opportunities.

The Board periodically reviews our energy transition plans and oversees their implementation and delivery. In March 2024, Shell published the updated Energy Transition Strategy 2024, as endorsed by the Board, which included our four climate targets and ambition. The progress on these longer-term climate-related targets and ambition can be found in "Climate-related metrics and targets" on pages 93-106.

In 2024, the Board considered sustainability-related matters throughout the year, such as the assessment of sustainability-related risks and the effectiveness of corresponding risk management activities. The Board also challenged and endorsed business plans, with consideration of major capital expenditures, acquisitions and divestments. In 2024, the Board convened nine times and continued to oversee our strategy and sustainability initiatives, including at the Board off-site days in June 2024.

The nature of topics discussed by the Board in 2024 can be found in "Board activities" on pages 161-164. A full description of sustainability-related principal risks can be found in the "Risk factors" on pages 134-144.

Board committees

The Board is supported by four standing committees: the Sustainability Committee (SUSCO), the Remuneration Committee (REMCO), the Audit and Risk Committee (ARC), and the Nomination and Succession Committee (NOMCO). Sustainability-related matters are considered by the Board or the relevant committee, as appropriate. Committees, comprising Non-executive Directors, provide regular updates to the Board, including from committee meetings and stakeholder engagements.

The SUSCO reviews the performance of Shell with respect to sustainability and the non-financial elements of Shell's strategy, with a focus on nature and social elements. The SUSCO also reviews selected sustainability topics and matters of public concern. The SUSCO met four times in 2024 with sustainability-related matters discussed at each meeting. Details on focus areas and meetings in 2024 can be found in the SUSCO report on page 175.

The REMCO develops the remuneration policy and schemes for Executive Directors, EC members and the majority of Shell's employees, and sets performance conditions designed to challenge and support the EC in meeting our strategy of more value with less emissions, while respecting nature and powering lives. The REMCO met five times during 2024, with sustainability-related matters relevant to remuneration being regularly addressed. Details of the REMCO's focus areas and meetings in 2024 can be found in the Directors' Remuneration Report on pages 188-190.

The NOMCO leads the process for appointments to the Board and Senior Management and oversees the development of a diverse succession line of candidates. The NOMCO also reviews the Company's policy, targets and strategy on diversity, equity and inclusion (DE&I), and monitors the effectiveness of these initiatives. The NOMCO met four times, with sustainability-related matters regularly addressed. Details on the NOMCO's focus areas and meetings in 2024 can be found in the NOMCO report on pages 171-174.

The ARC assists the Board in fulfilling its oversight responsibilities in areas such as the effectiveness of our risk management and internal controls. The ARC also provides oversight in respect of material non-financial reporting disclosures with respect to corporate sustainability as applicable to the Company's annual reports, half-yearly reports and quarterly results releases. Significant issues identified by the business or functional owners are escalated to and reviewed by the ARC as required. The ARC met six times in 2024, with sustainability-related matters regularly addressed. Details on the ARC's focus areas and meetings in 2024 can be found in the ARC report on pages 176-187.

Performance and remuneration

Our remuneration schemes, including the annual bonus and long-term incentive awards, are designed to support Shell in achieving our strategy. Almost all employees participate in the annual bonus scheme. Executive Directors, senior executives and certain key employees participate in the long-term incentive awards, which aim to retain and ensure recipients have a greater investment in Shell's future.

In respect of 2024 outcomes, Shell's safety and energy transition-related performance metrics each form 15% of the annual bonus scorecard. A metric for "Shell's journey in the energy transition" forms 20% of the long-term incentive awards for Executive Directors and senior executives and 10% for all other employees.

The remuneration schemes are all linked to sustainability elements, including climate and safety. The Directors' Remuneration Report provides further details on key sustainability-related performance indicators.

Supporting governance committees

There are three key supporting management committees, with representatives from across Shell, which play a critical role in driving sustainability-related elements of our strategy. These committees each have direct lines of reporting to the Board and its committees.

- The Capital Investment Committee (CIC) facilitates portfolio management and capital allocation decisions, and reviews each investment opportunity that is, due to its size or risk profile, subject to approval by the CEO or the Board. These reviews ensure that risk-reward trade-offs and other defined criteria (including carbon emissions impacts) are embedded in investment decision-making. The CIC is sponsored by the CEO and is accountable to the Board. This committee is made up of senior executives, including the CEO, CFO and individual business directors.
- The Carbon Reporting Committee (CRC) is sponsored by the CFO and includes senior management representatives focusing on climate-related matters from across the businesses, Projects & Technology climate-related disciplines, and functions including Finance, Legal and Strategy. The CRC is responsible at the Group level for the Carbon Reporting Control Framework, the calculation methodologies and reporting of GHG emissions metrics, and the review and approval of external GHG-related disclosures to ensure compliance.
- The Sustainability Management Committee (SMC), established in October 2024, is sponsored by the CFO and includes senior management representatives with exposure to material sustainability areas from the businesses and functions, including Supply Chain, Finance, Legal and Human Resources. The SMC aims to provide an integrated approach to sustainability by addressing cross-directorate risks and dilemmas, and driving the co-ordination, simplification and performance improvement of nature and social sustainability topics, focusing on regulatory compliance and value protection and creation. The SMC will also maintain a forward view on emerging themes to ensure Shell's future competitiveness and resilience through the energy transition.

In addition to these committees, our network of country chairs supports the overall governance, development and deployment of sustainability-related initiatives. They facilitate the setting of each country's plans and their engagement with external stakeholders in support of our strategy.

Business assurance

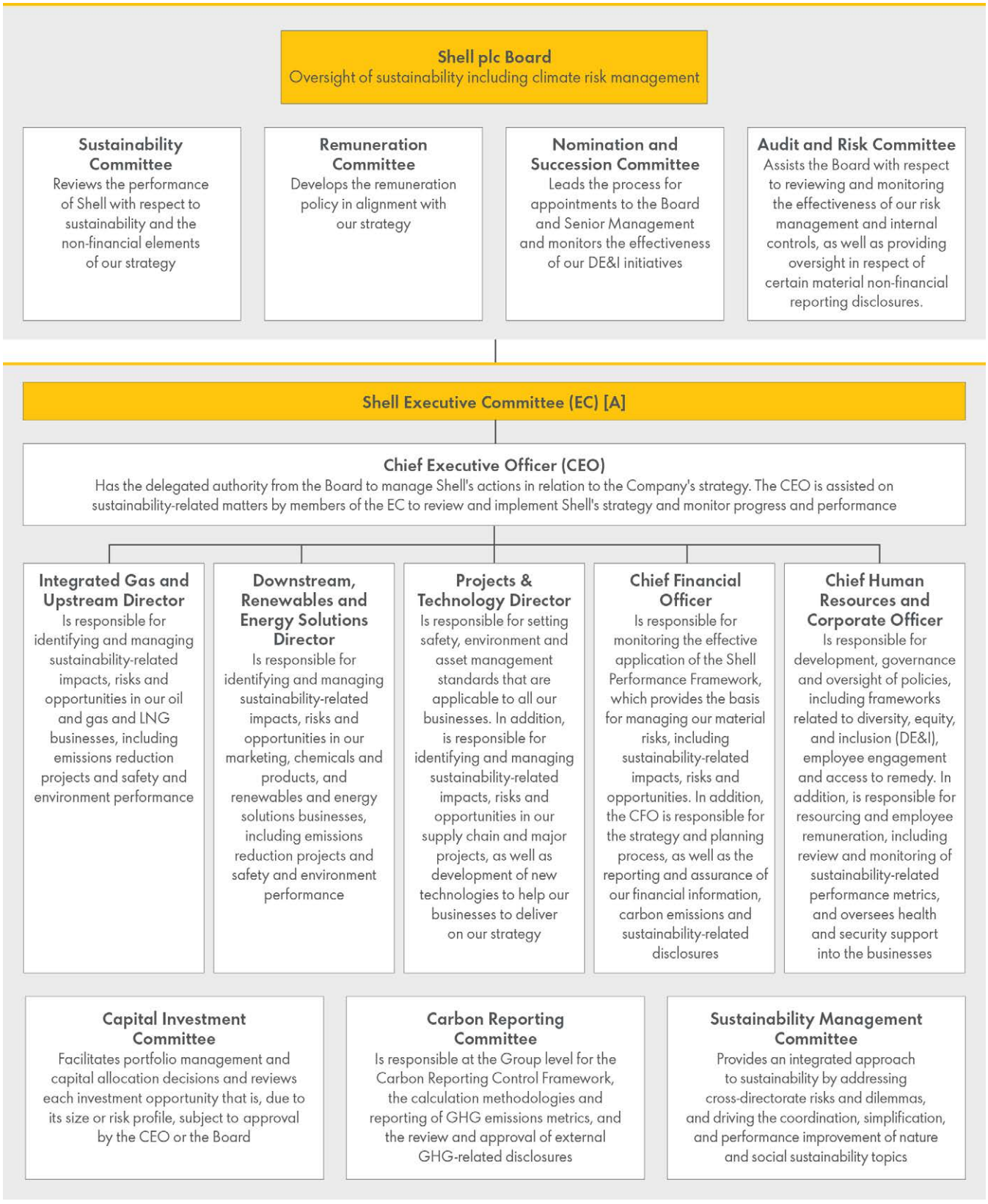
Each EC member must submit an annual assurance letter to the CEO that their business or function's activities have been conducted in accordance with the requirements set out in our Commitment and Policy on Health, Safety, Security, Environment & Social Performance (HSSE & SP) and our Safety, Environment and Asset Management (SEAM) Standards. This assurance includes an assessment of the effectiveness of our internal controls in managing sustainability-related risks.

Independent assurance

Shell Internal Audit and Investigations (SIAI) provides independent assurance of sustainability-related risks as part of its broader mandate and advises management and the Board on the effectiveness of internal controls. For further information, see "Internal Audit" on page 184.

Management's role in assessing and managing sustainability including climate-related impacts, risks and opportunities T

Sustainability including climate governance



[A] See pages 157-158 for details of changes to the Executive Committee.

Processes by which management is informed about sustainability including climate-related issues

We have several processes to help ensure that management teams can effectively monitor and manage sustainability matters. Our response to the evolving risk outlook requires transparency and clarity around our plans and actions to achieve our sustainability targets.

We have established a number of policies, standards, frameworks, internal forums and capability development programmes related to sustainability, climate change and the energy transition. These are employed at all levels of the organisation and seek to monitor, manage and review sustainability issues.

Each business and function regularly reviews its risk profile, risk responses and assurance activities throughout the year to ensure sustainability-related risks are effectively addressed and managed. These reviews and insights are also used to provide management with regular updates on the operational management of sustainability and to help us to update our plans and guide our day-to-day operational decisions and our risk response plans.

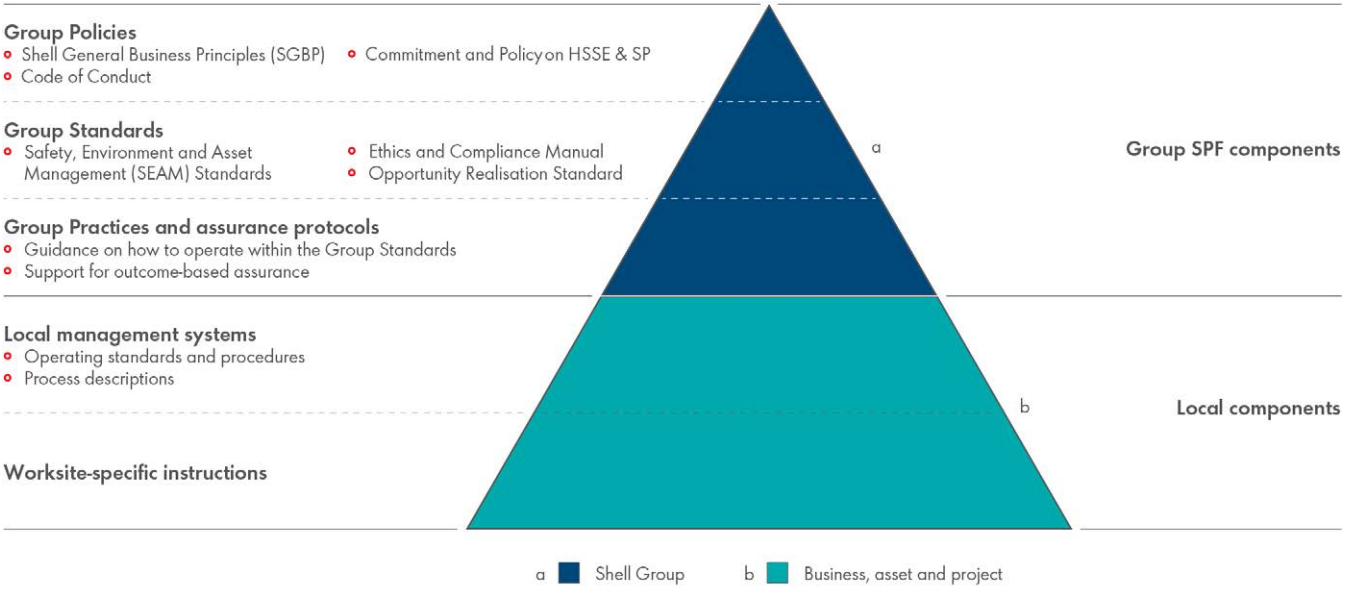
Policies and standards

Our commitment to contribute to sustainable development has been part of the Shell General Business Principles (SGBP) since 1997. These principles are supported by our Code of Conduct, which describe the behaviours expected of our employees with regard to sustainability-related matters including health, safety, security, environment and social performance (HSSE & SP), human rights and equal opportunities.

The Shell Performance Framework (SPF) is the overarching framework adopted by Shell to deliver on its strategy and business objectives. It applies to all Shell companies and provides a consistent approach for how each company in Shell operates. This framework includes our risk management and internal control procedures to support adherence to the SGBP and Code of Conduct.

See "Living by our values" on pages 125-126 and "Shell Performance Framework" on page 221.

Shell's policies and standards aligned with the Shell Performance Framework (SPF)



Commitment and Policy on HSSE & SP

The Shell Commitment and Policy on HSSE & SP is a set of core principles intended to ensure the health and safety of our workforce, minimise environmental impact, respect our neighbours and contribute to sustainable development.

SEAM Standards

We have implemented the Commitment and Policy on HSSE & SP into a set of five standards under the SPF collectively referred to as the Safety, Environment and Asset Management (SEAM) Standards. The SEAM Standards require the businesses, projects and assets we operate to identify and manage impacts, risks and opportunities so their activities can be carried out in a safe, environmentally responsible and consistent way.

We seek to avoid HSSE impacts and risks where we are able to. We follow requirements set out in our SEAM Standards to develop suitable governance structures and mitigation strategies aimed at ensuring that if an HSSE risk materialises, we avoid the worst possible consequences and have ways to remediate any environmental damage. For example, requirements in the SEAM Standards describe the key controls to be implemented to ensure safe production and equipment care, and the type of skills and training that are required for relevant staff.

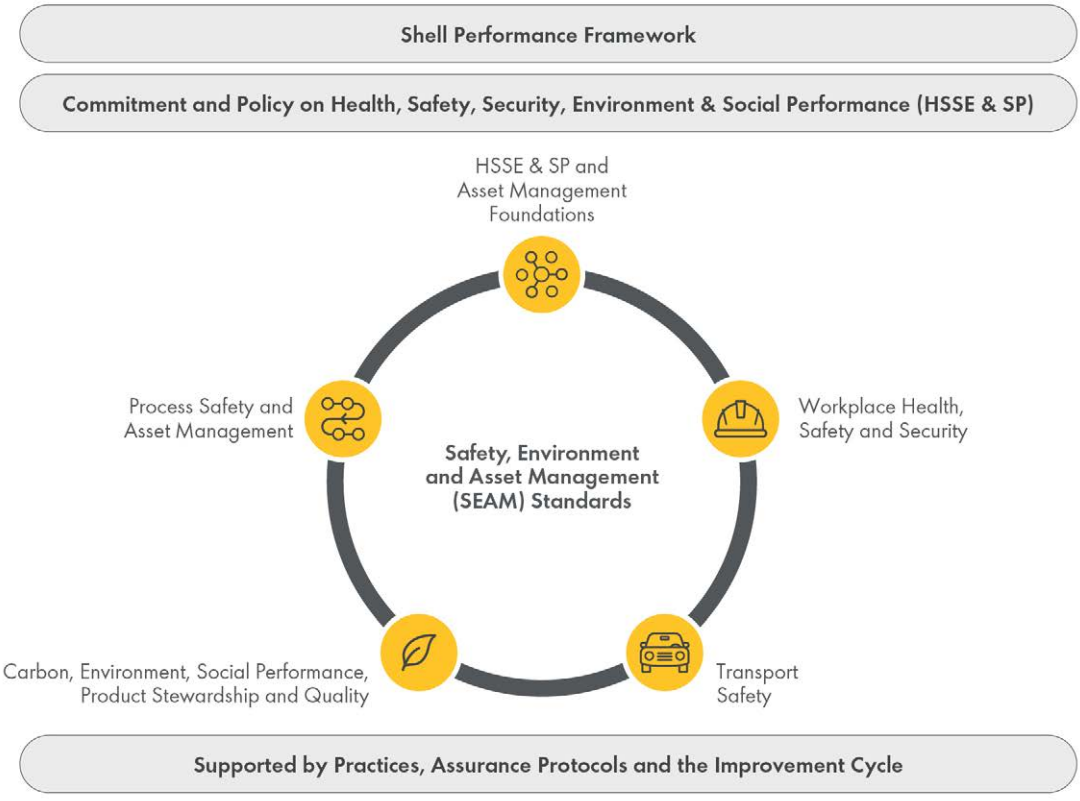
Each project, asset or business is accountable to assess which mandatory requirements are relevant based on their objectives, risk profile and activities, and apply these via their local management system. The requirements are designed to be outcome-based – meaning they define the desired results and allow the business to determine a fit-for-purpose process to achieve them. They are supported by practice documents, which share best practices for implementation, as well as assurance protocols to assist in testing the health of controls.

The requirements align with industry standards where practicable. Where applicable, we follow the most stringent of either our SEAM Standards or local regulations. In some cases, where no local regulation exists, our standards set mandatory requirements based on internationally accepted standards or practices.

Requests for exceptions from the SEAM Standards must be reviewed and advised on by subject matter experts and authorised by a senior executive for the relevant business, asset or function. Permanent exceptions are reviewed on an annual basis and are subject to conditions.

The SEAM Standards came into effect in July 2024, replacing the former HSSE & SP Control Framework and Asset Management System (AMS). The five SEAM Standards are described below.

SEAM Standards



HSSE & SP and Asset Management Foundations

This standard includes requirements intended to manage the common elements of our processes and management systems. This includes our assurance processes, HSSE & SP risk management practices, impact assessments, contractor HSSE management, performance monitoring and reporting, and learning and improvement, among others.

Carbon, Environment, Social Performance, Product Stewardship and Quality

This standard includes managing our decarbonisation targets, protecting biodiversity, preserving water quality, improving air quality and increasing circularity. It also covers the mitigation of social impacts arising from our business activities and management of any adverse effects of the products we make, buy, sell or handle.

See "Our journey to net zero" on page 80, "Respecting nature" on page 109 and "Powering lives" on page 114.

Workplace Health, Safety, and Security

This standard is about protecting workers involved in our activities from potential health and safety hazards that may cause harm to them or others. It includes worker welfare and labour rights, and contains requirements intended to protect our people and assets from adversarial activities.

Process Safety and Asset Management

This standard is about keeping hazardous substances contained in wells, pipes, tanks and vessels. In the SEAM Standards, we have integrated Asset Management work processes with Asset Integrity-Process Safety Management, which streamlines requirements and recognises the alignment of operating safely and optimising production in our assets.

Transport Safety

This standard is about reducing the safety risks posed during transport of people, products and materials by road, rail, sea or air.

See "Safety" on pages 122-124.

Sustainability impact, risk and opportunity management
We use two key processes for assessing and managing sustainability including climate-related impacts, risks and opportunities – Impact Assessments and the Hazards and Effects Management Process (HEMP). These are covered in the HSSE & SP and Asset Management Foundations Standard in alignment with our broader risk management practice in the SPF. For more information on our risk management processes, see "Risk management" on page 134.

When planning projects, we conduct impact assessments, which help us to identify and assess a project's potential impact on the environment, people and communities. Once identified, we apply a mitigation hierarchy, which is a sequence of actions to manage potential impacts and risks. For example, in a biodiversity context we seek to avoid, minimise, restore and offset.

HEMP is applied to identify, assess and manage HSSE & SP risks in our projects and operations. This systemic approach starts with the identification of potential hazards (such as working at heights) and evaluation of their likelihood and potential impact. We then implement controls (such as fall protection) to reduce the risks to as low as reasonably practicable (ALARP). In doing this, we apply the hierarchy of controls, which prioritises the elimination, substitution and isolation of hazards, before implementing engineered safeguards, administrative controls and personal protective equipment. We monitor the effectiveness of these controls via regular assurance activities.

Non-operated ventures
More than half of Shell's joint ventures are not operated by Shell. As per our SGBP, Commitment and Policy on HSSE & SP and our joint venture requirements in the HSSE & SP and Asset Management Foundations Standard, we request non-operated ventures (NOVs) to apply policies and principles materially equivalent to our own and, in relation to particular (higher impact) risks implement materially equivalent standards or standards acceptable to us. We do not have direct control over how these ventures embed sustainability in their operations, but we do seek to influence and offer support. We periodically evaluate the sustainability including climate-related impacts, risks and opportunities within our NOVs, and if an NOV does not meet our expectations, we seek to influence them to implement performance improvement plans.

Sustainability including climate through the life cycle
Our principles, policies and standards regarding sustainability, including climate, extend across the entire lifespan of a project or the facility – from initial design and construction or acquisition to operation over many years and, finally, divestment or decommissioning.

Acquisitions and divestments
Shell considers new business investment opportunities and divesting from existing opportunities in all relevant contexts including regulations, sustainability and alignment with our strategy. Sustainability considerations, including emissions, are considered during the due diligence process and in negotiations for material acquisitions and divestments. Comprehensive stakeholder engagement plans are developed, as appropriate, in parallel to the negotiations.

We take care to invest and divest responsibly and screen our transactions against multiple criteria. Before acquiring or divesting a business, we assess the counterparty's financial strength; operating culture; policies governing HSSE & SP; ethics and compliance; and, where relevant, the effectiveness of its social performance programmes.

Within each divestment proposal, we consider if the potential purchaser has the capability to manage the assets and surrounding environment. When we divest assets or exit areas, we apply well-established processes to guide our risk assessment and the transition of sustainability-related responsibilities and commitments, including those relating to health, safety, security and environment. Where applicable, we also share our emissions reduction plans with the purchaser in relation to compliance with regulations and commitments, for the purchaser's consideration.

Decommissioning and restoration
Decommissioning is part of the normal life cycle of every asset or operation. We aim to abandon wells and decommission installations in a safe, efficient, cost effective and environmentally responsible manner while meeting regulatory requirements. This includes restoring the surroundings of these installations in line with relevant legislation, while taking our own environmental standards into account. We seek to reuse, repurpose and recycle materials in decommissioning. Current and non-current decommissioning liabilities and other provisions are accounted for on our balance sheet.

See Note 25 to the "Consolidated Financial Statements" on page 297.

Working with others

Shell understands the need to work with others to achieve our commercial, environmental and social goals. We engage with local communities and other stakeholders in all our activities. We listen to their ideas and the concerns they might have so these can be addressed in the design and operation of our assets.

Shell participates in external collaborations, industry associations and partnerships. We do this in compliance with antitrust rules and regulations. These engagements are a proven way to learn and share best practices, achieve specific objectives and build trust with the many different stakeholders who have an interest in Shell. Our key sustainability, including climate, partnerships include the International Union for the Conservation of Nature (IUCN), Ipieca (the global oil and gas industry association for advancing environmental and social performance across the energy transition), the Energy Transitions Commission (ETC), Business for Social Responsibility (BSR) and World Business Council for Sustainable Development (WBCSD). These organisations, and many others, help inform our thinking on sustainability including climate-related risks, opportunities and good practices.

Non-Financial and Sustainability Information Statement

The table below constitutes Shell's Non-Financial and Sustainability Information Statement, produced to comply with sections 414CA and 414CB of the Companies Act 2006 (as amended by The Companies (Strategic Report) (Climate-related Financial Disclosure) Regulations 2022).

Non-Financial and Sustainability Information Statement

Reporting requirement	Where to read more in this Report	Page
Business model	Our strategy	10
Non-financial KPIs	Performance indicators	18
Environmental matters	Our journey to net zero Respecting nature	76 109
Sustainability and climate change and TCFD disclosures	Our journey to net zero	76
Employees	Powering lives Directors' Remuneration Report	114 188
Social matters	Powering lives	114
Respect for human rights	Powering lives	114
Anti-corruption and anti-bribery matters	Living by our values	125
Risk	Risk management and risk factors Our journey to net zero Audit and Risk Committee Report	134 76 176

Task Force on Climate-related Financial Disclosures (TCFD)

Shell supports the recommendations of the TCFD. In accordance with the UK Listing Rule 6.6.6R, and set out below, we report our climate-related financial disclosures consistent with all the TCFD Recommendations and Recommended Disclosures [A]. We also consider relevant supplemental guidance including, for example, the TCFD's additional guidance "Implementing the Recommendations of the Task Force on Climate-related Financial Disclosures" (also known as the 2021 TCFD Annex) published in October 2021 by the TCFD. We continue to align and enhance our climate-related disclosures.

TCFD disclosures index

TCFD Pillars	TCFD Recommendations	Reference
Governance	Describe the board's oversight of climate-related risks and opportunities	Board oversight of sustainability including climate-related risks and opportunities is described on page 149.
	Describe management's role in assessing and managing climate-related risks and opportunities	Management's role in assessing and managing sustainability including climate-related risks and opportunities is described on page 129.
Strategy	Describe the climate-related risks and opportunities the organisation has identified over the short, medium and long term	See page 80.
	Describe the impact of climate-related risks and opportunities on the organisation's business, strategy, and financial planning	See page 85.
	Describe the resilience of the organisation's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario	See page 86.
Risk Management	Describe the organisation's processes for identifying and assessing climate-related risks	Descriptions of the company's processes used to identify and assess risks, including climate-related risks, can be found on page 134 under the paragraphs "Risk identification" and "Risk assessment".
	Describe the organisation's processes for managing climate-related risks	Descriptions of the company's processes used to manage risks, including climate-related risks, are described on page 134 under the paragraphs "Risk Response" and "Management and Board risk reviews".
	Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organisation's overall risk management	Our climate-related risk management process follows the approach set out by the Shell Performance Framework, ensuring that it is integrated into the Company's overall risk management processes, and is described on page 134 in the section "Risk Management".
Metrics and Targets	Disclose the metrics used by the organisation to assess climate-related risks and opportunities in line with its strategy and risk-management process	See page 94.
	Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks	See page 94.
	Describe the targets used by the organisation to manage climate-related risks and opportunities and performance against targets	See page 101.

Information that supports TCFD disclosures is indicated with T.

[A] By this we mean the four recommendations and the 11 recommended disclosures set out in Figure 4 of Section C of the report entitled "Recommendations of the Task Force on Climate-related Financial Disclosures" published in June 2017 by the TCFD.

Risk management and risk factors

Risk management

How we manage risks T

The Board is responsible for establishing and maintaining procedures to manage risk, overseeing the internal control framework, and determining the nature and extent of the principal risks that Shell is willing to take to achieve its long-term strategic objectives.

Our approach to managing risk sits at the heart of the Shell Performance Framework and is embedded in the Improvement Cycle which integrates performance management, risk management, learning and improvement. This approach is designed to manage rather than eliminate the risk of failure to achieve our business objectives and covers the areas below.

See Shell Performance Framework on page 220.

Risk identification T

We employ different methods to identify risks. These include monitoring external developments, such as policy changes and new regulations. We also assess changes in the internal operating context, such as monitoring incidents that have occurred across our activities to determine if these could give rise to new risks.

We seek to identify and define risks across the spectrum of strategic, operational, conduct and culture risks. With strategic risks, we consider the current and future portfolio, examining parameters such as country concentration or exposure to higher-risk countries. We consider long-range developments to test key assumptions or beliefs in relation to energy markets. When assessing operational risks, we consider exposures across our value chain. Through conduct and culture risks, we consider how our policies and practices align with our purpose, core values and desired mindset and behaviours.

These perspectives help us to maintain a comprehensive view of the different types of risks we face and the different time horizons during which they may affect us.

Risk assessment T

To further understand the risks we face, we evaluate the impact and likelihood of each risk occurring.

When assessing the potential impact of a risk, we consider its materiality in terms of the possible financial consequences. We also consider the impacts on people, the environment and the community where we operate, our reputation and our ability to comply with external regulations. For example, the technical complexity of our operations gives rise to safety risks, which could result in injuries, loss of life, environmental harm and financial losses.

When assessing the likelihood of a risk occurring, we consider several factors, such as the level of risk exposure, our ability to prevent the risk happening and whether the risk has occurred in the past.

To support risk assessments, we also seek to establish and articulate our risk appetite, which is the level of risk that we are willing to accept in pursuit of Shell's strategy and objectives. We consider the resources available – such as financial resources, people, processes, systems and controls – that we are willing and able to allocate to manage each risk in pursuit of our objectives and the impact on Shell's overall risk profile. The financial framework, which shapes Shell's financial resilience, sets an overarching boundary condition for risk appetite. The impact and likelihood assessments, combined with risk appetite, determine the type of risk responses, such as controls and assurance activities, that may be required to manage each risk. The impact and likelihood assessments also help us to prioritise risks by understanding their significance to our strategy and objectives, individually and relative to other risks.

Risk response T

Risk responses are developed based on the assessment of impact, likelihood and risk appetite.

Possible responses include:

- taking the risk while using appropriate processes and controls to maintain the risk within risk appetite. These processes and controls include, for example, the requirements and guidance in the Shell General Business Principles, Code of Conduct and our Group Standards, which establish the mandatory rules that are to be applied in all Shell companies and operations;
- transferring the risk, for example to insurance providers where appropriate; and
- avoiding the risk, by stopping or exiting the activity that gives rise to the risk or doing the activity differently.

We use assurance activities to objectively assess the effectiveness of our risk management activities and to improve them.

Emerging risks T

Management and the Board also consider emerging risks. These are defined as risks where the scope, impact and likelihood are still uncertain, but which may have a significant effect on achieving Shell's strategy and objectives in the future. These are identified through the monitoring of external developments, the status of risk indicators, learnings from incidents and assurance findings, and the appraisal of Shell's forward-looking plans. Once identified, we undertake activities to monitor, prepare for and plan appropriate responses, should such emerging risks occur.

In 2024, management and the Board considered the pace and evolution of technological developments in areas such as artificial intelligence and quantum computing as emerging risks, given their potential impacts, for example, on cyber security and data protection. The Board also considered the risks of the evolving landscape of geopolitical tensions for the Group.

Management and Board risk reviews T

Throughout the year, each business and function regularly reviews its risk profile, risk responses and assurance activities to ensure that significant risks are managed effectively.

The Board, Board committees and management also regularly review Shell's principal risks or risk factors, conducting deeper dives on individual risks, as appropriate. These reviews also support management in assessing the effectiveness of existing risk management activities, and whether changes may be needed.

See "Other regulatory and statutory information" on pages 216-223 for other Board and Board committee responsibilities on risk management.

Risk factors

The risks discussed below could have a material adverse effect separately, or in combination, on our earnings, cash flows and financial condition. Accordingly, investors should carefully consider these risks.

Further background on each risk is set out in the relevant sections of this Report, indicated by way of cross references.

1. Portfolio risks

Risk type: ☑ Strategic risk ☐ Operational risk ☐ Conduct and culture risk

We are exposed to risks that could adversely affect the resilience of our overall portfolio of businesses. These include external risks such as macroeconomic risks, including fluctuating commodity prices and competitive forces. Our future performance depends on the successful development and deployment of new technologies that provide new products and solutions. In addition, our future hydrocarbon production depends on the delivery of integrated projects and our ability to replace proved oil and gas reserves. Many of our major projects and operations are conducted in joint arrangements or with associates. This could reduce our degree of control and our ability to identify and manage risks.

Risk description

We are exposed to various external risks, such as macroeconomic and competitive risks, and internal risks associated with growing and maturing our business opportunities through our portfolio of businesses and joint arrangements, as follows:

Macroeconomic risks:

- The prices of crude oil, natural gas, oil products and chemicals can be volatile and are affected by supply and demand, both globally and regionally. Factors that influence supply and demand include operational issues; natural disasters; pandemics; political instability; conflicts, such as the Russia-Ukraine war and the conflict in the Middle East; economic conditions, including inflation; and actions by major oil and gas producing countries. These have in the past resulted in, and similar events could in the future result in, material price fluctuations. In addition, macroeconomic, geopolitical and technological uncertainties have affected, and could affect in the future, production costs and demand for our products. Government actions may affect the prices of crude oil, natural gas, oil products and chemicals. These include price caps on gas, tariffs, the promotion of electric vehicle sales or the phasing-out of future sales of new diesel or petrol vehicles. Oil and gas prices have moved independently of each other and could do so in the future.
- Under high oil and gas prices, our entitlement to proved reserves under some production-sharing contracts has been, and could be in the future, reduced. Higher prices could also reduce demand for our products which could result in lower profitability in certain businesses in the Group, particularly in our Chemicals and Products, and Marketing businesses. Some of the reduction in demand could be permanent. Higher prices can also lead to more capacity being built, potentially resulting in an oversupplied market which would negatively affect our businesses. In the past, a high oil and gas price environment has generally led to sharp increases in costs and this could happen in the future.
- In a low oil and gas price environment, we have generated, and could in the future again generate, less revenue from our Upstream and Integrated Gas businesses, and parts of those businesses could become less profitable or incur losses. Low oil and gas prices have also resulted, and could result in the future, in the debooking of proved oil or gas reserves, if they become uneconomic in this type of price environment. Prolonged periods of low oil and gas prices, or rising costs, have resulted, and could result in the future, in projects being delayed or cancelled. Assets have been impaired in the past, and there could be impairments in the future. Low oil and gas prices have affected, and could affect in the future, our ability to maintain our long-term capital investment and shareholder distribution programmes.
- We use a range of commodity price and margin assumptions to evaluate the robustness of our capital allocation across our different projects and commercial opportunities. Due to volatility in macroeconomic conditions, our assumptions have proven to be incorrect in the past, yielding returns that are less than what we planned, and could prove incorrect in the future.

Competitive risks:

- We face competition in all our businesses. We seek to differentiate our services and products, though many of our products are competing in commodity-type markets. Accordingly, a failure to manage our costs and our operational performance could result in a material adverse effect on our earnings, cash flows and financial condition. We also compete with state-owned hydrocarbon entities and state-backed utility entities with access to financial resources and local markets. Such entities could be motivated by political or other factors in making their business decisions and may not require competitive returns. Accordingly, when bidding on new leases or projects, we could find ourselves at a competitive disadvantage or unable to obtain competitive returns.

Technology risks:

- Technology and innovation are essential to our efforts to help meet the world's energy demands competitively. If we fail to effectively develop and/or deploy new technology, products and solutions, there could be a material adverse effect on the delivery of our strategy. We operate in environments where advanced technologies are used. In developing new technologies, products and solutions, unknown or unforeseeable technological failures or environmental and health effects could harm our reputation and licence to operate or expose us to litigation or sanctions. The associated costs of new technology are sometimes underestimated. We have faced delays in developing new technology in the past, and such delays could happen again in the future. If we are unable to develop our technology and products in a timely and cost-effective manner, we may fail to realise commercially viable products.

Delivery of capital projects and our ability to replace proved oil and gas reserves:

- We face numerous challenges in developing capital projects, especially those which are integrated. Challenges include: uncertain geology; frontier conditions; drilling at significant depths, the existence and availability of necessary technology and engineering resources; supply chain constraints; the availability of skilled labour; the existence of transport infrastructure; the expiration of licences; project delays, including delays in obtaining required permits; potential cost overruns; and technical, fiscal, regulatory, political and other conditions. We may fail to assess or manage these and other risks properly. Such potential obstacles have impaired, and could in the future impair, our delivery of these projects, our ability to realise the full potential value of the project as assessed when the investment was approved, and our ability to fulfil related contractual commitments. This has led, and could in the future lead, to impairments.
- Our future oil and gas production depends on our access to new proved reserves through exploration, negotiations with governments and other owners of proved reserves and acquisitions, and through developing and applying new technologies and recovery processes to existing fields. A failure to replace proved reserves would result in an accelerated decrease of future production.

Oil and gas production available for sale

Million boe [A]

	2024	2023	2022
Shell subsidiaries	956	937	938
Shell share of joint ventures and associates	82	82	108
Total	**1,038**	**1,019**	**1,046**

[A] Natural gas volumes are converted into oil equivalent using a factor of 5,800 scf per barrel.

Proved developed and undeveloped oil and gas reserves [A][B]

Million boe [C]

	Dec 31, 2024	Dec 31, 2023	Dec 31, 2022
Shell subsidiaries	8,156	8,283	8,317
Shell share of joint ventures and associates	1,464	1,504	1,261
Total [D] [E] [F]	**9,620**	**9,787**	**9,578**
Attributable to non-controlling interest of Shell subsidiaries	370	378	365

[A] We manage our total proved reserves base without distinguishing between proved reserves from subsidiaries and those from joint ventures and associates.
[B] Includes proved reserves associated with future production that will be consumed in operations.
[C] Natural gas volumes are converted into oil equivalent using a factor of 5,800 scf per barrel.
[D] On March 13, 2025, Shell completed the sale of its Nigerian onshore subsidiary The Shell Petroleum Development Company of Nigeria Limited (SPDC) which holds a 30% interest in the SPDC JV to Renaissance. As of December 31, 2024, Shell had proved reserves of 453 million boe in SPDC.
[E] Pursuant to Shell's 2017 agreement with Canadian Natural Resources Limited, its remaining mining interest and associated synthetic crude oil reserves will be swapped for an additional 10% interest in the Scotford Upgrader and Quest CCS project. The transaction is expected to close by the end of the first half of 2025, subject to regulatory approvals. The associated proved reserves as of December 31, 2024 were 741 million barrels (of which 50% attributable to non-controlling interest).
[F] On December 5, 2024, Shell and Equinor ASA, announced the combination of their UK offshore oil and gas assets and expertise to form a new company which will be the UK North Sea's biggest independent producer. On deal completion, the new independent producer will be jointly owned by Equinor (50%) and Shell (50%) and 157 million boe (as of December 31, 2024) of Shell's proved reserves will be contributed to the new joint venture alongside proved reserves contributed by Equinor. Subsequently, Shell will report 50% of the proved reserves of the new joint venture as part of Shell's share of proved reserves from joint ventures and associates.

- The estimation of proved oil and gas reserves involves subjective judgements and determinations based on available geological, technical, contractual and economic information. Estimates can change over time because of new information from production or drilling activities, changes in economic factors, such as oil and gas prices, alterations in the regulatory policies of host governments, or other events. Estimates also change to reflect acquisitions, divestments, new discoveries, extensions of existing fields and mines, and improved recovery techniques. Published proved oil and gas reserves estimates could also be subject to correction because of errors in the application of rules and changes in regulatory guidance. Downward adjustments could indicate lower future production volumes and could also lead to impairment of assets.

Joint arrangements:

- When we are not the operator, we have less influence and control over the behaviour, performance and operating costs of joint arrangements or associates. Despite having less control, we could still be exposed to the risks associated with these operations, including environmental, reputational, legal (where joint and several liability could apply) and government sanction risks. For example, our partners or members of a joint arrangement or an associate (particularly local partners in developing countries) may be unable to meet their financial or other obligations to projects, threatening the viability of a given project. Where we are the operator of a joint arrangement, the other partner(s) could still be able to veto or block certain decisions, which could be detrimental to the joint arrangement.

If any of the risks above materialise, it could have a material adverse effect on our earnings, cash flows and financial condition.

How this risk is managed

- We maintain a diversified portfolio to manage the impact of macroeconomic volatility. We prepare an annual financial plan that tests different scenarios, and their impact on prices, on our businesses and organisation as a whole. These scenarios help us determine which issues could affect our operating environment and have implications for our strategy. They also help us to identify potential interventions to preserve our cash levels.
- We continually assess the external environment – the markets and the underlying economic, political, social and environmental drivers that shape them – to evaluate changes in competitive forces. We define multiple potential future scenarios and business environments by identifying drivers, uncertainties, enablers and constraints to our competitiveness.

- We also continually screen for new opportunities globally through our opportunity identification process. We test the resilience of our opportunities against a range of prices and costs for crude oil, natural gas, oil products and chemicals. These tests are based on short-, medium- and long-term market drivers, such as the extent and pace of the energy transition. Our opportunities are then ranked, prioritised and tested for strategic fit and value return expectations before being included in our growth funnel. We use our integrated exploration, development and project commercial and technical expertise to mature these opportunities and actively manage non-technical risks. We benchmark our projects internally and externally to make sure our proposals are competitive. We review the maturation progress of our various opportunities and perform post-investment reviews to extract learnings for implementation in future opportunities.
- Shell's Projects & Technology organisation and our businesses work together to determine the content, scope and budget for developing new technology that supports our activities. This includes partnering with start-ups and small- to medium-sized enterprises that are in the early stages of developing new technologies through our Shell Ventures and Shell GameChanger programme. New technology is developed using a maturation process, to systematically mitigate technical and commercial risks, while staying aligned with Shell's strategic ambitions and deployment commitments.
- A central group of reserves experts undertakes the primary assurance of the proved reserves bookings. A multidisciplinary committee reviews and endorses all major proved reserves bookings. Shell's Audit and Risk Committee reviews all proved reserves bookings and our CEO provides final approval. Our Internal Audit and Investigations function also provides further assurance through audits of the control framework, from which information disclosed in "Supplementary information – oil and gas (unaudited)" is obtained.
- For every major project and operation where we share control, or where we do not have control or do not operate, Shell appoints a Shell Shareholder representative, whose responsibility is to manage performance, create and protect value for Shell. The representative seeks to influence operators and other partners to adapt their practices in order to drive value appropriately and to mitigate identified risks. We perform regular risk assessments of our joint ventures, including how our joint ventures' standards align with those of Shell and seek to influence to close any gaps identified.

See "Market overview" on pages 28-30, "Other central activities" on pages 74-75, "Oil and gas information" on pages 47-54 and "Supplementary information - oil and gas (unaudited)" on pages 313-332.

2. Climate change and the energy transition

Risk type: ☑ Strategic risk ☑ Operational risk ☑ Conduct and culture risk

Rising concerns about climate change and the effects of the energy transition pose multiple risks to Shell, including declines in the demand for and prices of our products, commercial risks from growing our low-carbon business, and adverse litigation and regulatory developments. The physical impacts of climate change could also adversely affect our assets and supply chains.

Risk description

Societal demand for urgent action on climate change has increased, especially since the Intergovernmental Panel on Climate Change (IPCC) Special Report on Global Warming of 1.5°C in 2018 effectively made the more ambitious goal of the Paris Agreement to limit the rise in global average temperature this century to 1.5°C the default target for the parties to the agreement. Society's increasing focus on climate change and drive for an energy transition is contributing to a rapidly changing risk environment and a wide range of stakeholder actions against our organisation. The risks and impacts include the following:

Commercial risks:

- Changing customer sentiment favouring the use of renewable and sustainable energy products may reduce demand for our oil and gas products. An excess of fossil fuel supply over demand could in the future result in reduced fossil fuel prices. This could result in lower earnings, cancelled projects and the potential impairment of certain assets.
- If we fail to stay in step with the pace and extent of change or customers' and other stakeholders' demand for low-carbon products, this could adversely affect our reputation and future earnings. If we move much faster than society, we risk investing in technologies, markets or low-carbon products for which there may be insufficient demand. Therefore, we cannot transition too quickly, or we may offer products that customers do not want. If we are slower than society, customers may prefer a different supplier, which would reduce demand for our products adversely affecting our reputation and materially affect our financial results.
- Low-carbon technology and innovation are essential to our efforts to help meet the world's energy demands competitively. If we are unable to develop the right technologies and products in a timely and cost-effective manner, there could be an adverse effect on our future earnings. The operating margins for our low-carbon products and services have been, and could be in the future, lower than the margins we have experienced historically in our oil and gas operations.
- Certain investors have decided to divest their interest in fossil fuel companies and, if this were in to increase significantly, this could have a material adverse effect on the price of our securities and our ability to access capital markets. Some financial institutions have been aligning their portfolios to low-carbon and net-zero opportunities, driven by both regulatory and broader stakeholder pressures. A failure to decarbonise our business portfolios in line with investor and lender expectations could have a material adverse effect on our ability to access financing for certain types of projects. This could also adversely affect our partners' ability to finance their portion of costs, either through equity or debt.

Regulatory risks:

- The transition to a low-carbon economy has increased, and is likely to continue to increase the cost of compliance for our assets and/or products. Shell's annual carbon cost exposure is expected to increase over the next decade because of evolving carbon regulations. Governments may set regulatory frameworks in the future that could further restrict our exploration and production of hydrocarbons and introduce controls to limit the use of such products, which could also affect the timing and standards associated with the decommissioning of our exploration assets.
- The lack of net-zero-aligned global and national policies and frameworks increases the uncertainty around how carbon pricing and other regulatory mechanisms will be implemented in the future. This makes it harder to determine the appropriate assumptions to be taken into account in our financial planning and investment decision processes which could impair our ability to evaluate the robustness of our plans and opportunities. Changing net-zero policies and regulations could also lead to impairments of our existing oil and gas assets.

Societal risks, including litigation:

- In some countries, governments, regulators, non-governmental organisations (NGOs) and individuals have filed lawsuits seeking to hold fossil fuel companies liable for costs associated with climate change. If successful, these claims may have wide-ranging consequences, including forcing entities to hand over strategic autonomy in part to regulators, or to divest from hydrocarbon assets and technologies. We have also been subjected to climate activism that has caused disruptions to our operations and such disruptions could happen again in the future. Climate change lawsuits that have been filed against us could have a material adverse effect on our reputation. In the Netherlands, in a case against Shell brought by a group of environmental NGOs and individual claimants (referred to herein as "Milieudefensie"), the Hague District Court in 2021 found that while Shell was not acting unlawfully, Shell had the obligation to reduce the aggregate annual volume of CO_2 emissions of Shell operations and energy-carrying products sold across Scope 1, 2 and 3 by 45% (net) by the end of 2030 relative to its 2019 emissions levels. For Scope 2 and 3, this was a significant best-efforts obligation. Shell appealed that ruling. On November 12, 2024, the Hague Court of Appeal upheld Shell's appeal and dismissed the claim against Shell. In doing so, the Court of Appeal annulled the earlier judgment of the District Court in its entirety with immediate effect. On February 11, 2025, Milieudefensie filed an appeal to the Supreme Court of the Netherlands.
- Societal expectations of businesses are increasing, with a focus on business ethics, quality of products, contribution to society, safety and minimising damage to the environment. There is a focus on the role of the oil and gas sector in the context of climate change and the energy transition. This has negatively affected, and in the future could negatively affect, our brand and reputation, which could limit our ability to deliver our strategy, reduce consumer demand for our products, harm our ability to secure new resources and contracts, and restrict our ability to access capital markets or attract employees.

Physical risks:

- The physical effects of climate change, such as, but not limited to, increases in temperature, sea levels and fluctuations in water availability, could also adversely affect our assets, operations, supply chains, employees and markets.

In summary, rising climate change concerns, the pace at which we decarbonise our operations relative to society and effects of the energy transition pose multiple challenges to our business. These could result in, for example, increased costs, financial penalties, payments of financial damages in the event of losses of lawsuits, cancelled projects and potential impairment of certain assets, and adverse impacts on our supply chains and licence to operate. Individually or collectively, these risks could have a material adverse effect on our earnings, cash flows and financial condition.

How this risk is managed

Overall, we mitigate climate-related risks through our strategy to deliver more value with less emissions. This approach includes:

- reducing the GHG emissions from our operations (Scope 1 and 2) by improving our energy efficiency, deploying renewable electricity, and reducing methane emissions in our assets and projects;
- growing our LNG business while decarbonising our LNG portfolio in two main ways: by growing our portfolio with a lower carbon intensity, and continuing to invest in emissions abatement projects to reduce both CO_2 and methane emissions;
- managing our Integrated Gas and Upstream portfolio to support a balanced energy transition by cutting emissions from oil and gas production. Oil production is increasingly from our deep-water business which, through innovation, produces higher-margin and lower-carbon barrels; and
- focusing our businesses in Downstream and Renewables and Energy Solutions to offer more low-carbon energy solutions, while reducing sales of oil products.

Our investments in low-carbon solutions are subject to financial modelling and stress-testing, due diligence and risk assessments to ensure that our capital is allocated to the most attractive low-carbon projects and opportunities.

We adapt our assets and activities as necessary to enhance our resilience to the physical risks related to climate change. Many of these adaptations are based on our Safety, Environment and Asset Management (SEAM) standards and practices.

We also engage with governments on their climate policies to advocate policies that help establish regulatory frameworks to enable society to reach the goals of the Paris Agreement.

See "Our journey to net zero" on pages 76-108, "Energy Transition Strategy" on pages 77-92, "Renewables and energy solutions" on pages 68-71, Note 32 "Legal proceedings and other contingencies" on pages 308-310 and Note 4 "Climate change and energy transition" on pages 255-265.

3. Country risks

Risk type: ☑ Strategic risk ☑ Operational risk ☑ Conduct and culture risk

We operate in more than 70 countries which have differing degrees of political, legal and fiscal stability. This has exposed, and could expose, us to a wide range of political developments that could result in changes to contractual terms, laws and regulations. We also face various risks from the business and operating environment in Nigeria which could have a material adverse effect on us.

Risk description

Developments in politics, laws and regulations can and do affect our supply chains and operations. Potential impacts, which we have experienced in the past, include: forced divestment of assets; expropriation of property; cancellation or forced renegotiation of contract rights; delay of new projects; additional tariffs and taxes, including windfall taxes (especially during periods of prolonged high oil and gas prices experienced in recent years, such as 2022); restrictions on deductions and retroactive tax claims; antitrust claims; changes to trade compliance regulations; price controls; local content requirements; foreign exchange controls; changes to environmental regulations; changes to regulatory interpretations and enforcement; and changes to disclosure requirements. Many parts of the world are facing economic and fiscal challenges and growing pressure on cost-of-living standards. These issues impact our business as governments, in response to political and social pressures, pursue policies that could have a material adverse effect on our earnings, cash flows and financial condition.

The world is also facing continued geopolitical instability, including the Russia-Ukraine war, which impacts market conditions and our operations. The broader consequences of the ongoing crisis in the Middle East remain uncertain, and a wider escalation could have greater impacts on our operations in the region and beyond.

We also face risks and adverse conditions in our Nigerian operations. These include security incidents affecting the safety of our people, host communities and operations; sabotage and crude theft; ongoing litigation; limited infrastructure; challenges presented by delayed government and partner funding and budget delays; and regional instability created by militant activities. Some of these risks and adverse conditions, such as security issues affecting the safety of our people, sabotage and theft, have occurred in the past and are likely to occur in the future.

Such developments and outcomes have had, and could have in the future, a material adverse effect on our earnings, cash flows and financial condition.

How this risk is managed

- We continually monitor geopolitical developments and societal issues relevant to our interests. Our Corporate Relations function liaises with governments and other external stakeholders in countries where we operate to understand and engage on local policies and to advocate Shell's position on topics relevant to our industry. We are prepared to exit a country if we believe we can no longer operate there in accordance with our standards and applicable law, and we have done so in the past.
- With regard to the crisis in the Middle East, we have made adjustments to our operations in the region to reduce our exposure and we continue to monitor the risk of wider escalation.
- When we participate in joint ventures in Nigeria, we require that they operate in accordance with good industry practice. We seek to proportionally share risks and funding commitments with joint-venture partners. We monitor the security situation, and liaise with host communities, governmental and non-governmental organisations to help promote peaceful and safe operations. As a result of the March 13, 2025 completion of the sale of The Shell Petroleum Development Company, our exposure to these risks arising from onshore activities is expected to reduce. Shell has other businesses in Nigeria that are outside the scope of the announced divestment transaction.

See "Upstream" on pages 38-46.

4. Financial risks

Risk type: ☑ Strategic risk ☑ Operational risk ☐ Conduct and culture risk

We are exposed to treasury risks, including liquidity risk, interest rate risk, foreign exchange risk and credit risk. We are affected by the global macroeconomic environment and the conditions of financial markets. These, and changes to certain demographic factors, also impact our pension assets and liabilities.

Risk description

We are subject to differing economic and financial market conditions around the world. Political or economic instability affects such markets.

We use debt instruments, such as bonds and commercial paper, to raise significant amounts of capital. Should access to debt markets become more challenging, the impact on our liquidity could have a material adverse effect on our operations. For example, some financial institutions have started to limit their exposure to fossil fuel projects. Group financing costs could also be adversely affected by interest rate fluctuations or any credit rating deterioration.

We are exposed to changes in currency values and to exchange controls as a result of our substantial international operations. Our reporting currency is the US dollar, although, to a significant extent, we also hold assets and are exposed to liabilities in other currencies. While we undertake some foreign exchange hedging, we do not do so for all our activities. Even where hedging is in place, it may not function as expected.

We are also exposed to financial losses from credit risk. Some of our counterparties have, from time to time, not met their payment and/or performance obligations under contractual arrangements and this could happen in the future.

We operate a number of defined benefit pension plans with significant associated liabilities. Volatility in capital markets or changes to government policies could affect inflation, interest rates and investment performance, causing significant changes to the funding level of future liabilities. Changes in assumptions for mortality, retirement age or pensionable remuneration at retirement could also cause significant changes to the funding level of future liabilities. In the case of a funding shortfall, we could be required to make substantial cash contributions (depending on the applicable local regulations).

If any of the above risks materialise, they could have a material adverse effect on our earnings, cash flows and financial condition.

How this risk is managed

- We use various financial instruments for managing exposure to foreign exchange and interest rate movements. Our treasury operations are highly centralised and seek to manage credit exposures associated with our substantial cash, foreign exchange and interest rate positions.
- Our portfolio of cash investments is diversified to avoid concentrating risk in any one instrument, country or counterparty. Other than in exceptional cases, the use of external derivative instruments is confined to specialist trading and central treasury organisations that have the appropriate skills, experience, supervision, control and reporting systems.
- We maintain a committed credit facility. Management believes it has access to sufficient debt funding sources (capital markets) and to undrawn committed borrowing facilities to meet foreseeable requirements.
- We have counterparty credit risk policies in place which seek to ensure that products are sold to customers with appropriate creditworthiness. These policies include detailed credit analysis and monitoring of customers against counterparty credit limits. Where appropriate, netting arrangements, credit insurance, prepayments and collateral are used to manage credit risk.
- A pensions forum chaired by the CFO oversees Shell's input to pension strategy, policy and operation. A risk committee supports the forum in reviewing the results of assurance processes with respect to pension risk. Local trustees manage the funded defined benefit pension plans and set the strategic asset allocation for the plans, including the extent to which currency, interest rate and inflation risks are hedged, and the contributions paid are based on independent actuarial valuations that align with applicable local regulations. Pension fund liquidity is managed by holding appropriate liquid assets and maintaining credit facilities. Where appropriate, transactions to transfer pension liabilities to third parties are also considered.

See "Liquidity and capital resources" on pages 24-27 and Note 24 "Retirement benefits" on page 290.

5. Trading risks

Risk type: ☐ Strategic risk ☑ Operational risk ☑ Conduct and culture risk

We are exposed to market, regulatory and conduct risks in our trading operations.

Risk description

Commodity trading is an important component of our business which involves processing, managing and monitoring many transactions across different countries, exposing us to operational risks, market risks including commodity price risk, regulatory and conduct risks. We use physical and financial instruments, including derivatives such as futures and options to hedge market risks. It is not possible to eliminate all market risks we are exposed to. Therefore, our hedging has occasionally not performed as expected and may not do so in the future. We utilise commodity trading to optimise commercial margins from market price movements. Consequently, this activity could expose us to the risk of incurring significant losses if prices develop unfavourably.

Our commodity trading entities are subject to many regulations, including requirements for standards of conduct. Due to the high volume of trades we execute, commodity trading gives rise to the risk of ineffective controls, failure in oversight of trading activities and a risk that traders could deliberately operate outside our internal operating limits. These risks have materialised in the past, and could materialise in the future, resulting in financial losses. The rapidly changing regulatory environment also creates a risk of insufficient, delayed or incorrect implementation of new regulatory requirements or changes to existing regulatory requirements. Violations of such regulatory requirements could expose us and our employees to regulatory fines.

If any of the above risks materialise, it could harm our reputation and licence to operate and have a material adverse effect on our earnings, cash flows and financial condition.

How this risk is managed

- We operate with procedures and policies designed to ensure that trading risks are managed within a prescribed control framework. The framework sets out authorised limits and requirements that trading should only be performed by employees with the appropriate skills and experience. Senior management regularly reviews these authorised trading limits. In addition, a department that is independent from our traders monitors our market risk exposures daily, using techniques such as value-at-risk alongside other risk metrics.
- We maintain a Trading Compliance function managed by a Chief Compliance Officer, as regulated by the UK Financial Conduct Authority, the US Commodities Futures Trading Commission and the Securities Commission of The Bahamas, with adequate resources, including employees and a budget; a comprehensive governance structure, controls, policies and procedures and established reporting lines. Shell's Trading Compliance function has systems for trade surveillance and monitoring communication, in addition to a dedicated conduct and ethics investigation function to assess breaches of non-compliance and thematic trends.
- Employees in Shell's trading organisation receive clear guidance through the Code of Conduct; the organisation's Trading and Supply Compliance Manual, supplemented with specific policies; a specific compliance website; mandatory training modules where completion is monitored; and other relevant training.
- Shell leaders reinforce the importance of managing compliance and conduct risk in the trading organisation through monitoring risk metrics, reporting to compliance risk management and governance committees, setting clear expectations via townhall meetings and other channels, and enforcing consequences for non-compliance.

See "Liquidity and capital resources" on pages 24-27 and "Living by our values" on page 125-126.

6. Health, safety, security and the environment

Risk type: ☐ Strategic risk ☑ Operational risk ☐ Conduct and culture risk

The nature of our operations exposes us, and the communities in which we work, to a wide range of health, safety, security and environment risks.

Risk description

The health, safety, security and environment (HSSE) risks to which we and the communities in which we work are potentially exposed cover a wide spectrum, given the geographical range, operational diversity and technical complexity of our operations. These risks include the effects of safety lapses, natural disasters (including weather events and earthquakes) and pandemic diseases. If a major safety risk materialises, such as an explosion or hydrocarbon leak or spill, which we have experienced in the past, this could result in injuries, loss of life, environmental harm (including biodiversity loss), disruption of business activities, loss or suspension of permits, loss of our licence to operate and loss of our ability to bid on mineral rights.

Social instability, criminality, civil unrest, terrorism, cyber disruption and acts of war have also negatively impacted, and could negatively impact, our operations, our assets, our employees and contractors, and the communities in which we operate. Risks which have materialised in the past include: acts of terrorism; acts of criminality, including maritime criminality and piracy; crude oil theft, illegal oil refining, sabotage of pipelines and militant activities in Nigeria; cyber espionage or disruptive cybersecurity attacks; conflicts and civil unrest; malicious acts carried out by individuals within Shell, such as data exfiltration; and environmental and climate activism (including disruptions by NGOs especially in the USA and north-west Europe). For example, activists have boarded and protested on our vessels, assets and work sites, such as the Penguins floating production and storage and offloading (FPSO) vessel in 2023.

Financial losses and remediation costs from safety and environmental incidents are partially, but not fully, covered by our Group insurance companies (wholly owned subsidiaries) or third-party insurers. Accordingly, in the event of a significant incident, we may have to meet our obligations without access to proceeds from third-party insurers. We have in the past incurred adverse impacts and costs from events, such as Hurricane Ida in 2021.

Our operations are subject to extensive HSSE regulatory requirements that often change and are expected to become more stringent over time, particularly in the areas of environment. Governments could require operators to adjust their future production plans, affecting production and costs. We have incurred, and could incur, significant extra costs in the future because of the need to comply with such requirements. Due to past violations of laws and regulations, and other regulatory obligations, we have incurred significant costs such as fines, penalties, clean-up costs (including decommissioning and restoration costs) and costs associated with third-party claims. We also face the risk of increasing costs from changes in regulations and technical standards relating to decommissioning and restoration.

The above risks have threatened, and can threaten, the safe operation of our assets and the transport of our products. They have harmed, and can harm, the well-being of our people, inflict loss of life and injuries, and disrupt our operational activities. They can also damage the environment and negatively impact our reputation.

If a significant HSSE risk materialises, it could have a material adverse effect on our earnings, cash flows and financial condition.

How this risk is managed

- We follow requirements set out in our SEAM Standards to develop suitable governance structures and mitigation strategies aimed at ensuring that if an HSSE risk materialises, we avoid the worst possible consequences and have ways to remediate any environmental damage. For example, our standards describe the key controls required to ensure safe production and equipment care; and the type of skills and training that are required for relevant employees. We routinely practise our emergency response plans for potential events, such as spills or fire.
- Decommissioning is part of the normal life cycle of every asset or operation. We aim to close and dispose of installations in a safe, efficient, cost effective and environmentally responsible manner while meeting regulatory requirements. This includes restoring the surroundings of these installations in line with relevant legislation, while taking our own environmental standards into account. We seek to reuse, repurpose and recycle materials in decommissioning. Current and non-current decommissioning and other provisions are accounted for on our balance sheet.
- When planning projects, we conduct impact assessments, which help us to identify and assess a project's potential impact on the environment, people and communities. Once identified, we apply a mitigation hierarchy, which is a sequence of actions to manage potential impacts and risks. For example, in a biodiversity context we seek to avoid, minimise, restore and offset.
- Our security risk mitigations follow the principles of "deter, detect, delay and respond". We strengthen the security of our assets, people and operations to reduce our exposure as appropriate, for example, by conducting site security risk assessments, using journey management plans and performing travel risk assessments. We also invest in information risk management capabilities and crisis management and business continuity measures.
- Our insurance companies are adequately capitalised and they may transfer risks to third-party insurers where economical, effective and relevant.

See "Safety" on pages 122-124, "Our approach to sustainability" on pages 127-133, "Corporate" on pages 72-73 and Note 32 "Legal proceedings and other contingencies" on pages 308-310.

7. Information technology and cybersecurity risks

Risk type: ☐ Strategic risk ☑ Operational risk ☑ Conduct and culture risk

We rely heavily on information technology systems in our operations.

Risk description

Shell operates a globally integrated model with a strong focus on digitalising business processes and an increasing dependence on information technology (IT) systems for our core operations, including for the management of personal data. As a result, we are heavily reliant on secure, affordable and resilient IT services provided both in-house and by third parties. Rapid advancements in digital technologies, including artificial intelligence (AI) and quantum computing, are ongoing. If we do not effectively harness these technologies, our business operations may become less efficient, and our product offerings could lose their competitive edge, ultimately hindering our ability to execute our strategy.

Externally, we observe developments impacting our IT and cybersecurity risk profile: a worsening of the cybersecurity threat landscape represented by increasing volumes of sophisticated cybersecurity attacks, technology developments, geopolitical conflicts and increases in regulations across the markets in which Shell operates (such as the EU AI Act). As an organisation we have experienced, and expect to experience in the future, cybersecurity threats such as denial-of-service, ransomware, hacktivism and attacks from nation state actors that target critical energy infrastructure. We have also experienced and could in the future be exposed to non-malicious IT incidents. Across our supply chain, our suppliers, customers and business partners encounter similar cybersecurity threats and incidents. Cybersecurity incidents affecting us or our supply chain have impacted, and could impact, our operations, the security of our assets, the safety of our employees, and have a societal impact on the delivery and maintenance of critical energy infrastructure. Cybersecurity incidents frequently involve personal data breaches causing harm or potential harm to our customers, employees and stakeholders such as investors. In addition, such incidents have disrupted, and could disrupt, operations, cause reputational damage and possibly lead to significant regulatory fines. Cybersecurity incidents could therefore have a material adverse effect on our customers, staff and stakeholders thereby negatively affecting operations and our reputation. Accordingly, cyber security incidents could have a material adverse effect on our earnings, cash flows and financial condition.

How this risk is managed

- Our Information and Digital Technology Standard sets out a structured approach to identify, assess and mitigate IT and cyber security risks. Our global integrated Information Risk Management (IRM) and cyber defence teams are staffed with cyber security professionals that monitor, assure and help defend our global IT and data landscape. As all our employees play a role in protecting our IT systems; we give them training on data protection, regulatory compliance and regularly run cyber security awareness campaigns and simulations on how to respond to cyber-attacks.
- We evaluate emerging digital technologies with our businesses annually to align on their impact and necessary remediation, considering the value and opportunities they present, as well as their incremental risks.
- We continuously track cyber-attacks, threat intelligence, cyber legislation (including the EU AI Act) and vulnerabilities relevant to our IT landscape and have a well-structured incident management and escalation process in place.
- The security of IT services, where operated by external IT companies, is managed through contractual clauses and additionally through formal supplier assurance reports for critical IT services.
- With regard to the protection of personal data, we continue to invest in and maintain a mature and robust global data privacy compliance programme based on our Binding Corporate Rules (BCRs). Further details are explained in risk 8.

See "Other central activities" on pages 74-75.

8. Litigation and regulatory compliance

Risk type: ☐ Strategic risk ☑ Operational risk ☑ Conduct and culture risk

Violations of laws carry fines and could expose us and/or our employees to criminal sanctions and civil suits. We have faced, and could also face, the risk of litigation and disputes worldwide.

Risk description

We must comply with various laws. These include laws related to antitrust, competition, anti-bribery, tax evasion, anti-money laundering, trade compliance (including sanctions) and data privacy.

We have been fined in the past for violations of antitrust and competition laws, including fines by the EU Directorate-General for Competition (DG COMP). We have also, in the past, settled with the US Securities and Exchange Commission regarding violations of the US Foreign Corrupt Practices Act (FCPA). As a result, any future conviction of Shell or any of its operated joint arrangements or associates for violations of EU competition law or the FCPA could result in significantly larger fines and have a material adverse effect on us, including, but not limited to, damage to our reputation, resulting litigation, regulatory actions and criminal sanctions or penalties, and could potentially adversely affect our licence to operate. Violation of antitrust laws is a criminal offence in many countries, and individuals can be imprisoned or fined. In certain circumstances, directors may receive director disqualification orders.

We are also subject to "trade compliance", the umbrella term that we use for various national and international laws designed to regulate the movement of items across national boundaries and restrict or prohibit trade, financial flows and other dealings with certain parties, countries and territories. For example, the EU, the UK and the USA continue to impose comprehensive sanctions on countries and territories such as Syria, North Korea and Crimea and other territories in Eastern Ukraine. The USA continues to have comprehensive sanctions against Iran and Cuba. The EU, the UK and some other nations such as Canada and Australia continue to maintain targeted sanctions against Iran. Countries around the world continue to impose sanctions and trade controls against Russia over its full-scale invasion of Ukraine. Intergovernmental co-operation in this area has increased and there is growing pressure to enforce existing sanctions globally. Abiding by all the laws and regulations on trade compliance is often complex and challenging because of factors such as: the expansion of sanctions; the frequent addition of prohibited parties as other measures; the number of markets in which we operate; the risk of differences in how jurisdictions apply sanctions; and the large number of transactions we process. Shell has voluntarily self-disclosed potential violations of sanctions in the past. Any violation of sanctions could lead to loss of import or export privileges and significant penalties on, or prosecution of, Shell and/or its employees.

The protection and lawful use of personal data is of increasing importance to our licence to operate, given the significant increase in digital solutions provided to Shell's customers and business partners. We process personal data in all our operations. A failure to protect personal data or a failure to use it only for lawful and ethical purposes could result in significant harm to those individuals whose personal data we process. In addition, regulatory action by way of significant fines of up to 4% of Shell Group annual turnover and other enforcement actions such as orders to cease processing personal data may be imposed depending on the law in scope. There is a related risk of harm to our reputation potentially causing the loss of trust of existing and potential customers, stakeholders, regulators and employees. We have notified a number of data privacy regulators of personal data breaches and have had fines issued against us and this could happen in the future.

We also face the risk of litigation and disputes worldwide. For example, Shell (in its capacity as previous owner of SPDC) and various subsidiaries and associates operating in Nigeria are parties to various environmental, non-environmental and contractual disputes brought in the courts of Nigeria, the USA and England. Nederlandse Aardolie Maatschappij B.V. (NAM), a joint venture between Shell and ExxonMobil (50%:50%) has also settled claims for physical damage to property caused by earthquakes induced by historical production from the Groningen gas field, and remains financially responsible insofar as the costs corresponded to NAM's liability. From time to time, social and political factors play a role in unprecedented and unanticipated judicial outcomes that could adversely affect Shell. Non-compliance with policies and regulations could result in regulatory investigations, litigation and, ultimately, sanctions. Certain governments and regulatory bodies have, in Shell's opinion, exceeded their constitutional authority by attempting unilaterally to amend or cancel existing agreements or arrangements; failing to honour existing contractual commitments; and seeking to adjudicate disputes between private litigants. Certain governments have also adopted laws and regulations that could potentially conflict with other countries' laws and regulations, potentially subjecting us to criminal and civil sanctions. It is also now common for persons or corporations allegedly injured by violations of laws to sue for damages.

Violations of laws carry fines, which we have been subject to, and could be subject to in the future, and which could expose us and/or our employees to criminal sanctions, civil suits and other consequences, such as debarment and the revocation of licences. Accordingly, violation of laws, including those noted above, litigation and disputes could harm our reputation and could have a material adverse effect on our earnings, cash flows and financial condition.

How this risk is managed

- Our Legal and Tax functions are organised globally and support our business lines in seeking to ensure compliance with local laws and fiscal regulations and proactively filing claims where warranted to protest unfair practices.
- To help manage antitrust, competition, anti-bribery, tax evasion, anti-money laundering and trade compliance risks with adequate resources we maintain risk-based compliance programmes, a comprehensive governance structure, established reporting lines and policies and procedures, including mandatory due diligence, counterparty-screening and regular risk assessments.
- Our employees receive guidance on the requirements listed in our Ethics and Compliance Manual – including via a dedicated website, and training modules where completion is monitored – which is reinforced by messages from Shell leaders on these requirements. This manual also includes the Protect Shell Policy, which explains Shell's position on managing antitrust risks in engagements with parties external to Shell. In response to fast-moving external antitrust developments and trends, internal guidance is continually being monitored to ensure that it remains relevant.
- With regard to the protection of personal data, we continue to invest in and develop a mature and robust privacy compliance programme based on our Binding Corporate Rules (BCRs). Every Shell company is required to manage personal data in a professional, ethical and lawful manner. We have a robust "privacy by design" process, which includes the monitoring of data privacy regulations, to help ensure that necessary controls are built into our IT systems and solutions to protect personal data.

See "Living by our values" on pages 125-126 and Note 32 "Legal proceedings and other contingencies" on pages 308-310.

9. Reputation and risks to our licence to operate

Risk type: ☑ Strategic risk ☐ Operational risk ☑ Conduct and culture risk

An erosion of our business reputation could have a material adverse effect on our brand, on our ability to secure new hydrocarbon or low-carbon opportunities, to access capital markets, and to attract and retain people, and on our licence to operate.

Risk description

Our reputation is an important asset. Real or perceived failures of governance or regulatory compliance or a perceived lack of understanding of how our operations affect surrounding communities and the environment could harm our reputation.

Societal expectations of companies are high, with a focus on business ethics, quality of products, contribution to society, safety and minimising negative impact on the environment and people, including human rights. There is ongoing focus on the role of oil and gas companies in the context of climate change and the energy transition. NGOs continue to challenge Shell's licence to operate through activities to block or delay projects and by bringing legal actions, diverting our resources and challenging trust. In key markets, we continue to see protests at external events such as our Annual General Meeting. We also continue to receive claims brought by NGOs. Our brand communications have been subject to challenge from advertising regulators in the UK and the Netherlands, following complaints received from members of the public. During prolonged periods of high oil and gas prices, the oil and gas industry has been accused in the past and could in the future be accused of profiteering from higher fuel and electricity prices and therefore impacting living costs. The materialisation of these risks has at times negatively affected, and could affect in the future, our brand, which could limit our ability to deliver our strategy; reduce consumer demand for our branded and non-branded products; harm our ability to secure new resources, partnerships and contracts; and restrict our ability to access capital markets or attract staff.

Individually or collectively, these risks could negatively affect our reputation and licence to operate and, accordingly, could have a material adverse effect on our earnings, cash flows and financial condition.

How this risk is managed

- The Shell General Business Principles (SGBP) set out our responsibilities to shareholders, customers, employees, business partners and society. They set the standards for how we conduct business with integrity, care and respect for people. As part of these principles, we commit to contribute to sustainable development. All Shell employees and contractors, and those at the joint ventures we operate, are expected to behave in line with these principles. We undertake a range of activities to help embed the SGBP and the Code of Conduct throughout the organisation. This includes training and encouraging people to discuss the dilemmas they face in their work. Shell employees, contractors and third parties with whom Shell has a business relationship can report any potential breaches of the Code of Conduct confidentially through several channels, including anonymously through a global helpline operated by an independent provider.
- We continually assess and monitor the external environment for potential risks to our reputation. We engage in dialogue with our key stakeholders, such as investors, industry and trade groups, academics, governments and non-governmental organisations to gain greater insights into societal expectations of the Shell Group. We make efforts to explain to our stakeholders what the Company is doing and why, the validity of our energy transition targets and our progress towards meeting them.
- Human rights are fundamental to Shell's core values of honesty, integrity and respect for people. Respect for human rights is embedded in the Shell General Business Principles and our Code of Conduct.
- We take proactive steps when appropriate through legal means to protect our reputation from unwarranted accusations.

See "Living by our values" on pages 125-126.

10. Our people and culture

Risk type: ☐ Strategic risk ☐ Operational risk ☑ Conduct and culture risk

The successful delivery of our strategy is dependent on our people and on a culture that aligns to our goals and reflects the changes we need to make as part of the energy transition.

Risk description

Shell's culture is defined as the shared values, practices and beliefs of its employees. All these elements need to act in harmony to create our desired culture and ensure successful and sustained performance in line with our strategy. Our culture is influenced by decisions on organisational structure and accountabilities, people and skills, how work is done using processes and systems, and the mindset and behaviours that exist.

As the energy system transforms and we reshape our portfolio, elements of our culture will need to adapt. For example, we will have to develop new skills, and adapt our processes and systems, which, in some areas, will need to be different from those required for our traditional oil and gas businesses. We will have to continually leverage our learner mindset to anticipate and respond to changes in the external market. However, we will also need to retain our core values of honesty, integrity and respect for people to help ensure trust and openness in how we do business and help ensure our employees feel valued and perform at their best.

If we fail to maintain a culture that aligns with our strategy, this could harm our reputation and have a material adverse effect on our earnings, cash flows and financial condition.

How this risk is managed

- The SGBP, Code of Conduct and Ethics and Compliance Manual help everyone at Shell act in line with our values.
- Delivery of our desired outcomes is pursued by leveraging our Performance Culture, i.e., the shared values, practices and beliefs of our employees. This is influenced by decisions on our structure and accountability; people and skills; processes and systems; and mindset and behaviours. Our mindset and behaviours emphasise psychological safety.
- We have ambitions around diversity, equity and inclusion and monitor these on a regular basis. We also continually assess our culture and employee engagement through tools such as the annual Shell People Survey.
- People development remains a priority for our organisation. We proactively identify skill and capability gaps for traditional and emerging businesses; offer training to address these gaps; and if needed recruit talent externally to add to the skills and experiences of our workforce. To enable our leaders to lead this change, we support them through targeted interventions including leadership development and coaching.

See "Powering lives (People)" on pages 115-119 and "Living by our values" on pages 125-126.

Investors should also consider the following, which could limit shareholder remedies.

11. Other (generally applicable to an investment in securities)

The Company's Articles of Association determine the jurisdiction for shareholder disputes. This could limit shareholder remedies.

Risk description

Our Articles of Association generally require that all disputes between our shareholders in such capacity and the Company or our subsidiaries (or our Directors or former Directors), or between the Company and our Directors or former Directors, be exclusively resolved by arbitration in London, the United Kingdom. Our Articles of Association also provide that, if this provision were to be determined invalid or unenforceable for any reason, the dispute could only be brought before the courts of England and Wales. Accordingly, the ability of shareholders to obtain monetary or other relief, including in respect of securities law claims, could be determined in accordance with these provisions.

Principal decisions and stakeholders

Section 172(1) statement

The Board of Directors, having considered the matters set out in section 172(1)(a) to (f) of the Companies Act 2006 (S172), confirm in good faith that the Directors have acted in a way that they consider would most likely promote the success of the Company for the benefit of its members as a whole.

This S172 statement discloses how the Directors took into account the interests of Shell's wider stakeholders in the Board's decision-making process. The level of information disclosed is consistent with the size and the complexity of Shell's businesses and focuses on matters of strategic importance to Shell.

General confirmation of directors' duties

Shell's Board has a clear and robust corporate governance framework, which sets out certain financial and strategic thresholds which need to be triggered for matters to be considered and approved by the Board. The corporate governance framework covers matters reserved for the Board, delegations to its committees and delegations to the Executive Directors. The Manual of Authority sets out the delegation and approval process across the broader business.

All Directors, upon joining Shell, have participated in induction training and are provided with ongoing guidance covering the regulatory requirements of their role, including, but not limited to, S172.

When making decisions, each Director ensures that they act in the way they consider, in good faith, would most likely promote Shell's success for the benefit of its members as a whole, and in doing so has regard (among other matters) to the issues set out below.

S172 Factor	Key examples
(a) The likely consequences of any decision in the long term	The Directors understand the business and the evolving and challenging environment in which we operate, including the challenges of the global energy transition. In 2024, the Board continued with its oversight of Shell's strategy, including with respect to the Energy Transition Strategy 2024 (ETS24). The Board focused on financial strength and discipline with a dynamic approach to our portfolio of assets, with consideration given to key stakeholders and the likely long-term impact of any decision. During the year, the Board reiterated its commitment to Shell's energy transition strategy and reflected on the challenges to be faced by Shell in the next phase of this strategy, given the shifting macroeconomic and geopolitical context. We put customers at the centre of our strategy, innovating the products customers need as they seek to decarbonise. See pages 10-13 for more on our strategy. The Directors recognise there are significant complexities in relation to Board decision-making, given differing societal and stakeholder views about our operations and the intricacies associated with the evolving energy transition. Accordingly, the Directors have considered S172 and made their decisions in good faith relating to Shell's strategy having regard for the long-term sustainable success of the Company.
(b) Interests of employees	Shell employees are fundamental and core to our business model and the safe delivery of our strategic ambitions. The success of our business depends on attracting, retaining, developing and motivating talented employees. The Directors consider and assess the implications of relevant decisions on employees and the wider workforce. The Directors seek to ensure that Shell remains a responsible employer, including with respect to pay and benefits, fairness (including gender pay gap reporting, see pages 118), promotion of equal opportunity (information on Shell's diversity, equity and inclusion is detailed on page 117-119), health and safety issues, and the workplace environment. The Directors regularly engage with employees and the wider workforce (a summary of engagements is provided on pages 167-168), as well as consider the annual employee survey, the Shell People Survey (the most recent is detailed on page 117). The Directors recognise that our pensioners also remain important stakeholders.
(c) Fostering the company's business relationships with suppliers, customers and others	To deliver our strategy we require strong, mutually beneficial relationships with suppliers, customers, governments, national oil companies and joint-venture partners. Shell seeks to promote and apply certain general principles in such relationships. The Board continues to review Shell's approach to suppliers, which is set out in the Shell Supplier Principles. In 2024, the Board reviewed steps taken with suppliers and supply chains to combat modern slavery and human trafficking. More detail on Shell's Modern Slavery Act Statement is set out on page 217. The businesses continually assess the priorities related to customers and those with whom we do business, with the Board engaging with the businesses on these topics, for example, within the context of business strategy updates and investment proposals. The Directors also receive updates on a variety of topics that indicate how these stakeholders have been engaged. These updates include information provided by the Projects & Technology function on suppliers and joint-venture partners, with respect to items such as project updates and supplier contract management. Businesses also provide information, as relevant, on customers and joint-venture partners in relation to business strategies, projects and investment or divestment proposals. The CEO provides a comprehensive update to the Board on material business and external developments, including external engagements, at each main Board meeting.
(d) Impact of operations on the community and environment	It is integral to our decision-making that we reflect on our impact on the community and the environment. To help it make decisions, the Board receives information on various topics including, for example, the net carbon intensity target, proposals to invest or divest, and business strategy reviews. The information also goes into Group-level overviews, such as updates on safety and environment performance, reports from the Chief Ethics and Compliance Officer, and reports from the Chief Internal Auditor. In 2024, the Board held meetings with Shell's in-country stakeholders, including a staff engagement during the Board's off-site in the Netherlands, which also included dialogue with Mark Rutte, who was Dutch prime minister at the time. Engaging with staff enabled the Board to maintain and strengthen its connection with Shell's businesses, workforce and other local stakeholders. It also provided the opportunity to gain a deeper understanding of Shell's reputation, role and contribution within the communities where we operate. See "Understanding and engaging with our stakeholders" on pages 165-166, and the Board committee reports.
(e) Maintaining a reputation for high standards of business conduct	Shell aims to meet the world's growing need for more and cleaner energy solutions in economically, environmentally and socially responsible ways. The Board periodically reviews and approves clear frameworks – such as the Shell General Business Principles, Shell's Code of Conduct, specific Ethics and Compliance manuals, the Ethical Decision-Making Framework and the Modern Slavery Act Statement – to ensure that high standards are maintained in Shell businesses and in Shell's business relationships. Complemented by the ways the Board is informed and monitors ethics and compliance with relevant governance standards, this helps to ensure that Board decisions and the actions of Shell companies both promote and maintain high standards of business conduct.
(f) Acting fairly between members of the company	After weighing up all relevant factors, the Directors consider which course of action best enables delivery of our strategy in the long-term interests of the Company, taking into consideration the effect on stakeholders. In doing so, our Directors act fairly as between the Company's members but are not required to balance the Company's interests with those of other stakeholders.

Culture

The Board plays an important role in establishing, assessing and monitoring our desired culture and how it is embedded in our values, attitudes and behaviours, including in our activities and stakeholder relationships. For example, the Board has established honesty, integrity and respect for people as Shell's core values. (For further information see "Living by our values" on pages 125-126). The Shell General Business Principles and Code of Conduct help everyone at Shell to act in line with these values and comply with relevant laws and regulations. The Shell Commitment and Policy on Health, Safety, Security, Environment & Social Performance applies across Shell and is designed to help protect people and the environment. (For further information, see "Safety" on pages 122-124).

To achieve our strategic goals, we need to adapt our mindset and behaviours as we navigate the increasing complexity of the world around us. At Shell, we seek to have a culture that encourages the attitudes and behaviours we believe will help us succeed:

- We deliver results: We own our performance, to power progress together. We deeply understand our business, we deliver the basics brilliantly, simplifying and improving every day. We are disciplined in meeting our promises even when the unexpected happens. Our values and care enable our competitive performance.
- We learn and adapt: we have the courage to raise the bar. With our Learner Mindset we navigate uncertainty and adapt in a rapidly changing world. We value and grow our expertise. We learn from setbacks to accelerate progress, knowing we have each other's back.
- We're one team: We win together, driven by our common outcomes. We listen to different views to make better data-based decisions and then we commit. We are the partner of choice by working together with our customers, communities and countries to consistently deliver our promises.
- We care: We care about each other, our work, our values, goal zero, ethics and DE&I. This builds trust, sets us apart and is key to our performance. Because we care, we are honest with each other to grow to be our best and deliver commercial outcomes.

The Board considers the Shell People Survey to be an important tool for measuring employee engagement, motivation, affiliation, and commitment to Shell. With consistently high response rates, it provides valuable insights into employee views. It also helps the Board understand how the survey's outcomes are being used to strengthen Shell culture and values.

Stakeholder engagement (including employee engagement)

The Board recognises the important role Shell has in many societies and is deeply committed to public collaboration and stakeholder engagement. The Board strongly believes that Shell will only succeed by working together with customers, governments, business partners, investors, and other stakeholders.

We continue to build on our long track record of working with others, such as investors, industry and trade groups, universities, governments, non-governmental organisations (NGOs) and, in some appropriate instances, our competitors through our joint-venture operations or industry bodies. We believe that working together and sharing knowledge and experience with others offers us greater insight into our business. We also appreciate our long-term relationships with our investors and acknowledge the positive impact of ongoing engagement and dialogue.

The guidance on preparing information, proposals or discussion items for the Board asks for these materials to include considerations of the views, interests, and concerns of stakeholders and how management addressed them. This helps to strengthen the Board's knowledge of how the broader business undertakes significant levels of stakeholder engagement. The Terms of Reference for our Sustainability Committee (SUSCO) include, within the committee's remit: review and consider external stakeholder perspectives on sustainability issues of relevance to the Group's business, and review selected sustainability topics and matters of public concern, such as biodiversity, water and human rights.

The Board also engaged with certain stakeholders directly, to understand their views. The Board draws upon Shell's substantial in-house expertise by periodically receiving input from economics and policy experts on key political and economic themes, with some updates being presented to the Board each quarter.

See "Understanding and engaging with our stakeholders" on pages 165-166.

Information on how the Directors have engaged with employees can be found on pages 167-168 and in the "Powering lives" section on page 117. The tables below include examples of how Directors have considered the interests of Shell employees and the resulting outcomes.

Principal decisions

In this section, we outline some of the principal decisions made by the Board over the year. We explain how the Directors have engaged with or in relation to key stakeholder groups and how stakeholder interests were considered in decision-making.

To remain concise, we have categorised our key stakeholders into seven groups. Where appropriate, each group is considered to include both current and potential stakeholders. The groups are:

- investor community;
- employees/workforce/pensioners;
- our customers;
- regulators/governments;
- NGOs/civil society stakeholders/academia/think tanks;
- communities; and
- suppliers/strategic partners.

Board decisions

We define principal decisions taken by the Board as decisions taken in 2024 that are of a strategic nature and significant to any of our key stakeholder groups. As outlined in the UK Financial Reporting Council (FRC) Guidance on the Strategic Report, we include decisions related to capital allocation and dividend policy.

How were stakeholders considered

We describe how regard was given to the likely long-term consequences of the decision, including how stakeholders were considered during the decision-making process.

What was the outcome

We describe which accommodations or mitigations were made, if any, and how Directors have considered different interests, and what factors they took into account.

Strategic updates

Strategy
As part of the Board's continuing oversight of Shell's strategy, the Directors receive and discuss regular strategy updates including feedback from stakeholder engagements with management, investors, the media, climate activists and internal staff.

How stakeholders were considered
Energy Transition Progress and Strategy
In March 2024, the Board approved a report (the Shell Energy Transition Strategy 2024 (ETS24)) building on ETS21 which was created with the aim of helping investors and society obtain a better understanding of how Shell is addressing the risks and opportunities of the energy transition. ETS24 was put to shareholders for an advisory vote at the 2024 Annual General Meeting (AGM), with 78.03% of shareholders that voted supporting the resolution.

Both before and after the 2024 AGM, the Chair, CEO and some members of the Executive Committee engaged with key stakeholders to understand their views and opinions on Shell's progress on its ETS. They engaged with our largest shareholders and offered further opportunities to discuss Shell's progress on its ETS and to understand the reasons behind various voting decisions. The Chair also engaged directly with our large institutional shareholders during his investor roadshow in September 2024.

What was the outcome
Energy Transition Progress and Strategy
There are differing views about Shell's ambition, targets and strategy to become a net-zero emissions energy business by 2050. Shell continued its dialogue with its stakeholders on the progress of its ETS, and the Board recognises the different views of each Shell stakeholder group. The Board continues to listen, learn and adapt as Shell delivers against its strategy, with consideration given to the long-term success of the organisation, as well as the interests of Shell's shareholders, customers and wider society. More information on the outcome of discussions following the 2024 shareholder advisory vote can be found on page 165.

Discussions with stakeholders and feedback from those engagements were integral to the preparation of ETS24, and the Board's approval of this strategy. In this Annual Report, we strive to provide information on Shell's progress on its energy transition strategy, along with our ambitions, targets and the clarifications our stakeholders are seeking.

Insights into Shell's operations in the Netherlands
In June 2024, the Board held its annual off-site in-person over the course of three days in the Netherlands, providing for a number of engaging and interactive events with both internal and external stakeholders. A summary of the Board off-site is provided on page 161. The key focus areas related to Shell's strategy and presence in the Netherlands.

Staff engagements
As part of the Board off-site, the Board and Executive Committee had the opportunity to engage and speak directly with staff about their experience within the Shell businesses in the Netherlands. For further information on the engagement with our workforce see "Board activities" and "Workforce engagement" on page 162 and pages 167-168.

Board off-site
Through engagements with multiple stakeholders, the Board:
- experienced the breadth of businesses that Shell has in the Netherlands;
- met with a diverse cross-section of staff and leaders in the Netherlands and considered their feedback from the engagements that took place;
- built awareness of the local context and risks;
- considered geopolitical contexts in connection with the energy transition;
- considered key external perspectives connected to Shell's energy transition ambitions, targets and strategy; and
- discussed core elements of our strategy with key customers, government officials and other stakeholders.

Financial strength, cash allocation including shareholder distributions

The Board considered cash flow, the macro environment and business performance in 2024 against 2023. The Board also considered management's view of the outlook for the Group's performance, and reviewed the financial framework with specific focus on shareholder distributions. Directors approved several proposals with the aim of delivering value to shareholders and increasing shareholder distributions through a combination of progressive dividends and share buybacks.

How stakeholders were considered
A number of considerations underpinned each proposal, with proposals discussed and reviewed at certain points throughout the year. These considerations took account of the macro environment, robust business performance and outlook, the strength of the balance sheet, capital discipline, feedback from advisers and feedback from other stakeholders.

What was the outcome
In relation to the decisions to increase distributions to shareholders, the Board and management considered the views of stakeholders, the strength of the Company's balance sheet and the need to continue to invest in the future of energy. The form, and timing, of distributions to shareholders were announced throughout 2024, alongside the publication of the quarterly results.

During 2024, the Board approved share buybacks of $14 billion, and a further $3.5 billion of share buybacks was announced on January 30, 2025.

Approval of Shell's detailed Operating Plan 2025-2027 (OP24)

The approval of OP24 followed an in-depth review by the Board of proposals on capital allocation, capital investment outlook, competitive outlook, operating expenses, return on average capital employed, shareholder distributions and alignment with net carbon intensity targets. In the December 2024 Board meeting, OP24 was approved.

How stakeholders were considered
OP24 discussions included ensuring credible metrics, scenario testing and understanding the risks and levers to enable delivery of the near- and long-term targets which were set out at CMD23. Meeting commitments made to investors is critical to building trust and confidence with our external stakeholders. The Directors also considered the financial strength of the organisation, the macroeconomic environment, and the continued heightened geopolitical risks as a result of the Russia-Ukraine war and conflict in the Middle East. The Directors and Executive Committee balanced the priorities in the financial framework, including capital and operating expenditure commitments towards the energy transition alongside increased shareholder distributions, maintaining balance sheet strength, aspired credit ratings and greenhouse gas target tracking. The plan was discussed extensively and reviewed thoroughly. Responses from investors and discussions with equity and debt market analysts were also presented to the Board for consideration. The Board asked management questions about the flexibility of OP24 in the event of various energy transition scenarios.

What was the outcome
Following extensive review and discussion, the overall outcome of this decision was an Operating Plan that the Board believes is robust against various scenarios and features strong optionality if needed. In particular, the Board assured itself that, as these decisions were taken, OP24 flexibly demonstrated pathways to enable delivery of Shell's near- and long-term targets.

We recognise that stakeholder opinions differ on the approach towards the energy transition. OP24 is based on society's demand for products and services. OP24 also supports Shell in maintaining a reputation for high standards of business conduct and health, safety, security and environment issues. It maintains the approach to employee remuneration and benefits to pensioners. OP24 also seeks to reward our investors with returns, a strong balance sheet and capital discipline, and to maintain the long-term financial strength of the Company to invest in more and cleaner energy and meet the current and future needs of society.

Investing in new business, acquisitions and divestments, and closures

Over the course of the year, the Board considered and approved new opportunities and projects and proposed divestments or closures.

How stakeholders were considered

The Board considered the impact of decisions related to new business opportunities and divesting from existing opportunities in the context of sustainability, supply, regulations and carbon intensity. Critically, the Board reviewed the alignment of various proposals with Shell's strategy. Particular focus was given to potential benefits of certain divestments, including their potential to: create returns for shareholders; further strengthen the balance sheet; de-risk future cash flow; and avoid significant additional capital investment. As part of the discussions, the Board considered the strategic drivers for the intended divestments, including the Scope 1 and 2 emissions of each asset, anticipated regulatory changes expected to lead to value erosion, and any value opportunities afforded by the macro environment.

As part of each proposal, the respective business unit will undertake effective due diligence on prospective purchasers from a financial, reputational, as well as operating philosophy standpoint to ensure future obligations are met, or suitable mitigating measures are in place, to protect Shell and its people.

Within each divestment proposal, the Board considered if the Company was being a responsible seller of its assets and if the purchasers have the capability to manage our assets/people appropriately. Staff matters are explicitly considered during negotiations and the due diligence process for acquisitions and divestments. Comprehensive engagement plans are developed as appropriate in parallel to the negotiations.

As part of Shell's intercompany approval process, the following investments or divestments were discussed and supported by the Board.

Investment in Ruwais LNG
The investment in the Ruwais LNG project in Abu Dhabi taking a 10% equity interest.

Atapu Consortium final investment decision on Atapu-2 project in Brazil
The Atapu Consortium's investment in the Atapu-2 project, a second floating production, storage and offloading (FPSO) vessel to be deployed at the Atapu field. Further information on this can be found on page 39.

Investment in Bonga North, Nigeria
Investment in Bonga North, a deep-water project off the coast of Nigeria.

Project Manatee final investment decision
Investment in an undeveloped gas field in the East Coast Marine Area (ECMA) in Trinidad and Tobago.

Expansion of the CSPC petrochemical facility, China
Expansion of the petrochemicals facility owned by CSPC in Daya Bay, Huizhou, China.

Creation of joint venture for operations in the North Sea
The creation of a joint venture between Equinor UK Ltd, a subsidiary of Equinor ASA, and Shell U.K. Limited, a subsidiary of Shell plc which combines their UK offshore oil and gas assets and expertise.

What was the outcome

Investment in Ruwais LNG project in Abu Dhabi
The Board approved the investment in the Abu Dhabi National Oil Company's (ADNOC) Ruwais liquefied natural gas (LNG) project in Abu Dhabi through a 10% participating interest. In Board discussions the Board considered, among other things, the position of minority shareholders, the relationship between Shell and ADNOC and the strategic fit for the project in delivering low carbon LNG.

Atapu Consortium final investment decision on Atapu-2 Project in Brazil's Pre-Salt
The Board approved the progression of the Atapu-2 project enabling the consortium to take a final investment decision. In Board discussions, the Board considered the strategic alignment and status of the project noting suppliers and supply chain constraints, contractor capacity and the position of the consortium partners.

Bonga North Investment
The Board approved the investment in Bonga North, a deep-water project off the coast of Nigeria. In Board discussions, the Board considered among other things, the alignment of the opportunity with the strategy and the in-country stakeholders.

Project Manatee final investment decision
The Board approved investment in an undeveloped gas field in the East Coast Marine Area (ECMA) in Trinidad and Tobago. During Board discussions, the Board considered relations with the government in Trinidad and Tobago, customers, the carbon competitiveness of the project and geopolitical risk in the region and noted the project's alignment with the strategy.

Expansion of the CSPC petrochemical facility, China
The Board approved the proposed expansion of the CSPC petrochemicals facility enabling CSPC to take a final investment decision to build a third ethylene cracker and a new facility which will produce high-performance specialty chemicals. In Board discussions the Board noted the relations with government and the customer needs and the alignment of the investment with the strategic intent.

Creation of joint venture with Equinor for operations in the North Sea
The Board approved the execution of the commercial agreements with Equinor to progress the proposed joint venture. During Board discussions, the Board noted that the incorporated joint venture (JV) will be set up to sustain UK oil and gas production and security of energy supply in the UK and considered the impact on staff, communities, government relations and other stakeholders.

Strategic Report signed on behalf of the Board

/s/ Sean Ashley

Sean Ashley
Company Secretary
March 25, 2025