



ZF Group

2024 CDP Corporate Questionnaire 2024

Important: this export excludes unanswered questions

This document is an export of your organization's CDP questionnaire response. It contains all data points for questions that are answered or in progress. There may be questions or data points that you have been requested to provide, which are missing from this document because they are currently unanswered. Please note that it is your responsibility to verify that your questionnaire response is complete prior to submission. CDP will not be liable for any failure to do so.

[Terms of disclosure for corporate questionnaire 2024 - CDP](#)

Contents

C1. Introduction.....	8
(1.1) In which language are you submitting your response?	8
(1.2) Select the currency used for all financial information disclosed throughout your response.	8
(1.3) Provide an overview and introduction to your organization.....	8
(1.4) State the end date of the year for which you are reporting data. For emissions data, indicate whether you will be providing emissions data for past reporting years. .	9
(1.4.1) What is your organization’s annual revenue for the reporting period?	10
(1.5) Provide details on your reporting boundary.	10
(1.6) Does your organization have an ISIN code or another unique identifier (e.g., Ticker, CUSIP, etc.)?	10
(1.7) Select the countries/areas in which you operate.	12
(1.24) Has your organization mapped its value chain?	13
(1.24.1) Have you mapped where in your direct operations or elsewhere in your value chain plastics are produced, commercialized, used, and/or disposed of?	14
C2. Identification, assessment, and management of dependencies, impacts, risks, and opportunities.....	16
(2.1) How does your organization define short-, medium-, and long-term time horizons in relation to the identification, assessment, and management of your environmental dependencies, impacts, risks, and opportunities?.....	16
(2.2) Does your organization have a process for identifying, assessing, and managing environmental dependencies and/or impacts?	17
(2.2.1) Does your organization have a process for identifying, assessing, and managing environmental risks and/or opportunities?.....	18
(2.2.2) Provide details of your organization’s process for identifying, assessing, and managing environmental dependencies, impacts, risks, and/or opportunities.	18
(2.2.7) Are the interconnections between environmental dependencies, impacts, risks and/or opportunities assessed?	25
(2.3) Have you identified priority locations across your value chain?.....	26
(2.4) How does your organization define substantive effects on your organization?	27
(2.5) Does your organization identify and classify potential water pollutants associated with its activities that could have a detrimental impact on water ecosystems or human health?.....	29
(2.5.1) Describe how your organization minimizes the adverse impacts of potential water pollutants on water ecosystems or human health associated with your activities.	30

C3. Disclosure of risks and opportunities 32

(3.1) Have you identified any environmental risks which have had a substantive effect on your organization in the reporting year, or are anticipated to have a substantive effect on your organization in the future?..... 32

(3.1.1) Provide details of the environmental risks identified which have had a substantive effect on your organization in the reporting year, or are anticipated to have a substantive effect on your organization in the future. 33

(3.1.2) Provide the amount and proportion of your financial metrics from the reporting year that are vulnerable to the substantive effects of environmental risks. 47

(3.2) Within each river basin, how many facilities are exposed to substantive effects of water-related risks, and what percentage of your total number of facilities does this represent?..... 50

(3.3) In the reporting year, was your organization subject to any fines, enforcement orders, and/or other penalties for water-related regulatory violations? 56

(3.5) Are any of your operations or activities regulated by a carbon pricing system (i.e. ETS, Cap & Trade or Carbon Tax)? 57

(3.6) Have you identified any environmental opportunities which have had a substantive effect on your organization in the reporting year, or are anticipated to have a substantive effect on your organization in the future?..... 57

(3.6.1) Provide details of the environmental opportunities identified which have had a substantive effect on your organization in the reporting year, or are anticipated to have a substantive effect on your organization in the future. 57

(3.6.2) Provide the amount and proportion of your financial metrics in the reporting year that are aligned with the substantive effects of environmental opportunities. ... 75

C4. Governance 78

(4.1) Does your organization have a board of directors or an equivalent governing body?..... 78

(4.1.1) Is there board-level oversight of environmental issues within your organization? 78

(4.1.2) Identify the positions (do not include any names) of the individuals or committees on the board with accountability for environmental issues and provide details of the board's oversight of environmental issues. 79

(4.2) Does your organization's board have competency on environmental issues?..... 83

(4.3) Is there management-level responsibility for environmental issues within your organization? 84

(4.3.1) Provide the highest senior management-level positions or committees with responsibility for environmental issues (do not include the names of individuals). 85

(4.5) Do you provide monetary incentives for the management of environmental issues, including the attainment of targets? 88

(4.5.1) Provide further details on the monetary incentives provided for the management of environmental issues (do not include the names of individuals). 89

(4.6) Does your organization have an environmental policy that addresses environmental issues?..... 91

(4.6.1) Provide details of your environmental policies. 92

(4.10) Are you a signatory or member of any environmental collaborative frameworks or initiatives? 97

(4.11) In the reporting year, did your organization engage in activities that could directly or indirectly influence policy, law, or regulation that may (positively or negatively) impact the environment?	98
(4.11.1) On what policies, laws, or regulations that may (positively or negatively) impact the environment has your organization been engaging directly with policy makers in the reporting year?	99
(4.11.2) Provide details of your indirect engagement on policy, law, or regulation that may (positively or negatively) impact the environment through trade associations or other intermediary organizations or individuals in the reporting year.	101
(4.12) Have you published information about your organization’s response to environmental issues for this reporting year in places other than your CDP response?	110
(4.12.1) Provide details on the information published about your organization’s response to environmental issues for this reporting year in places other than your CDP response. Please attach the publication.	110

C5. Business strategy..... 112

(5.1) Does your organization use scenario analysis to identify environmental outcomes?	112
(5.1.1) Provide details of the scenarios used in your organization’s scenario analysis.	112
(5.1.2) Provide details of the outcomes of your organization’s scenario analysis.	131
(5.2) Does your organization’s strategy include a climate transition plan?	133
(5.3) Have environmental risks and opportunities affected your strategy and/or financial planning?	135
(5.3.1) Describe where and how environmental risks and opportunities have affected your strategy.....	135
(5.3.2) Describe where and how environmental risks and opportunities have affected your financial planning.	139
(5.4) In your organization’s financial accounting, do you identify spending/revenue that is aligned with your organization’s climate transition?	140
(5.9) What is the trend in your organization’s water-related capital expenditure (CAPEX) and operating expenditure (OPEX) for the reporting year, and the anticipated trend for the next reporting year?	141
(5.10) Does your organization use an internal price on environmental externalities?	141
(5.10.1) Provide details of your organization’s internal price on carbon.....	142
(5.11) Do you engage with your value chain on environmental issues?	144
(5.11.1) Does your organization assess and classify suppliers according to their dependencies and/or impacts on the environment?.....	146
(5.11.2) Does your organization prioritize which suppliers to engage with on environmental issues?.....	148
(5.11.5) Do your suppliers have to meet environmental requirements as part of your organization’s purchasing process?	149
(5.11.6) Provide details of the environmental requirements that suppliers have to meet as part of your organization’s purchasing process, and the compliance measures in place.	150

(5.11.7) Provide further details of your organization’s supplier engagement on environmental issues.	164
(5.11.9) Provide details of any environmental engagement activity with other stakeholders in the value chain.	180
C6. Environmental Performance - Consolidation Approach	186
(6.1) Provide details on your chosen consolidation approach for the calculation of environmental performance data.	186
C7. Environmental performance - Climate Change.....	187
(7.1) Is this your first year of reporting emissions data to CDP?.....	187
(7.1.1) Has your organization undergone any structural changes in the reporting year, or are any previous structural changes being accounted for in this disclosure of emissions data?	187
(7.1.2) Has your emissions accounting methodology, boundary, and/or reporting year definition changed in the reporting year?	187
(7.2) Select the name of the standard, protocol, or methodology you have used to collect activity data and calculate emissions.	188
(7.3) Describe your organization’s approach to reporting Scope 2 emissions.	188
(7.4) Are there any sources (e.g. facilities, specific GHGs, activities, geographies, etc.) of Scope 1, Scope 2 or Scope 3 emissions that are within your selected reporting boundary which are not included in your disclosure?	189
(7.5) Provide your base year and base year emissions.	189
(7.6) What were your organization’s gross global Scope 1 emissions in metric tons CO2e?	198
(7.7) What were your organization’s gross global Scope 2 emissions in metric tons CO2e?	199
(7.8) Account for your organization’s gross global Scope 3 emissions, disclosing and explaining any exclusions.	201
(7.8.1) Disclose or restate your Scope 3 emissions data for previous years.	214
(7.9) Indicate the verification/assurance status that applies to your reported emissions.	218
(7.9.1) Provide further details of the verification/assurance undertaken for your Scope 1 emissions, and attach the relevant statements.	219
(7.9.2) Provide further details of the verification/assurance undertaken for your Scope 2 emissions and attach the relevant statements.	220
(7.10) How do your gross global emissions (Scope 1 and 2 combined) for the reporting year compare to those of the previous reporting year?.....	222
(7.10.1) Identify the reasons for any change in your gross global emissions (Scope 1 and 2 combined), and for each of them specify how your emissions compare to the previous year.	222
(7.10.2) Are your emissions performance calculations in 7.10 and 7.10.1 based on a location-based Scope 2 emissions figure or a market-based Scope 2 emissions figure?.....	228
(7.12) Are carbon dioxide emissions from biogenic carbon relevant to your organization?	228

(7.12.1) Provide the emissions from biogenic carbon relevant to your organization in metric tons CO2.	228
(7.15) Does your organization break down its Scope 1 emissions by greenhouse gas type?	229
(7.15.1) Break down your total gross global Scope 1 emissions by greenhouse gas type and provide the source of each used global warming potential (GWP).	229
(7.16) Break down your total gross global Scope 1 and 2 emissions by country/area.	231
(7.17) Indicate which gross global Scope 1 emissions breakdowns you are able to provide.	245
(7.17.1) Break down your total gross global Scope 1 emissions by business division.	245
(7.20) Indicate which gross global Scope 2 emissions breakdowns you are able to provide.	248
(7.20.1) Break down your total gross global Scope 2 emissions by business division.	248
(7.22) Break down your gross Scope 1 and Scope 2 emissions between your consolidated accounting group and other entities included in your response.	252
(7.23) Is your organization able to break down your emissions data for any of the subsidiaries included in your CDP response?	253
(7.29) What percentage of your total operational spend in the reporting year was on energy?	253
(7.30) Select which energy-related activities your organization has undertaken.	253
(7.30.1) Report your organization's energy consumption totals (excluding feedstocks) in MWh.	254
(7.30.6) Select the applications of your organization's consumption of fuel.	257
(7.30.7) State how much fuel in MWh your organization has consumed (excluding feedstocks) by fuel type.	257
(7.30.9) Provide details on the electricity, heat, steam, and cooling your organization has generated and consumed in the reporting year.	265
(7.30.14) Provide details on the electricity, heat, steam, and/or cooling amounts that were accounted for at a zero or near-zero emission factor in the market-based Scope 2 figure reported in 7.7.	267
(7.30.16) Provide a breakdown by country/area of your electricity/heat/steam/cooling consumption in the reporting year.	302
(7.45) Describe your gross global combined Scope 1 and 2 emissions for the reporting year in metric tons CO2e per unit currency total revenue and provide any additional intensity metrics that are appropriate to your business operations.	324
(7.52) Provide any additional climate-related metrics relevant to your business.	325
(7.53) Did you have an emissions target that was active in the reporting year?	326
(7.53.1) Provide details of your absolute emissions targets and progress made against those targets.	326
(7.53.2) Provide details of your emissions intensity targets and progress made against those targets.	335
(7.54) Did you have any other climate-related targets that were active in the reporting year?	345
(7.54.1) Provide details of your targets to increase or maintain low-carbon energy consumption or production.	345

(7.54.2) Provide details of any other climate-related targets, including methane reduction targets.	348
(7.54.3) Provide details of your net-zero target(s).....	354
(7.55) Did you have emissions reduction initiatives that were active within the reporting year? Note that this can include those in the planning and/or implementation phases.	356
(7.55.1) Identify the total number of initiatives at each stage of development, and for those in the implementation stages, the estimated CO2e savings.	356
(7.55.2) Provide details on the initiatives implemented in the reporting year in the table below.	357
(7.55.3) What methods do you use to drive investment in emissions reduction activities?	361
(7.74) Do you classify any of your existing goods and/or services as low-carbon products?.....	363
(7.74.1) Provide details of your products and/or services that you classify as low-carbon products.	364
(7.79) Has your organization canceled any project-based carbon credits within the reporting year?	366

C9. Environmental performance - Water security 367

(9.1) Are there any exclusions from your disclosure of water-related data?.....	367
(9.2) Across all your operations, what proportion of the following water aspects are regularly measured and monitored?	367
(9.2.2) What are the total volumes of water withdrawn, discharged, and consumed across all your operations, how do they compare to the previous reporting year, and how are they forecasted to change?.....	374
(9.2.4) Indicate whether water is withdrawn from areas with water stress, provide the volume, how it compares with the previous reporting year, and how it is forecasted to change.	377
(9.2.7) Provide total water withdrawal data by source.	378
(9.2.8) Provide total water discharge data by destination.....	382
(9.2.9) Within your direct operations, indicate the highest level(s) to which you treat your discharge.	384
(9.2.10) Provide details of your organization’s emissions of nitrates, phosphates, pesticides, and other priority substances to water in the reporting year.	386
(9.3) In your direct operations and upstream value chain, what is the number of facilities where you have identified substantive water-related dependencies, impacts, risks, and opportunities?	387
(9.5) Provide a figure for your organization’s total water withdrawal efficiency.	388
(9.13) Do any of your products contain substances classified as hazardous by a regulatory authority?.....	389
(9.13.1) What percentage of your company’s revenue is associated with products containing substances classified as hazardous by a regulatory authority?	389
(9.14) Do you classify any of your current products and/or services as low water impact?	390

(9.15) Do you have any water-related targets?	390
(9.15.1) Indicate whether you have targets relating to water pollution, water withdrawals, WASH, or other water-related categories.	390
(9.15.2) Provide details of your water-related targets and the progress made.	392

C11. Environmental performance - Biodiversity 397

(11.2) What actions has your organization taken in the reporting year to progress your biodiversity-related commitments?	397
(11.3) Does your organization use biodiversity indicators to monitor performance across its activities?	397
(11.4) Does your organization have activities located in or near to areas important for biodiversity in the reporting year?	397

C13. Further information & sign off 401

(13.1) Indicate if any environmental information included in your CDP response (not already reported in 7.9.1/2/3, 8.9.1/2/3/4, and 9.3.2) is verified and/or assured by a third party?	401
(13.1.1) Which data points within your CDP response are verified and/or assured by a third party, and which standards were used?	401
(13.2) Use this field to provide any additional information or context that you feel is relevant to your organization's response. Please note that this field is optional and is not scored.....	407
(13.3) Provide the following information for the person that has signed off (approved) your CDP response.....	408
(13.4) Please indicate your consent for CDP to share contact details with the Pacific Institute to support content for its Water Action Hub website.	408

C1. Introduction

(1.1) In which language are you submitting your response?

Select from:

English

(1.2) Select the currency used for all financial information disclosed throughout your response.

Select from:

EUR

(1.3) Provide an overview and introduction to your organization.

(1.3.2) Organization type

Select from:

Privately owned organization

(1.3.3) Description of organization

ZF is a global technology company manufacturing advanced mobility products and systems for passenger cars, commercial vehicles and industrial technology. Our comprehensive product range is aimed primarily at vehicle manufacturers, mobility providers and startup companies in the fields of transportation and mobility. ZF electrifies a wide range of vehicle types. With its products, the company contributes to reducing emissions, protecting the climate as well as enhancing safe mobility. Alongside the automotive sectors – passenger cars and commercial vehicles – we also serve market segments such as construction and agricultural machinery, wind power, marine propulsion, rail drives, special drives and test systems. We sell our aftermarket products under the brands of ZF, Lemförder, Sachs, TRW, WABCO and Boge. ZF is represented with 162 production locations in 31 countries. With some 168,700 employees worldwide, ZF reported sales of 46.6 billion in fiscal year 2023. ZF's main sales markets are Europe, North America and the Region of Asia-Pacific, with China as the core market and India as a growth market. ZF is a corporation headquartered in Friedrichshafen (Germany). The Zeppelin Foundation owns 93.8% of the company. These shares are managed by the city of Friedrichshafen. The remaining 6.2% is owned by the Dr. Jürgen and Irmgard Ulderup Foundation, Lemförde (Germany). The shareholders exercise their voting rights at the ordinary annual shareholders' meeting and/or at extraordinary shareholders' meetings that are held upon requirement. To keep our business activities as customer-oriented, market-specific and innovative as possible, we are working in a global network consisting of divisions, regions and corporate functions. The corporate functions and divisions are managed by the Board of Management. The same applies to the responsibilities with regard to the Regions of North America, South America, Asia-Pacific and India. The regions provide local guidelines as well as corresponding services in their regions. In the ZF Group, business activities by

product segments are organized by divisions. The divisions Active Safety Systems, Car Chassis Technology, Electrified Powertrain Technology, Electronics and ADAS as well as the Passive Safety Systems Division operate in the passenger car and light commercial vehicle sector. The product portfolio includes innovative driveline and chassis technology for passenger cars with conventional drives as well as for hybrid and electric vehicles. In addition, ZF offers both components and systems for active and passive safety technology.

[Fixed row]

(1.4) State the end date of the year for which you are reporting data. For emissions data, indicate whether you will be providing emissions data for past reporting years.

(1.4.1) End date of reporting year

12/31/2023

(1.4.2) Alignment of this reporting period with your financial reporting period

Select from:

Yes

(1.4.3) Indicate if you are providing emissions data for past reporting years

Select from:

Yes

(1.4.4) Number of past reporting years you will be providing Scope 1 emissions data for

Select from:

2 years

(1.4.5) Number of past reporting years you will be providing Scope 2 emissions data for

Select from:

2 years

(1.4.6) Number of past reporting years you will be providing Scope 3 emissions data for

Select from:

2 years

[Fixed row]

(1.4.1) What is your organization’s annual revenue for the reporting period?

46627000000

(1.5) Provide details on your reporting boundary.

	Is your reporting boundary for your CDP disclosure the same as that used in your financial statements?
	Select from: <input checked="" type="checkbox"/> Yes

[Fixed row]

(1.6) Does your organization have an ISIN code or another unique identifier (e.g., Ticker, CUSIP, etc.)?

ISIN code - bond

(1.6.1) Does your organization use this unique identifier?

Select from:

Yes

(1.6.2) Provide your unique identifier

ISIN code - equity

(1.6.1) Does your organization use this unique identifier?

Select from:

No

CUSIP number

(1.6.1) Does your organization use this unique identifier?

Select from:

No

Ticker symbol

(1.6.1) Does your organization use this unique identifier?

Select from:

No

SEDOL code

(1.6.1) Does your organization use this unique identifier?

Select from:

No

LEI number

(1.6.1) Does your organization use this unique identifier?

Select from:

Yes

(1.6.2) Provide your unique identifier

529900CAYOWB8YIG7X25

D-U-N-S number

(1.6.1) Does your organization use this unique identifier?

Select from:

Yes

(1.6.2) Provide your unique identifier

31-501-5446

Other unique identifier

(1.6.1) Does your organization use this unique identifier?

Select from:

Yes

(1.6.2) Provide your unique identifier

DE 145 374 190

[Add row]

(1.7) Select the countries/areas in which you operate.

Select all that apply

- China
- India
- Italy
- Japan
- Spain
- Serbia
- Turkey
- Austria
- Belgium
- Czechia
- Portugal
- Slovakia
- Thailand
- Viet Nam
- Argentina
- Taiwan, China
- Republic of Korea
- United Arab Emirates
- United States of America
- United Kingdom of Great Britain and Northern Ireland
- Brazil
- Canada
- France
- Mexico
- Poland
- Denmark
- Germany
- Hungary
- Romania
- Malaysia
- Australia
- Singapore
- Netherlands
- Switzerland
- South Africa

(1.24) Has your organization mapped its value chain?

(1.24.1) Value chain mapped

Select from:

- Yes, we have mapped or are currently in the process of mapping our value chain

(1.24.2) Value chain stages covered in mapping

Select all that apply

- Upstream value chain
- Downstream value chain

(1.24.3) Highest supplier tier mapped

Select from:

- Tier 1 suppliers

(1.24.4) Highest supplier tier known but not mapped

Select from:

- Tier 2 suppliers

(1.24.7) Description of mapping process and coverage

To achieve climate neutrality by 2040, ZF analyzed and constantly reviews its value chain to advance decarbonization within upstream, downstream, and own operations. Where primary data is missing, ZF is using macroeconomic input-output models like EXIOBASE. Besides, ZF is an active member of the Value Balancing Alliance (VBA, <https://www.value-balancing.com/>). The cross-industry initiative aims to redefine entrepreneurial value creation. The success of a company should not only be measured by its financial performance, but also by its contributions to society, nature, and the economy. The developed method translates environmental impacts as well as social and economic influences into comparable monetary values. In the year under review, ZF once again participated in a pilot project to test the current methodology in practice and to exchange experiences with members. As part of the VBA initiative, ZF analyzes its upstream, and downstream effects on nature and society. Such a value chain perspective is in line with latest regulation and established frameworks in sustainability (e.g., GHG Protocol).

[Fixed row]

(1.24.1) Have you mapped where in your direct operations or elsewhere in your value chain plastics are produced, commercialized, used, and/or disposed of?

(1.24.1.1) Plastics mapping

Select from:

- No, but we plan to within the next two years

(1.24.1.5) Primary reason for not mapping plastics in your value chain

Select from:

No standardized procedure

(1.24.1.6) Explain why your organization has not mapped plastics in your value chain

In 2023, ZF conducted a materiality analysis in accordance with the requirements of the European Corporate Sustainability Reporting Directive (CSRD). Circular economy was identified as material topic for ZF. Furthermore, ZF is developing a strategy for circular economy for which material use is one of the main focus areas. In general, the selection of sustainable materials is of central importance for an optimized use of resources and further waste reduction. Based on the total material volume, ZF has developed a concept to test and evaluate materials produced with new process technologies and higher recycling contents. The results form the basis of a ZF-wide roadmap that includes alternative material concepts and production routes for main material groups. Corresponding sub-projects were initiated to validate the resulting changes in material properties.

[Fixed row]

C2. Identification, assessment, and management of dependencies, impacts, risks, and opportunities

(2.1) How does your organization define short-, medium-, and long-term time horizons in relation to the identification, assessment, and management of your environmental dependencies, impacts, risks, and opportunities?

Short-term

(2.1.1) From (years)

1

(2.1.3) To (years)

3

(2.1.4) How this time horizon is linked to strategic and/or financial planning

Definition is based on the time horizon of operational financial planning (current year, next year, next to next year). Top operational risks are included in the Corporate Risk Report based on defined thresholds: Risks are considered as top risks, i. e. those with substantive or strategic impact for ZF Group, if they exceed an occurrence probability 25% and an impact 10 mEUR, related to the internal profit figure of the effected reference unit. Those risks are included in our quarterly Corporate Risk Report to the Board of Management (BoM) and Supervisory Board (SB). For non-quantified, i. e. qualitatively assessed risks, no specific thresholds are defined as they shall be included in Corporate Risk Report if they have a relevance for ZF Group. Quantified risk impacts are related to the Group Management Profit, which equals the EBIT adjusted for ZF Group. On Corporate level we distinguish between four impact levels: Minor (up to 20 mEUR impact on Group Management Profit); Low (20 mEUR and 50 mEUR and 200 mEUR). For climate related impact, risk and opportunities ZF considers three different time horizons as required in ESRS 1 – short, medium and long term Short term is based on operation and financial planning, as per August 2024 it refers to 2025.

Medium-term

(2.1.1) From (years)

3

(2.1.3) To (years)

7

(2.1.4) How this time horizon is linked to strategic and/or financial planning

Definition is based on the time horizon of strategic planning, which comprises 7 years. The strategic risk landscape is regularly updated in the course of the annual strategic planning. Strategic risks are included in the Corporate Risk Report. For climate related impact, risk and opportunities, medium-term as per August 2024 refers to 2030.

Long-term

(2.1.1) From (years)

7

(2.1.2) Is your long-term time horizon open ended?

Select from:

Yes

(2.1.4) How this time horizon is linked to strategic and/or financial planning

Strategic risks can be projected to longer time periods in the future. In that regard, we consider resilience related risks, such as, e. g. physical risks due to climate change. Climate risk analyses even included a longer timeframe of projection. For climate related impact, risk and opportunities, long-term as per August 2024 refers to 2050, in order to reflect the long-term nature of climate risks including resilience-related risks associated with physical climate change
[Fixed row]

(2.2) Does your organization have a process for identifying, assessing, and managing environmental dependencies and/or impacts?

	Process in place	Dependencies and/or impacts evaluated in this process
	Select from: <input checked="" type="checkbox"/> Yes	Select from: <input checked="" type="checkbox"/> Both dependencies and impacts

[Fixed row]

(2.2.1) Does your organization have a process for identifying, assessing, and managing environmental risks and/or opportunities?

	Process in place	Risks and/or opportunities evaluated in this process	Is this process informed by the dependencies and/or impacts process?
	Select from: <input checked="" type="checkbox"/> Yes	Select from: <input checked="" type="checkbox"/> Both risks and opportunities	Select from: <input checked="" type="checkbox"/> Yes

[Fixed row]

(2.2.2) Provide details of your organization's process for identifying, assessing, and managing environmental dependencies, impacts, risks, and/or opportunities.

Row 1

(2.2.2.1) Environmental issue

Select all that apply

Climate change

(2.2.2.2) Indicate which of dependencies, impacts, risks, and opportunities are covered by the process for this environmental issue

Select all that apply

- Risks
- Opportunities

(2.2.2.3) Value chain stages covered

Select all that apply

- Direct operations
- Upstream value chain
- Downstream value chain

(2.2.2.4) Coverage

Select from:

- Full

(2.2.2.5) Supplier tiers covered

Select all that apply

- Tier 1 suppliers

(2.2.2.7) Type of assessment

Select from:

- Qualitative and quantitative

(2.2.2.8) Frequency of assessment

Select from:

- Annually

(2.2.2.9) Time horizons covered

Select all that apply

- Short-term
- Medium-term
- Long-term

(2.2.2.10) Integration of risk management process

Select from:

- Integrated into multi-disciplinary organization-wide risk management process

(2.2.2.11) Location-specificity used

Select all that apply

- Site-specific

(2.2.2.12) Tools and methods used

Enterprise Risk Management

- COSO Enterprise Risk Management Framework
- Enterprise Risk Management
- Stress tests

International methodologies and standards

- IPCC Climate Change Projections

Other

- Scenario analysis

(2.2.2.13) Risk types and criteria considered

Acute physical

- Drought
- Tornado
- Avalanche
- Landslide
- Wildfires
- Heavy precipitation (rain, hail, snow/ice)
- Flood (coastal, fluvial, pluvial, ground water)
- Storm (including blizzards, dust, and sandstorms)

Chronic physical

- Heat stress
- Soil erosion
- Solifluction
- Water stress
- Sea level rise
- Temperature variability
- Precipitation or hydrological variability
- Changing temperature (air, freshwater, marine water)
- Changing precipitation patterns and types (rain, hail, snow/ice)
- Other chronic physical driver, please specify :**saline intrusion**

Policy

- Carbon pricing mechanisms
- Other policy, please specify :Enhanced emissions-reporting obligations Mandates on and regulation of existing products and services

Market

- Changing customer behavior
- Other market, please specify :Use of public-sector incentives Access to new financing option linked to sustainability performance

- Heat waves
- Subsidence
- Cold wave/frost
- Glacial lake outburst
- Cyclones, hurricanes, typhoons

- Coastal erosion
- Soil degradation
- Permafrost thawing
- Ocean acidification
- Changing wind patterns

Reputation

- Increased partner and stakeholder concern and partner and stakeholder negative feedback
- Stigmatization of sector
- Other reputation, please specify :participation in carbon market

Technology

- Transition to lower emissions technology and products
- Unsuccessful investment in new technologies

Liability

- Exposure to litigation

(2.2.2.14) Partners and stakeholders considered

Select all that apply

- Customers
- Employees
- Suppliers

(2.2.2.15) Has this process changed since the previous reporting year?

Select from:

- Yes

(2.2.2.16) Further details of process

In 2024 ZF is working on Climate Risk Analysis in line with CSRD and related ESRS E1 Climate change to analyse physical risks and transitional risks and opportunities across 3 different (short, medium and long-term) time horizons. On physical climate risk scenario analysis: • Run across full value chain, focus own operations • Considered climate scenarios: 4C high emission & 2.5C current policy scenario • Considered time horizons: short-term 2025/current, mid-term 2030, long-term 2050; with focus on: 2050 • Qualitative scenario analysis run over all of ZF's ca. 550 spatial units worldwide, i.e. distinct geographically connected properties, incl. production plants, warehouses, tech centers and administration buildings • Insurance values used as proxy for criticality of the spatial unit (property damage – include buildings, machinery and stock values; and business interruption – include annual sales amount) • Consideration of 28 natural hazards (acute and chronic) defined in ESRS E1 Climate change • Thereof 15 natural hazards assessed as relevant for ZF (based on cross-functional internal expertise

and experience as well as external expert opinion) • Natural hazards criteria: historical (short-term/today) risk rating means sites exposed already today to e.g. flooding vs. future change rating (long term 2050) of the same risk, i. e. which sites will be exposed in 2050 to the same hazard because of climate change. •

Internal prioritization workshop for identification of ZF's most relevant natural hazards to focus on; from 15 ZF relevant natural hazards, considering exposure, hazard and vulnerability, the following 2 hazards considering today risk rating and future change signal were selected for an in-depth scenario analysis, business impact assessment and resilience analysis: o Riverine flooding o Water scarcity • ZF set up internal focus working groups for both riverine flooding and water scarcity risks to align on approach and assumptions and for validation and strategic implication deriving requirements. • Deep dive analysis and quantification for selected sites ongoing (focus is on relevant ZF sites exposed to riverine flooding and water scarcity for business impact quantification) • First validated results likely available by end of 2024 On transition climate risk and opportunity scenario analysis: • Starting point: Screening of ZF business model and value chain against potential transition risk and opportunity 'events' in line with CSRD categories (e.g., Policy and Legal, Market, Technology, Energy source etc.) • Considered climate scenarios: 1.5C decarbonization scenario & 2.5C current policy scenario • Considered time horizons: short-term 2025/current, mid-term 2030, long-term 2050 • Long list of 33 transition risks and opportunities identified. Further screening with ZF internal stakeholders/experts and exclusion of topics with a low degree of change under a 1.5C and/or low potential business impact rating. As result 17 transitional risks and opportunities prioritized. • Internal prioritization workshop with cross-functional stakeholders based on potential impact and climate change signal to identify ZF's top transition risks and opportunities. Final selection of 2 transitional risks & opportunities to focus on for in-depth scenario analysis, business impact assessment and resilience analysis: o Steel production costs o Automotive market transition in the passenger car and commercial vehicle segment

Row 2

(2.2.2.1) Environmental issue

Select all that apply

Water

(2.2.2.2) Indicate which of dependencies, impacts, risks, and opportunities are covered by the process for this environmental issue

Select all that apply

Impacts

Risks

(2.2.2.3) Value chain stages covered

Select all that apply

Direct operations

(2.2.2.4) Coverage

Select from:

- Full

(2.2.2.7) Type of assessment

Select from:

- Qualitative and quantitative

(2.2.2.8) Frequency of assessment

Select from:

- More than once a year

(2.2.2.9) Time horizons covered

Select all that apply

- Short-term

(2.2.2.10) Integration of risk management process

Select from:

- Integrated into multi-disciplinary organization-wide risk management process

(2.2.2.11) Location-specificity used

Select all that apply

- Site-specific

(2.2.2.12) Tools and methods used

Commercially/publicly available tools

- WWF Water Risk Filter

International methodologies and standards

- ISO 14001 Environmental Management Standard

(2.2.2.13) Risk types and criteria considered

Chronic physical

- Water stress

(2.2.2.14) Partners and stakeholders considered

Select all that apply

- Water utilities at a local level

(2.2.2.15) Has this process changed since the previous reporting year?

Select from:

- Yes

(2.2.2.16) Further details of process

In 2020, ZF assessed with WWF Water Risk Filter all locations for their water risk. An updated assessment of all locations is currently being prepared. Completion is planned for 2024 in order to take into account definitions and specifications of CSRD reporting.

[Add row]

(2.2.7) Are the interconnections between environmental dependencies, impacts, risks and/or opportunities assessed?

(2.2.7.1) Interconnections between environmental dependencies, impacts, risks and/or opportunities assessed

Select from:

- Yes

(2.2.7.2) Description of how interconnections are assessed

Besides the established risk management processes, ZF conducted a materiality analysis in accordance with the requirements of the European Corporate Sustainability Reporting Directive (CSRD) in 2023. In that context, ZF applied a double materiality assessment integrating the “inside out” view with the company’s impact on people and the planet (impact materiality) and the outside-in view (financial materiality) on how sustainability matters could affect the company’s financial performance. The process of conducting a double materiality also includes an assessment of environmental dependencies, impacts, risks, and opportunities.
[Fixed row]

(2.3) Have you identified priority locations across your value chain?

(2.3.1) Identification of priority locations

Select from:

Yes, we have identified priority locations

(2.3.2) Value chain stages where priority locations have been identified

Select all that apply

Direct operations

(2.3.3) Types of priority locations identified

Sensitive locations

Areas of limited water availability, flooding, and/or poor quality of water

(2.3.4) Description of process to identify priority locations

With regard to water, ZF identifies priority locations by using the WWF Water Risk Filter. By applying the WWF Water Risk Filter, ZF locations are assessed for their water risk and identified as being located in high or medium water scarcity areas due to their geographical position. For production sites in areas of water-stress, the goal is to reduce water withdrawal by 2% annually relative to sales. For all other locations, a 1% reduction is being targeted on an annual basis.

(2.3.5) Will you be disclosing a list/spatial map of priority locations?

Select from:

No, we have a list/geospatial map of priority locations, but we will not be disclosing it

[Fixed row]

(2.4) How does your organization define substantive effects on your organization?

Risks

(2.4.1) Type of definition

Select all that apply

Qualitative

(2.4.6) Metrics considered in definition

Select all that apply

Likelihood of effect occurring

Other, please specify :Impact on internal profit figure

(2.4.7) Application of definition

At ZF Group we offer the possibility to evaluate risks quantitatively and qualitatively. Risk Owners are asked to point out, on which organizational level the risk exists (on group, divisional, site level). We differentiate risks according to their gross risk value (before risk treatment) and net risk value (after risk treatment). Risks are considered as top risks, i. e. those with substantive or strategic impact for ZF Group, if they exceed an occurrence probability 25% and an impact 10 mEUR, related to the internal profit figure of the effected reference unit. Those risks are included in our quarterly Corporate Risk Report to the Board of Management (BoM) and Supervisory Board (SB). For non-quantified, i. e. qualitatively assessed risks, no specific thresholds are defined as they shall be included in Corporate Risk Report if they have a relevance for ZF Group. Quantified risk impacts are related to the Group Management Profit, which equals the EBIT adjusted for ZF Group. On Corporate level we distinguish between four impact levels: Minor (up to 20 mEUR impact on Group Management Profit); Low (20 mEUR and 50 mEUR and 200 mEUR). For qualitatively assessing impacts we offer a qualitative impact matrix which is commonly used by Enterprise Risk Management (ERM), Internal Control System (ICS), Compliance and Corporate Audit to evaluate risks, control issues, compliance cases and audit findings. There the qualitative impact clusters minor, low, moderate and significant are described along the impact categories "Business/Financial Impact", "Environmental, Health & Safety, Human Rights", "Legal/Compliance Relevance", "Impact on Reputation", "Strategic Impact". In 2024 ZF Group enhanced the qualitative evaluation matrix to cover both the outside-in and inside-out perspective. To assess the likelihood of risks we use likelihood categories that cluster ranges of probabilities of occurrence. We distinguish between Unlikely (1-5%; equals an average occurrence between 20 and 100 years), Rare (6-24%), Possible (25-50%), Probable (51-74%), Very likely/Certain (75-100%; equals an average occurrence in the current/every year).

Opportunities

(2.4.1) Type of definition

Select all that apply

- Qualitative

(2.4.6) Metrics considered in definition

Select all that apply

- Likelihood of effect occurring
- Other, please specify

(2.4.7) Application of definition

ZF defines risks as any internally or externally occurring events or developments that may result in a negative deviation from the business plan, whereas opportunities may result in a positive target deviation. We closely monitor market developments and opportunities as well as customer requirements impacted by climate and the environment on a regular basis.

Risks

(2.4.1) Type of definition

Select all that apply

- Quantitative

(2.4.2) Indicator used to define substantive effect

Select from:

- Other, please specify :EBIT adjusted

(2.4.3) Change to indicator

Select from:

- Absolute decrease

(2.4.5) Absolute increase/ decrease figure

10000000

(2.4.6) Metrics considered in definition

Select all that apply

- Likelihood of effect occurring
- Other, please specify :Impact on internal profit figure

(2.4.7) Application of definition

At ZF Group we offer the possibility to evaluate risks quantitatively and qualitatively. Risk Owners are asked to point out, on which organizational level the risk exists (on group, divisional, site level). We differentiate risks according to their gross risk value (before risk treatment) and net risk value (after risk treatment). Risks are considered as top risks, i. e. those with substantive or strategic impact for ZF Group, if they exceed an occurrence probability 25% and an impact 10 mEUR, related to the internal profit figure of the effected reference unit. Those risks are included in our quarterly Corporate Risk Report to the Board of Management (BoM) and Supervisory Board (SB). For non-quantified, i. e. qualitatively assessed risks, no specific thresholds are defined as they shall be included in Corporate Risk Report if they have a relevance for ZF Group. Quantified risk impacts are related to the Group Management Profit, which equals the EBIT adjusted for ZF Group. On Corporate level we distinguish between four impact levels: Minor (up to 20 mEUR impact on Group Management Profit); Low (20 mEUR and 50 mEUR and 200 mEUR). For qualitatively assessing impacts we offer a qualitative impact matrix which is commonly used by Enterprise Risk Management (ERM), Internal Control System (ICS), Compliance and Corporate Audit to evaluate risks, control issues, compliance cases and audit findings. There the qualitative impact clusters minor, low, moderate and significant are described along the impact categories “Business/Financial Impact”, “Environmental, Health & Safety, Human Rights”, “Legal/Compliance Relevance”, “Impact on Reputation”, “Strategic Impact”. In 2024 ZF Group enhanced the qualitative evaluation matrix to cover both the outside-in and inside-out perspective. To assess the likelihood of risks we use likelihood categories that cluster ranges of probabilities of occurrence. We distinguish between Unlikely (1-5%; equals an average occurrence between 20 and 100 years), Rare (6-24%), Possible (25-50%), Probable (51-74%), Very likely/Certain (75-100%; equals an average occurrence in the current/every year).

[Add row]

(2.5) Does your organization identify and classify potential water pollutants associated with its activities that could have a detrimental impact on water ecosystems or human health?

(2.5.1) Identification and classification of potential water pollutants

Select from:

- Yes, we identify and classify our potential water pollutants

(2.5.2) How potential water pollutants are identified and classified

Systematic environmental management according to ISO 14001:2015 is the standard for all production and main development locations. The pollutants are determined in the course of the approval procedure for the water discharge. Within the framework of the discharge permit, the pollutants are regularly identified, classified and measured in accordance with the legal requirements. Wastewater loads are managed at local level, with relevant deviations from legal requirements and permits being reviewed at Group level through audits and management reviews. ZF has global standards in place which refer to this topic. Each site is expected to have an active program to make proactive assessments of its Environmental, Health & Safety risks as well as of risks, threats and opportunities associated with its EHS relevant contextual issues, compliance obligations and significant EHS hazards. Sites shall identify all the hazards associated with each of their activities which includes considering the potentially affected environmental conditions (groundwater/surface water quality/availability, ground/groundwater contamination, nature sensitive/protected area, flooding area, drinking water protection area, ...). A global standard about hazardous materials management ensures that in the releasing-process the impact on wastewater must be assessed. ZF adopted the substance declarations and prohibitions of the Global Automotive Declarable Substance List (GADSL).

[Fixed row]

(2.5.1) Describe how your organization minimizes the adverse impacts of potential water pollutants on water ecosystems or human health associated with your activities.

Row 1

(2.5.1.1) Water pollutant category

Select from:

- Inorganic pollutants

(2.5.1.2) Description of water pollutant and potential impacts

Metalworking contaminates wastewater with a wide variety of pollutants. During machining, grinding, surface treatment or degreasing, hydrocarbons, alkalis, surfactants, phosphates, heavy metals and acids can get into the wastewater. Heavy metals accumulate in the environment and in sewage sludge and are therefore considered particularly problematic. These substances can be a threat to ecosystems on land in water. Especially chromium VI compounds cause allergic and

asthmatic reactions and are considered carcinogenic. Chromium and chromium compounds mainly enter the surface waters through the wastewaters of the chromium-processing industry, e.g. from electroplating companies.

(2.5.1.3) Value chain stage

Select all that apply

- Direct operations

(2.5.1.4) Actions and procedures to minimize adverse impacts

Select all that apply

- Water recycling
- Resource recovery
- Upgrading of process equipment/methods
- Reduction or phase out of hazardous substances
- Requirement for suppliers to comply with regulatory requirements
- Industrial and chemical accidents prevention, preparedness, and response
- Discharge treatment using sector-specific processes to ensure compliance with regulatory requirements
- Assessment of critical infrastructure and storage condition (leakages, spillages, pipe erosion etc.) and their resilience

(2.5.1.5) Please explain

ZF conducts functional chromium plating through the electroplating process. At the Friedrichshafen location, for example, we carry out wastewater treatment in-house, using processes such as ultrafiltration to separate solids and liquids or physico-chemical treatment methods such as precipitation or distillation, depending on local conditions. There, the waste water from the chromium plating is cleaned and detoxified in its own waste water treatment plant. Treatment steps are chromate reduction by sodium hydrogen sulfite, neutralization, settling of solids (using a precipitation aid), sludge removal & Cr (VI) analysis & discharge into municipal sewage system. The responsible authorities have approved the processes and apply a strict control of the Cr (VI) processes. As part of our own control responsibility, we send samples to an external laboratory on a weekly basis, document the results and use them to improve the processes. In addition, we also sample the wastewater from the ultrafiltration from both plants weekly for all heavy metal concentrations specified in the Wastewater Ordinance. There is a Group-wide reporting obligation in the eventuality of a release.

[Add row]

C3. Disclosure of risks and opportunities

(3.1) Have you identified any environmental risks which have had a substantive effect on your organization in the reporting year, or are anticipated to have a substantive effect on your organization in the future?

Climate change

(3.1.1) Environmental risks identified

Select from:

Yes, both in direct operations and upstream/downstream value chain

Water

(3.1.1) Environmental risks identified

Select from:

Yes, only within our direct operations

(3.1.2) Primary reason why your organization does not consider itself to have environmental risks in your direct operations and/or upstream/downstream value chain

Select from:

Evaluation in progress

(3.1.3) Please explain

For ZF, water withdrawal for production at all ZF locations is a major environmental issue since the use of freshwater is increasingly restricted due to climate change, for instance. This is another reason why the company is committed to installing water-saving equipment that exceeds statutory requirements. The revised ZF Circularity Framework focuses on closing water circuits, for example in cooling systems. Some of ZF's production locations, e.g., in Brazil, Mexico, India and China, are in areas with significant water scarcity or with significant water shortage. Permits for water withdrawal for production purposes are occasionally restricted. This

may result in a need for increased investment or expenses to cover the technical modernization of production equipment. In 2020, ZF assessed all locations for their water risk. An updated assessment of all locations is currently being prepared. Completion is planned for 2024 in order to take into account definitions and specifications of CSRD reporting.

Plastics

(3.1.1) Environmental risks identified

Select from:

No

(3.1.2) Primary reason why your organization does not consider itself to have environmental risks in your direct operations and/or upstream/downstream value chain

Select from:

Evaluation in progress

(3.1.3) Please explain

In 2023, ZF conducted a materiality analysis in accordance with the requirements of the European Corporate Sustainability Reporting Directive (CSRD). Circular economy was identified as material topic. Besides the CSRD reporting, ZF is developing the strategy for circular economy for which material use (including plastics) is one of the main focus areas. In general, the selection of sustainable materials is of central importance for an optimized use of resources and further waste reduction. Based on the total material volume, ZF has developed a concept to test and evaluate materials produced with new process technologies and higher recycling contents. The results form the basis of a ZF-wide roadmap that includes alternative material concepts and production routes for main material groups. Corresponding sub-projects were initiated to validate the resulting changes in material properties.

[Fixed row]

(3.1.1) Provide details of the environmental risks identified which have had a substantive effect on your organization in the reporting year, or are anticipated to have a substantive effect on your organization in the future.

Climate change

(3.1.1.1) Risk identifier

Select from:

- Risk1

(3.1.1.3) Risk types and primary environmental risk driver

Acute physical

- Flooding (coastal, fluvial, pluvial, groundwater)

(3.1.1.4) Value chain stage where the risk occurs

Select from:

- Direct operations

(3.1.1.6) Country/area where the risk occurs

Select all that apply

- China
- India
- Spain
- Latvia
- Mexico
- United States of America
- Sweden
- Germany
- Ukraine
- Portugal
- Republic of Korea

(3.1.1.9) Organization-specific description of risk

In July 2021, a ZF plant in the German Ahrtal valley was completely destroyed by a flood disaster. In June 2024, Southern Germany experienced severe flooding, which required a temporary preventive production stop at one plant in Friedrichshafen. Throughout 2024, ZF is conducting a scenario analysis in compliance with the CSRD/ESRS E1 Climate Change. Therefore, ZF evaluates its exposure today, the expected degree of change and the potential business impact of each physical climate hazard as classified in the CSRD. The analysis was run across all ca. 550 spatial units of ZF Group, i.e. distinct geographically connected properties, from production plants to warehouses. First qualitative results indicate riverine flooding as key hazard for ZF in terms of property damage and business interruption risk, affecting both inbound and outbound logistics and intercompany transactions, in a 4C scenario. ZF measures riverine flooding risks with the 100-Year Return Period Riverine Flooding Level [m] indicator based on data from the Aqueduct Floods dataset. Recent analyses reveal that ca. 40 units are historically exposed to a very

high riverine flooding rating (1.5m). Thereof ca. 88% are located in Europe (mainly Germany) and ca. 8% in Asia Pacific (China and Korea). Under a 4C climate scenario 5 units are rated with a very high (0.5m) increase in flooding risk by 2050, thereof 2 in Portugal. As a next step, ZF will quantify the potential impact.

(3.1.1.11) Primary financial effect of the risk

Select from:

- Disruption in production capacity

(3.1.1.12) Time horizon over which the risk is anticipated to have a substantive effect on the organization

Select all that apply

- Long-term

(3.1.1.13) Likelihood of the risk having an effect within the anticipated time horizon

Select from:

- About as likely as not

(3.1.1.14) Magnitude

Select from:

- Medium-high

(3.1.1.16) Anticipated effect of the risk on the financial position, financial performance and cash flows of the organization in the selected future time horizons

Throughout 2024, ZF is conducting a climate scenario analysis which is in line with the climate-risk related requirements of the CSRD/ ESRS E1 Climate Change. First results of the qualitative physical scenario analysis reveal riverine flooding as key hazard for ZF's value chain in a high emission scenario by 2050 (long-term). Until year-end 2024 ZF will conduct a deep dive analysis and evaluate anticipated financial effects of riverine flooding for its assets and operations, using subsequent four steps approach: 1. Exposure: How is ZF exposed to the risk through its supply chain locations? Considering all of ZF's ca. 550 spatial units globally. 2. Hazard: How might riverine flooding change over different scenarios? Considering flooding projections under various parameters as flood height in metres, 4C and 2C scenarios, different return periods and time horizons 2030 and 2050. 3. Vulnerability: How might ZF be affected by flooding of its facilities? Considering both facility and inventory damage based on flood damage functions and facility downtime based on literature and engagement with plant managers. 4. Impact: What potential direct and indirect impacts might ZF face? Considering direct property damage (PD) per facility, return period, scenario and time horizon in EUR, as well as business interruption (BI) for selected facilities, per scenario, return period, and time horizon in EUR. On PD: • Flood height (m) at each specific location will be

the determining factor of strength of the impacting event; • Damage function from Joint Research Center will be used to calculate the percentage of site value lost based on flood height • Insurance data will be used as a proxy of the asset value including buildings, equipment and inventories • Output metrics will be annual average loss (AAL) and impact of floods of a certain return period (20y, 50y, 100y) On BI: • Determining factor of strength of the indirect impacting is flood height (m) at each specific location which is translated into a duration of BI due to flooding (month) • Core assumption: Direct damage to facilities can be translated into facility downtime. The downtime can be calculated by linear interpolation of damage to downtime. • Damage function: BI in Monthly sales () x BI (months), where BI (months) damage function (flood depth in m) • Output metrics will be annual sales affected and impact of floods of a certain return period (20y, 50y, 100y)

(3.1.1.17) Are you able to quantify the financial effect of the risk?

Select from:

No

(3.1.1.26) Primary response to risk

Compliance, monitoring and targets

Establish organization-wide targets

(3.1.1.27) Cost of response to risk

25000000

(3.1.1.28) Explanation of cost calculation

In 2023, associated investment for the implementation of the 1,000 energy efficiency projects accounted for 25 million.

(3.1.1.29) Description of response

Situation: ZF responds to and mitigates climate-related risks from extreme weather events by setting science-based carbon reduction targets and implementing group-wide decarbonization pathways. ZF Group's target path towards climate neutrality is defined considering the UN Sustainable Development Goals (SDGs), and in accordance with the requirements of the Science Based Targets initiative (SBTi). Task: In January 2022, the SBTi confirmed that the targets for reducing ZF's CO2e emissions are consistent and robust, comply with the GHG Protocol and are planned in line with what the latest climate science deems necessary in order to achieve the objectives of the Paris Agreement. Action: In order to achieve its climate targets approved by the SBTi, ZF invests in carbon reduction initiatives (i.e., energy reduction and energy efficiency) and low-carbon energy consumption across the organization. Result: Overall, about 1,000 energy efficiency projects were implemented or initiated in 2023, which led to more than 166 GWh in energy savings, avoiding ca. 66,700 tons of CO2e emissions. In 2023, associated investment for the implementation of the 1,000 energy efficiency projects accounted for 25 million. In addition, ZF invests in the expansion of low-carbon energy consumption.

Renewables made up 27% of our total purchased electricity in 2023, under guaranteed certified green power contracts. Following our ZF Green Power Roadmap, ZF has ratcheted up its ambitions and is sending a clear signal: all plants are to be supplied completely with green electricity by 2025 rather than 2030. The amount of self-generated electricity from renewable sources doubled to 12,500 MWh due to new photovoltaic power plants installed in 2023 on several sites globally. Those investments strongly support the ZF vision to sustain a low-carbon, sustainable business model.

Water

(3.1.1.1) Risk identifier

Select from:

- Risk4

(3.1.1.3) Risk types and primary environmental risk driver

Acute physical

- Flooding (coastal, fluvial, pluvial, groundwater)

(3.1.1.4) Value chain stage where the risk occurs

Select from:

- Direct operations

(3.1.1.6) Country/area where the risk occurs

Select all that apply

- China
- India
- Spain
- Latvia
- Mexico
- United States of America
- Sweden
- Germany
- Ukraine
- Portugal
- Republic of Korea

(3.1.1.7) River basin where the risk occurs

Select all that apply

Other, please specify :River basins in Europe and Asia Pacific (China and Korea)

(3.1.1.9) Organization-specific description of risk

In July 2021, a ZF plant in the German Ahrtal valley was completely destroyed by a flood disaster. In June 2024, Southern Germany experienced severe flooding, which required a temporary preventive production stop at one plant in Friedrichshafen. Throughout 2024, ZF is conducting a scenario analysis in compliance with the CSRD/ESRS E1 Climate Change. Therefore, ZF evaluates its exposure today, the expected degree of change and the potential business impact of each physical climate hazard as classified in the CSRD. The analysis was run across all ca. 550 spatial units of ZF Group, i.e. distinct geographically connected properties, from production plants to warehouses. First qualitative results indicate riverine flooding as key hazard for ZF in terms of property damage and business interruption risk, affecting both inbound and outbound logistics and intercompany transactions, in a 4C scenario. ZF measures riverine flooding risks with the 100-Year Return Period Riverine Flooding Level [m] indicator based on data from the Aqueduct Floods dataset. Recent analyses reveal that 40 units are historically exposed to a very high riverine flooding rating (1.5m). Thereof ca. 88% are located in Europe (mainly Germany) and ca. 8% in Asia Pacific (China and Korea). Under a 4C climate scenario 5 units are rated with a very high (0.5m) increase in flooding risk by 2050, thereof 2 in Portugal. As a next step, ZF will quantify the potential impact.

(3.1.1.11) Primary financial effect of the risk

Select from:

Disruption in production capacity

(3.1.1.12) Time horizon over which the risk is anticipated to have a substantive effect on the organization

Select all that apply

Long-term

(3.1.1.13) Likelihood of the risk having an effect within the anticipated time horizon

Select from:

About as likely as not

(3.1.1.14) Magnitude

Select from:

Medium-high

(3.1.1.16) Anticipated effect of the risk on the financial position, financial performance and cash flows of the organization in the selected future time horizons

Throughout 2024, ZF is conducting a climate scenario analysis which is in line with the climate-risk related requirements of the CSRD/ ESRS E1 Climate Change. First results of the qualitative physical scenario analysis reveal riverine flooding as key hazard for ZF's value chain in a high emission scenario by 2050 (long-term). Until year-end 2024 ZF will conduct a deep dive analysis and evaluate anticipated financial effects of riverine flooding for its assets and operations, using subsequent four steps approach: 1. Exposure: How is ZF exposed to the risk through its supply chain locations? Considering all of ZF's ca. 550 spatial units globally. 2. Hazard: How might riverine flooding change over different scenarios? Considering flooding projections under various parameters as flood height in metres, 4C and 2C scenarios, different return periods and time horizons 2030 and 2050. 3. Vulnerability: How might ZF be affected by flooding of its facilities? Considering both facility and inventory damage based on flood damage functions and facility downtime based on literature and engagement with plant managers. 4. Impact: What potential direct and indirect impacts might ZF face? Considering direct property damage (PD) per facility, return period, scenario and time horizon in EUR, as well as business interruption (BI) for selected facilities, per scenario, return period, and time horizon in EUR. On PD: • Flood height (m) at each specific location will be the determining factor of strength of the impacting event; • Damage function from Joint Research Center will be used to calculate the percentage of site value lost based on flood height • Insurance data will be used as a proxy of the asset value including buildings, equipment and inventories • Output metrics will be annual average loss (AAL) and impact of floods of a certain return period (20y, 50y, 100y) On BI: • Determining factor of strength of the indirect impacting is flood height (m) at each specific location which is translated into a duration of BI due to flooding (month) • Core assumption: Direct damage to facilities can be translated into facility downtime. The downtime can be calculated by linear interpolation of damage to downtime. • Damage function: BI in Monthly sales (€) x BI (months), where BI (months) damage function (flood depth in m) • Output metrics will be annual sales affected and impact of floods of a certain return period (20y, 50y, 100y)

(3.1.1.17) Are you able to quantify the financial effect of the risk?

Select from:

No

(3.1.1.26) Primary response to risk

Compliance, monitoring and targets

Establish organization-wide targets

(3.1.1.27) Cost of response to risk

25000000

(3.1.1.28) Explanation of cost calculation

In 2023, associated investment for the implementation of the 1,000 energy efficiency projects accounted for 25 million.

(3.1.1.29) Description of response

Situation: ZF responds to and mitigates climate-related risks from extreme weather events by setting science-based carbon reduction targets and implementing group-wide decarbonization pathways. ZF Group's target path towards climate neutrality is defined considering the UN Sustainable Development Goals (SDGs), and in accordance with the requirements of the Science Based Targets initiative (SBTi). Task: In January 2022, the SBTi confirmed that the targets for reducing ZF's CO2e emissions are consistent and robust, comply with the GHG Protocol and are planned in line with what the latest climate science deems necessary in order to achieve the objectives of the Paris Agreement. Action: In order to achieve its climate targets approved by the SBTi, ZF invests in carbon reduction initiatives (i.e., energy reduction and energy efficiency) and low-carbon energy consumption across the organization. Result: Overall, about 1,000 energy efficiency projects were implemented or initiated in 2023, which led to more than 166 GWh in energy savings, avoiding ca. 66,700 tons of CO2e emissions. In 2023, associated investment for the implementation of the 1,000 energy efficiency projects accounted for 25 million. In addition, ZF invests in the expansion of low-carbon energy consumption. Renewables made up 27% of our total purchased electricity in 2023, under guaranteed certified green power contracts. Following our ZF Green Power Roadmap, ZF has ratcheted up its ambitions and is sending a clear signal: all plants are to be supplied completely with green electricity by 2025 rather than 2030. The amount of self-generated electricity from renewable sources doubled to 12,500 MWh due to new photovoltaic power plants installed in 2023 on several sites globally. Those investments strongly support the ZF vision to sustain a low-carbon, sustainable business model.

Climate change

(3.1.1.1) Risk identifier

Select from:

Risk2

(3.1.1.3) Risk types and primary environmental risk driver

Market

Changing customer behavior

(3.1.1.4) Value chain stage where the risk occurs

Select from:

Downstream value chain

(3.1.1.6) Country/area where the risk occurs

Select all that apply

- China
- India
- Italy
- Japan
- France
- Germany
- Republic of Korea
- United States of America

(3.1.1.9) Organization-specific description of risk

Development of Passenger Cars Market The increasing awareness for climate aspects and stricter emission regulations in the EU, US and Asia lead to changes in consumer behaviour globally (selected risk countries only represent an extract). Extensive discussions about an end date for the combustion engine as well as driving bans that have been announced locally, regionally and nationally, or have already been imposed, increase the uncertainty, esp. in the passenger car (PC) market. As one result, global automotive production has declined massively in the years 2018 to 2020 and has not reached pre-crisis levels until 2023 (still 5% below 2017 record level). As a consequence, appreciable risks for our PC focussed divisions consist of a declining demand for vehicles with an internal combustion engine driveline (ICE). Our PC divisions account for 74% of total ZF Group sales. Thereof roughly one third is still realized with components referring to ICE. A decline in demand for ICE vehicles (scenario -1-2% sales decline) that is greater than assumed in the underlying planning scenarios has the potential for a material decrease in PC sales. We already adapt existing products to new vehicles and no longer pursues new developments that are exclusively suitable for ICE vehicles. ZF expects that around two thirds of cars will be hybrids (HEV), plug-in hybrids (PHEV), fuel cell electric vehicles (FCEV) or battery electric vehicles (BEV) in 2030 and targets R&D expenditures accordingly.

(3.1.1.11) Primary financial effect of the risk

Select from:

- Decreased revenues due to reduced demand for products and services

(3.1.1.12) Time horizon over which the risk is anticipated to have a substantive effect on the organization

Select all that apply

- Medium-term

(3.1.1.13) Likelihood of the risk having an effect within the anticipated time horizon

Select from:

About as likely as not

(3.1.1.14) Magnitude

Select from:

Medium-high

(3.1.1.16) Anticipated effect of the risk on the financial position, financial performance and cash flows of the organization in the selected future time horizons

The automotive industry is an important customer group for ZF, especially OEMs of passenger cars and light vehicles

(3.1.1.17) Are you able to quantify the financial effect of the risk?

Select from:

Yes

(3.1.1.21) Anticipated financial effect figure in the medium-term – minimum (currency)

115000000

(3.1.1.22) Anticipated financial effect figure in the medium-term – maximum (currency)

230000000

(3.1.1.25) Explanation of financial effect figure

In 2023, ZF Group sales accounted for roughly 46.6 bnEUR. The passenger cars segment makes up about 74% of ZF Group sales, with an anticipated decreasing share over the next years. About one third thereof is still achieved with components and products based on the internal combustion engine (ICE) driveline. Our planning is based on an ambitious electrification scenario and a distinct global production volume scenario for light and light commercial vehicle

(3.1.1.26) Primary response to risk

Diversification

- ☑ Develop new products, services and/or markets

(3.1.1.27) Cost of response to risk

605000000

(3.1.1.28) Explanation of cost calculation

In 2023, ZF invested total 3.5 bnEUR in research and development (7.6% of group sales). R&D expenditure is defined as R&D costs in accordance with profit or loss statement, plus capitalized development costs, less their depreciation. The 605 m cost of response constitutes “green R&D” and refers to “Green according to the Green Finance Framework” and covers all R&D expenditure on products for zero-emission transportation, i.e. BEV, no hybrids. In scope are products which are specifically developed and finally built into a BEV vehicle. It addresses the core technology such as e-axles or recuperating brakes as well as products which are dedicated to an application for BEV only. Not in scope are technologies and products that could theoretically also be built into conventional vehicles, although current business cases are purely electric. ZF discloses its Eligible Green Project Portfolio with green R&D and CAPEX dedicated to clean transportation annually in the ZF Green Finance Report.

(3.1.1.29) Description of response

Situation: ZF responds to the risk of changing customer behaviour in the passenger car market by investing significantly into research and development (R&D) in the area of clean or green transportation, which refers to pure Battery Electric Vehicles (BEV) and 100% BEV projects. Task: ZF strives for focused technology transformation. Therefore, a reorientation of the innovation portfolio took place in 2023, focussing on efficient use of energy (e.g. optimized drives and efficient energy management for all types of vehicles), modern key technologies (e.g. high-resolution sensors) and software development (e.g. usage of powerful platforms to strengthen ZF’s product development). Action: As a prominent example, ZF invests significantly in the area of e-mobility: One fifth to one fourth of the company’s total R&D expenditure is apportioned to our Electrified Powertrain Division. We expect that around two thirds of cars will be hybrids (HEV), plug-in hybrids (PHEV), fuel cell electric vehicles (FCEV) or battery electric vehicles (BEV) in 2030 worldwide, increasing to ca. 85% by 2035. We assume a global increase of pure BEV share in 2030 reaching just below 50%, mainly driven by Europe and China. Therefore, focus is on electric drives with ZF’s own electric motors, 800-volt silicon carbide power electronics and reduction gears for the premium to high-volume segments. In addition, the development is expanding the central thermal management system, TherMaS. This system features a central unit and intelligent software to control all thermal processes for the drive, battery and passenger compartment in electric cars. Result: R&D expenditure remains at a high level. ZF is proud of 3,413 invention disclosures, 2,081 patent applications and 27,377 people employed in research and development in 2023, spread over 19 main development locations worldwide.

Climate change

(3.1.1.1) Risk identifier

Select from:

- Risk3

(3.1.1.3) Risk types and primary environmental risk driver

Market

- Changing customer behavior

(3.1.1.4) Value chain stage where the risk occurs

Select from:

- Downstream value chain

(3.1.1.6) Country/area where the risk occurs

Select all that apply

- China
- Germany
- Sweden
- United States of America

(3.1.1.9) Organization-specific description of risk

Commercial Vehicles Market The Transport and Logistics Industry increasingly demands zero-emission vehicles at competitive prices, driven by public pressure and cust. expectation globally (selected risk countries only represent an extract). Given that there are various zero-emission technologies emerging and are likely to co-exist, CV OEM are under pressure to offer various new technologies, while at the same time continuing to maintain their ICE portfolio until technology phase-out. This leads to increasing demand towards suppliers to develop zero-emission technologies that help CV OEM to save devel. costs. Our resource planning for R&D, production and sales for CVs 6t (busses & trucks) is based on ambitious e-Mobility forecasts. ZF plans with ca. one quarter 25% EV-based CVs 6t (BEV, FCEV) in 2030. In 2023, not quite half of the CVS division sales is indep.of powertrain technology which remains stable over the planning horizon. EV related powertrain sales share will increase over the planning horizon to ca. 30% in line with a constant ramp up of el. CVs. A decline of the current ICE sales share could be faced, if the markets change towards an even faster el. penetration compared to our assumptions (scenario -1-2% sales decline). In this case, it is even more crucial to have a strong position in alternative powertrain systems supporting various low / zero-emission technologies. E.g.the H2 ICE is considered valuable for the continuing sales of our efficient ICE components.

(3.1.1.11) Primary financial effect of the risk

Select from:

- Decreased revenues due to reduced demand for products and services

(3.1.1.12) Time horizon over which the risk is anticipated to have a substantive effect on the organization

Select all that apply

- Medium-term

(3.1.1.13) Likelihood of the risk having an effect within the anticipated time horizon

Select from:

- Unlikely

(3.1.1.14) Magnitude

Select from:

- Medium

(3.1.1.16) Anticipated effect of the risk on the financial position, financial performance and cash flows of the organization in the selected future time horizons

The progressive electrification in the passenger car and commercial vehicle segment, as well as other technological changes, may jeopardize our market position, and we may not be able to successfully foresee and adapt to these developments by stepping up sufficient activities in these new sectors and to successfully expand our expertise in new technologies. If we are unable to recoup these start-up costs, manage our labor and equipment resources effectively in connection with the development of new technologies or the launch of new platforms, or to correctly estimate required resources, our gross margins and results of operations could be adversely affected. If we fail to innovate and develop new solutions, fail to develop enough new solutions to generate sufficient sales, or if our future solutions fail to receive regulatory approval, or if we fail to introduce new products of sufficient quality or are otherwise unsuccessful to adapt our business to trends, technical developments or customer demand, this failure could have a material adverse effect on our business, financial condition and results of operations. Transitional risks we face result from, e.g., carbon price increases, affecting amongst others the purchase of energy-intensive raw materials and logistic costs, or a decreased demand for fossil fuel-based technologies, e.g., due to stricter regulations on exhaust gas and energy consumption values of vehicles. Globally, greenhouse gas emissions have increasingly become the subject of substantial international, national, regional, state and local attention. Any additional regulation of greenhouse gas emissions, including through a cap-and-trade system, technology mandate, emissions tariffs and tax, reporting requirement or other program, could adversely affect our business, results of operations, financial condition, reputation, product demand and liquidity. Significant past investments were required to improve our environmental

performance in preparation for new regulations or customer expectations. Relevant measures regarding legislation and regulation are further substantiated, binding regulations for the implementation of decarbonization and sustainability measures in general are rather expected in the short and medium term. Significant investments are required to improve our environmental performance and prepare for new regulations or customer expectations, as well as to meet our net zero sustainability targets by 2040.

(3.1.1.17) Are you able to quantify the financial effect of the risk?

Select from:

Yes

(3.1.1.21) Anticipated financial effect figure in the medium-term – minimum (currency)

43000000

(3.1.1.22) Anticipated financial effect figure in the medium-term – maximum (currency)

87000000

(3.1.1.25) Explanation of financial effect figure

In 2023, the division Commercial Vehicle Solutions (CVS) contributed around 17% to ZF Group sales of 46.6 bnEUR, accounting for roughly 8.678 bnEUR. Thereof, not quite a half refer to pure ICE related components. Assuming, in a scenario, a 1-2% annual decrease in sales with regard to combustion engines, and assuming further that ZF is not able to compensate the decline with its market share for electrified products or drivetrain-independent products in such a scenario, the potential financial impact would be in the range of 43 mEUR (8.678 bnEUR x 50% x 1%) to 87 mEUR (8.678 bnEUR x 50% x 2%). Those figures constitute gross risks, not considering existing and future counter measures or orders already received. Rounding lead to deviations.

(3.1.1.26) Primary response to risk

Diversification

Develop new products, services and/or markets

(3.1.1.27) Cost of response to risk

605000000

(3.1.1.28) Explanation of cost calculation

In 2023, ZF invested total 3.5 bnEUR in research and development (7.6% of group sales). R&D expenditure is defined as R&D costs in accordance with profit or loss statement, plus capitalized development costs, less their depreciation. The 605 m cost of response constitutes “green R&D” and refers to “Green according to the Green Finance Framework” and covers all R&D expenditure on products for zero-emission transportation, i.e. BEV, no hybrids. In scope are products which are specifically developed and finally built into a BEV vehicle. It addresses the core technology such as e-axles or recuperating brakes as well as products which are dedicated to an application for BEV only. Not in scope are technologies and products that could theoretically also be built into conventional vehicles, although current business cases are purely electric. ZF discloses its Eligible Green Project Portfolio with green R&D and CAPEX dedicated to clean transportation annually in the ZF Green Finance Report.

(3.1.1.29) Description of response

Situation: ZF responds to the risk of changing customer behaviour in the passenger car market by investing significantly into R&D in the area of clean or green transportation, which refers to pure Battery Electric Vehicles (BEV) and 100% BEV projects. Task: The required transformation of ZFs CV segment was kick-offed in early 1990s already, when first tests with an el. central drive with CV OEMs took place. During the last 30 years several el. drive solutions for buses and trucks have been successfully launched, e.g. Axtrax or CeTrax. We expect the duration of transformation (full switch to el. CVs) to vary between the regions. ZF plans with ca. 50% EV-based CVs 6t (battery-electric, fuel cell el. vehicles) by 2035 in Europe, North America and China as leading EV markets, with continuing ramp-up until the 2040s. Action: With the formation of the CVS Division, ZF can unlock new innovation potential for the transport sector. In 2023, ZF presented with the fully integrated, modular Axtrax AVE dual el. drive system the next generation of low-floor el. portal axles for city buses. Also, ZF presented its new CeTrax and AxTrax 2 el. central and axle drive platform, an integrated modular el. drive system for light, medium and heavy CVs. This constitutes ZF’s latest e-mobility solution supporting the industry’s transformation towards a more sustainable future. For long-distance trucks, ZF expects a greater penetration of fleets with fuel cell systems. Result: About one fifth of our R&D expenditure is apportioned to our CVS division. Thereof, about one fifth is allocated towards the development of EV-drivetrains for the transport sector. The share is planned to increase recognizably over the next years. Our portfolio already covers today all existing and new drivetrain technologies – with our transmissions incl. Hybrid supporting ICE, H2 combustion or e-Fuel applications, and our e-mobility solutions supporting Battery-Electric, Fuel-Cell Vehicle concepts. [Add row]

(3.1.2) Provide the amount and proportion of your financial metrics from the reporting year that are vulnerable to the substantive effects of environmental risks.

Climate change

(3.1.2.1) Financial metric

Select from:

Revenue

(3.1.2.2) Amount of financial metric vulnerable to transition risks for this environmental issue (unit currency as selected in 1.2)

0

(3.1.2.3) % of total financial metric vulnerable to transition risks for this environmental issue

Select from:

Less than 1%

(3.1.2.4) Amount of financial metric vulnerable to physical risks for this environmental issue (unit currency as selected in 1.2)

0

(3.1.2.5) % of total financial metric vulnerable to physical risks for this environmental issue

Select from:

Less than 1%

(3.1.2.7) Explanation of financial figures

Throughout 2024, ZF is conducting a climate scenario analysis which is in line with the climate-risk related requirements of the CSRD/ ESRS E1 Climate Change. Starting point was a qualitative scenario analysis for scoping purposes across the entire value chain of ZF, considering various climate scenarios and time horizons. First results of that qualitative scenario analysis reveal, amongst others, riverine flooding as relevant physical climate risk and automotive market transition from internal combustion engines to e-mobility as major transitional climate risk respectively opportunity. Until year end 2024, ZF will quantify both gross and net effects of those climate-related risks, carrying out a deep dive analysis incl. resilience analysis. For now, ZF cannot provide an answer on financial metrics effects. Therefore, and due to the ongoing analysis, "0" has been selected as amount of financial metric vulnerable to transition and physical risks, respectively "less than 1%" has been selected as share of total financial metric vulnerable to transition and physical risks. Moreover, ZF may make use of the phase-in option described in "Appendix C List of phased-in Disclosure Requirements" of the CSRD/ ESRS 1 General Requirements, which means: ZF may comply with ESRS E1-9 by reporting only qualitative disclosures for the first 3 years of preparation of its sustainability statement, if it is impracticable to prepare quantitative disclosures.

Water

(3.1.2.1) Financial metric

Select from:

Revenue

(3.1.2.2) Amount of financial metric vulnerable to transition risks for this environmental issue (unit currency as selected in 1.2)

0

(3.1.2.3) % of total financial metric vulnerable to transition risks for this environmental issue

Select from:

Less than 1%

(3.1.2.4) Amount of financial metric vulnerable to physical risks for this environmental issue (unit currency as selected in 1.2)

0

(3.1.2.5) % of total financial metric vulnerable to physical risks for this environmental issue

Select from:

Less than 1%

(3.1.2.7) Explanation of financial figures

Throughout 2024, ZF is conducting a climate scenario analysis which is in line with the climate-risk related requirements of the CSRD/ ESRS E1 Climate Change. Starting point was a qualitative scenario analysis for scoping purposes across the entire value chain of ZF, considering various climate scenarios and time horizons. First results of that qualitative scenario analysis reveal, amongst others, riverine flooding as relevant physical climate risk and automotive market transition from internal combustion engines to e-mobility as major transitional climate risk respectively opportunity. Until year end 2024, ZF will quantify both gross and net effects of those climate-related risks, carrying out a deep dive analysis incl. resilience analysis. For now, ZF cannot provide an answer on financial metrics effects. Moreover, ZF may make use of the phase-in option described in "Appendix C List of phased-in Disclosure Requirements" of the CSRD/ ESRS 1 General Requirements, which

means: ZF may comply with ESRS E1-9 by reporting only qualitative disclosures for the first 3 years of preparation of its sustainability statement, if it is impracticable to prepare quantitative disclosures.

[Add row]

(3.2) Within each river basin, how many facilities are exposed to substantive effects of water-related risks, and what percentage of your total number of facilities does this represent?

Row 1

(3.2.1) Country/Area & River basin

United Arab Emirates

Other, please specify :Arabian Peninsula

(3.2.2) Value chain stages where facilities at risk have been identified in this river basin

Select all that apply

Direct operations

(3.2.3) Number of facilities within direct operations exposed to water-related risk in this river basin

1

(3.2.4) % of your organization's total facilities within direct operations exposed to water-related risk in this river basin

Select from:

Less than 1%

(3.2.10) % organization's total global revenue that could be affected

Select from:

Unknown

(3.2.11) Please explain

Revenue is confidential. Extrem high water-stress. Water basin according to WWF-water-risk filter.

Row 2

(3.2.1) Country/Area & River basin

South Africa

Other, please specify :Indian Ocean

(3.2.2) Value chain stages where facilities at risk have been identified in this river basin

Select all that apply

Direct operations

(3.2.3) Number of facilities within direct operations exposed to water-related risk in this river basin

1

(3.2.4) % of your organization's total facilities within direct operations exposed to water-related risk in this river basin

Select from:

Less than 1%

(3.2.10) % organization's total global revenue that could be affected

Select from:

Unknown

(3.2.11) Please explain

Revenue is confidential. Extrem high water-stress. Water basin according to WWF-water-risk filter.

Row 3

(3.2.1) Country/Area & River basin

Spain

Other, please specify :Mediterranean Sea

(3.2.2) Value chain stages where facilities at risk have been identified in this river basin

Select all that apply

Direct operations

(3.2.3) Number of facilities within direct operations exposed to water-related risk in this river basin

2

(3.2.4) % of your organization's total facilities within direct operations exposed to water-related risk in this river basin

Select from:

Less than 1%

(3.2.10) % organization's total global revenue that could be affected

Select from:

Unknown

(3.2.11) Please explain

Revenue is confidential. Extrem high water-stress. Water basin according to WWF-water-risk filter.

Row 4

(3.2.1) Country/Area & River basin

Spain

Ebro

(3.2.2) Value chain stages where facilities at risk have been identified in this river basin

Select all that apply

Direct operations

(3.2.3) Number of facilities within direct operations exposed to water-related risk in this river basin

1

(3.2.4) % of your organization's total facilities within direct operations exposed to water-related risk in this river basin

Select from:

Less than 1%

(3.2.10) % organization's total global revenue that could be affected

Select from:

Unknown

(3.2.11) Please explain

Revenue is confidential. Extrem high water-stress. Water basin according to WWF-water-risk filter.

Row 5

(3.2.1) Country/Area & River basin

Spain

Douro

(3.2.2) Value chain stages where facilities at risk have been identified in this river basin

Select all that apply

- Direct operations

(3.2.3) Number of facilities within direct operations exposed to water-related risk in this river basin

1

(3.2.4) % of your organization's total facilities within direct operations exposed to water-related risk in this river basin

Select from:

- Less than 1%

(3.2.10) % organization's total global revenue that could be affected

Select from:

- Unknown

(3.2.11) Please explain

Revenue is confidential. Extrem high water-stress. Water basin according to WWF-water-risk filter.

Row 6

(3.2.1) Country/Area & River basin

Mexico

- Other, please specify :North Pacific

(3.2.2) Value chain stages where facilities at risk have been identified in this river basin

Select all that apply

- Direct operations

(3.2.3) Number of facilities within direct operations exposed to water-related risk in this river basin

2

(3.2.4) % of your organization's total facilities within direct operations exposed to water-related risk in this river basin

Select from:

- Less than 1%

(3.2.10) % organization's total global revenue that could be affected

Select from:

- Unknown

(3.2.11) Please explain

Revenue is confidential. Extrem high water-stress. Water basin according to WWF-water-risk filter.

Row 7

(3.2.1) Country/Area & River basin

United States of America

- Colorado River (Caribbean Sea)

(3.2.2) Value chain stages where facilities at risk have been identified in this river basin

Select all that apply

- Direct operations

(3.2.3) Number of facilities within direct operations exposed to water-related risk in this river basin

(3.2.4) % of your organization's total facilities within direct operations exposed to water-related risk in this river basin

Select from:

Less than 1%

(3.2.10) % organization's total global revenue that could be affected

Select from:

Unknown

(3.2.11) Please explain

*Revenue is confidential. Extrem high water-stress. Water basin according to WWF-water-risk filter.
[Add row]*

(3.3) In the reporting year, was your organization subject to any fines, enforcement orders, and/or other penalties for water-related regulatory violations?**(3.3.1) Water-related regulatory violations**

Select from:

No

(3.3.3) Comment

*Wastewater loads are managed at local level, with relevant deviations from legal requirements and permits being reviewed at Group level through audits and management reviews. In the year under review, no significant environment impacting spills were reported.
[Fixed row]*

(3.5) Are any of your operations or activities regulated by a carbon pricing system (i.e. ETS, Cap & Trade or Carbon Tax)?

Select from:

No, and we do not anticipate being regulated in the next three years

(3.6) Have you identified any environmental opportunities which have had a substantive effect on your organization in the reporting year, or are anticipated to have a substantive effect on your organization in the future?

	Environmental opportunities identified
Climate change	Select from: <input checked="" type="checkbox"/> Yes, we have identified opportunities, and some/all are being realized
Water	Select from: <input checked="" type="checkbox"/> Yes, we have identified opportunities, and some/all are being realized

[Fixed row]

(3.6.1) Provide details of the environmental opportunities identified which have had a substantive effect on your organization in the reporting year, or are anticipated to have a substantive effect on your organization in the future.

Climate change

(3.6.1.1) Opportunity identifier

Select from:

Opp1

(3.6.1.3) Opportunity type and primary environmental opportunity driver

Products and services

- Increased sales of existing products and services

(3.6.1.4) Value chain stage where the opportunity occurs

Select from:

- Downstream value chain

(3.6.1.5) Country/area where the opportunity occurs

Select all that apply

- | | |
|--|--|
| <input checked="" type="checkbox"/> China | <input checked="" type="checkbox"/> Brazil |
| <input checked="" type="checkbox"/> India | <input checked="" type="checkbox"/> Canada |
| <input checked="" type="checkbox"/> Italy | <input checked="" type="checkbox"/> France |
| <input checked="" type="checkbox"/> Japan | <input checked="" type="checkbox"/> Mexico |
| <input checked="" type="checkbox"/> Spain | <input checked="" type="checkbox"/> Poland |
| <input checked="" type="checkbox"/> Serbia | <input checked="" type="checkbox"/> Denmark |
| <input checked="" type="checkbox"/> Turkey | <input checked="" type="checkbox"/> Germany |
| <input checked="" type="checkbox"/> Austria | <input checked="" type="checkbox"/> Hungary |
| <input checked="" type="checkbox"/> Belgium | <input checked="" type="checkbox"/> Romania |
| <input checked="" type="checkbox"/> Czechia | <input checked="" type="checkbox"/> Malaysia |
| <input checked="" type="checkbox"/> Portugal | <input checked="" type="checkbox"/> Australia |
| <input checked="" type="checkbox"/> Slovakia | <input checked="" type="checkbox"/> Singapore |
| <input checked="" type="checkbox"/> Thailand | <input checked="" type="checkbox"/> Netherlands |
| <input checked="" type="checkbox"/> Viet Nam | <input checked="" type="checkbox"/> Switzerland |
| <input checked="" type="checkbox"/> Argentina | <input checked="" type="checkbox"/> South Africa |
| <input checked="" type="checkbox"/> Taiwan, China | |
| <input checked="" type="checkbox"/> Republic of Korea | |
| <input checked="" type="checkbox"/> United Arab Emirates | |
| <input checked="" type="checkbox"/> United States of America | |

- United Kingdom of Great Britain and Northern Ireland

(3.6.1.8) Organization specific description

ZF has 40 years of experience in gearboxes for wind turbines has proven to be a true innovator in the wind industry. With its Wind Power Business Unit, ZF is a leading global manufacturer of gearboxes for wind turbines. With state-of-the-art manufacturing plants and worldwide service locations, ZF Wind Power is dedicated to delivering advanced gearbox solutions and services on a global scale. About one fourth of all turbines around the globe have a ZF transmission. More than 80,000 ZF gearboxes power wind turbines worldwide, producing a total output of 180 gigawatts. This amount of power is enough to supply 150 million households with climate-neutral energy. As a result, ZF's advanced wind turbines technology and service solutions contribute to the transformation of the global energy system. The demand for wind power is expected to increase further. According to an assessment of the International Renewable Energy Agency (IRENA) in 2020, renewable energies would need to climb to 86 percent of electricity generation by 2050 to achieve the objectives of the Paris Agreement. In this scenario, wind energy is set to become one of the biggest drivers of the global energy transition, fulfilling more than one-third of total electricity demand, and this at strongly increasing energy generation needs. ZF considers the expected growth of wind power as business opportunity. ZF anticipates an increased demand for its gearboxes and consequently, an increase in revenues for ZF.

(3.6.1.9) Primary financial effect of the opportunity

Select from:

- Increased revenues resulting from increased demand for products and services

(3.6.1.10) Time horizon over which the opportunity is anticipated to have a substantive effect on the organization

Select all that apply

- Medium-term

(3.6.1.11) Likelihood of the opportunity having an effect within the anticipated time horizon

Select from:

- Likely (66–100%)

(3.6.1.12) Magnitude

Select from:

- Medium

(3.6.1.14) Anticipated effect of the opportunity on the financial position, financial performance and cash flows of the organization in the selected future time horizons

ZF Wind Power develops, together with its partners, unique gearbox designs and services to guarantee the highest quality at competitive costs. Advanced technology and service solutions contribute to the transformation of the global energy system, in which reliable, robust and efficient products and systems conserve precious resources. This way we empower a sustainable future together with our partners. As part of ZF, ZF Wind Power contributes significantly to the company's success today and in the future.

(3.6.1.15) Are you able to quantify the financial effects of the opportunity?

Select from:

Yes

(3.6.1.19) Anticipated financial effect figure in the medium-term - minimum (currency)

1000000000

(3.6.1.20) Anticipated financial effect figure in the medium-term - maximum (currency)

1600000000

(3.6.1.23) Explanation of financial effect figures

ZF's Wind Power Business Unit intends to grow from 2020 to 2027 from about 1 billion to about 1.6 billion in revenues. The potential financial impact figure is based on the projected market development on renewable energies and wind power. The opportunity occurs worldwide. Since a option "worldwide" was not available, we selected the countries in which ZF operates.

(3.6.1.24) Cost to realize opportunity

149000000

(3.6.1.25) Explanation of cost calculation

From 2019 to 2023 ZF's R&D expenditure in its wind power business amounted to 149 million (26 million in 2019 27 million in 2020 24 million in 2021 38 million in 2022 34 million in 2023). See also ZF Green Finance Report 2024, p. 10:

https://kpmg.bryter.io/s/wEstKqupRqOpUAW27LPLHw/atlas_automation_report_service_01_en?id0ae15053-84bf-4a07-acd6-0af8c5b6933a&vara&ma.

(3.6.1.26) Strategy to realize opportunity

Situation: The demand in renewable energy in general and specifically in wind power is expected to grow. Task: The growth of wind power market comes with increasingly demanding technical requirements. Action: Therefore, ZF is investing continuously and significantly in research and development (R&D) of its wind power business. In 2023 alone, ZF has invested 34 million in R&D. From 2019 to 2023 ZF's R&D expenditure in its wind power business amounted to 149 million (26 million in 2019 27 million in 2020 24 million in 2021 38 million in 2022 34 million in 2023). See also ZF Green Finance Report 2024, p. 10:

https://kpmg.bryter.io/s/wEstKqupRqOpUAW27LPLHw/atlas_automation_report_service_01_en?id0ae15053-84bf-4a07-acd6-0af8c5b6933a&vara&ma. Result: Specifically, as an important investment in R&D of ZF Wind Power, ZF is building the world's most powerful and largest test bench for wind turbines. Dynamic developments in the wind power market require a whole-new level of testing and validation of modular drivetrains. With the expansion of ZF Wind Power's portfolio from the serial gearbox to serial powertrain production, the manufacturing processes will be adapted, and the end-of-line test process upgraded. ZF Wind Power can design, validate and produce the next generation of wind turbine powertrains up to 30 MW. These advanced wind gearboxes and powertrains will accelerate the shift from climate-damaging fuels to clean wind energy.

Water

(3.6.1.1) Opportunity identifier

Select from:

Opp1

(3.6.1.3) Opportunity type and primary environmental opportunity driver

Resource efficiency

Reduced water usage and consumption

(3.6.1.4) Value chain stage where the opportunity occurs

Select from:

Direct operations

(3.6.1.5) Country/area where the opportunity occurs

Select all that apply

- China
- India
- Italy
- Japan
- Spain
- Serbia
- Turkey
- Austria
- Belgium
- Czechia
- Portugal
- Slovakia
- Thailand
- Viet Nam
- Argentina
- Taiwan, China
- Republic of Korea
- United Arab Emirates
- United States of America
- United Kingdom of Great Britain and Northern Ireland
- Brazil
- Canada
- France
- Mexico
- Poland
- Denmark
- Germany
- Hungary
- Romania
- Malaysia
- Australia
- Singapore
- Netherlands
- Switzerland
- South Africa

(3.6.1.6) River basin where the opportunity occurs

Select all that apply

- Amur

(3.6.1.8) Organization specific description

ZF considers water withdrawal for production at all ZF locations a major environmental issue since the use of freshwater will become increasingly restricted in the future. Water is used in production, e.g., for surface treatment processes, washing, rinsing and cleaning, and as a coolant. It is also required for non-production purposes, such as sanitation and construction projects and as drinking water in the cafeteria. ZF is committed to installing water-saving equipment that exceeds statutory requirements. Some of ZF's production locations, e.g., in Spain, Mexico, South Africa and China, are in areas with significant water scarcity or with significant water shortage. In these areas, permits for water withdrawal for production purposes can occasionally be restricted. If water scarcity persists, this situation could worsen or affect further regions. This may result in a need for increased investment or expenses to cover the technical modernization of production equipment. ZF set the target of reducing the intensity of water withdrawal at these sites by 2% per year. For all other locations, a 1% reduction is being targeted on an annual basis. The base year for both targets is 2019. Progress is monitored and managed. ZF includes all production, administrative and research locations in its efficiency programs.

(3.6.1.9) Primary financial effect of the opportunity

Select from:

- Reduced direct costs

(3.6.1.10) Time horizon over which the opportunity is anticipated to have a substantive effect on the organization

Select all that apply

- Short-term

(3.6.1.11) Likelihood of the opportunity having an effect within the anticipated time horizon

Select from:

- Likely (66–100%)

(3.6.1.12) Magnitude

Select from:

- Low

(3.6.1.14) Anticipated effect of the opportunity on the financial position, financial performance and cash flows of the organization in the selected future time horizons

Reducing water demand has a positive saving impact and reduces operational risks e.g. in terms of dependency on water especially by considering that water is getting more and more scarce in many areas all over the world which will increase the risk of (temporary) shut-down of water-supply which can lead to production-interruption and thus in financial losses in some cases.

(3.6.1.15) Are you able to quantify the financial effects of the opportunity?

Select from:

Yes

(3.6.1.17) Anticipated financial effect figure in the short-term - minimum (currency)

212000

(3.6.1.18) Anticipated financial effect figure in the short-term – maximum (currency)

212000

(3.6.1.23) Explanation of financial effect figures

49 water-related projects were realized at ZF in 2023. They are expected to save about nearly 51,000 m³ water and 212.000 p.a. The savings result from the reduction of the water-demand by recycling/reusing water, optimizing processes, installing water-saving-equipment and checking existing installations and infrastructure for leakages. The profitability calculation is always carried out by the respective location. The annual financial saving is calculated by offsetting the financial saving due to the reduced water demand against any higher operating costs incurred. The opportunity occurs worldwide. Since a option "worldwide" was not available, we selected the countries in which ZF operates. River basins: One of our locations in Changchun, which is located in the river basin "Amur", was able to save about 5,000 m³ water p.a. They identified three water-streams that meet the quality-criteria for allowing to be re-used (e.g. waste-water from equipment conditioning treated by a reverse-osmosis-installation). Until then the water has been discharged into the sewer. Now it is being collected in a water-tank, then supplied to the canteen for washing and bathrooms. Hot water that cannot be used up for heat recovery goes back to the production water-supply. The yearly savings are expected to be about 3,000.

(3.6.1.24) Cost to realize opportunity

186000

(3.6.1.25) Explanation of cost calculation

The profitability calculation is always carried out by the respective location. The final figures regarding costs and monetary and water savings are then reported in the Group-wide reporting system.

(3.6.1.26) Strategy to realize opportunity

The opportunity to reduce ZF's water-demand and therefore the dependency on water and to reduce ZF's indirect/operating costs is realized by increasing water efficiency. To push the agenda ZF has two water-efficiency targets in place (-1% p.a. for all locations, except for location identified as located in high-water stress areas: -2% p.a. until 2025, base-year 2019). With our EHS-management-system, ISO 14001 certificates and water-targets in place the locations are obliged to regularly check for water-efficiency and water-quality improving opportunities. Our regional- and divisional EHS-organization is managing the locations in their area of responsibility. Twice a year, the locations must report their status regarding target achievement and their plan for continual improvement to their respective location manager. Furthermore, since 2023, the locations have been obliged to successively maintain all of their water-saving measures in our global reporting system from the time of conceptualization.

Climate change

(3.6.1.1) Opportunity identifier

Select from:

Opp2

(3.6.1.3) Opportunity type and primary environmental opportunity driver

Resource efficiency

Cost savings

(3.6.1.4) Value chain stage where the opportunity occurs

Select from:

Direct operations

(3.6.1.5) Country/area where the opportunity occurs

Select all that apply

China

Brazil

- ✓ India
- ✓ Italy
- ✓ Japan
- ✓ Spain
- ✓ Serbia
- ✓ Turkey
- ✓ Austria
- ✓ Belgium
- ✓ Czechia
- ✓ Portugal
- ✓ Slovakia
- ✓ Thailand
- ✓ Viet Nam
- ✓ Argentina
- ✓ Taiwan, China
- ✓ Republic of Korea
- ✓ United Arab Emirates
- ✓ United States of America
- ✓ United Kingdom of Great Britain and Northern Ireland
- ✓ Canada
- ✓ France
- ✓ Mexico
- ✓ Poland
- ✓ Denmark
- ✓ Germany
- ✓ Hungary
- ✓ Romania
- ✓ Malaysia
- ✓ Australia
- ✓ Singapore
- ✓ Netherlands
- ✓ Switzerland
- ✓ South Africa

(3.6.1.8) Organization specific description

Energy efficiency presents an opportunity to reduce ZF's Scope 1 and 2 emissions and to reduce ZF's indirect/operating costs. Energy efficiency measures pay into ZF's ambition to achieve net zero emissions in all three emission scopes by 2040. To achieve decarbonization of its locations, ZF focuses on two main levers: Energy efficiency and the switch to green energy. Energy efficiency and avoidance of energy consumption are given priorities for the company. ZF includes all production, administrative and research locations in its efficiency programs. By 2030, the energy efficiency of ZF locations is to be increased by minimum of 2% energy efficiency p.a. until 2030, 20% compared to 2019. All ZF locations regularly evaluate their energy profiles and energy related activities. This includes conducting audits, identifying potentials for improvement, and defining measures for increasing energy efficiency and reducing consumption. Campaigns to increase efficiency and reduce energy consumption are planned and implemented at all locations, in accordance with the local levels of consumption and target achievement. Each ZF location is expected to establish and maintain standards to improve employee awareness and to promote behavioural changes as well as standards for demand or peak-load management according to local requirements. In order to reduce energy consumption, detailed energy programs, such as the ZF Energy Basics, help the ZF locations to achieve their targets.

(3.6.1.9) Primary financial effect of the opportunity

Select from:

- Reduced indirect (operating) costs

(3.6.1.10) Time horizon over which the opportunity is anticipated to have a substantive effect on the organization

Select all that apply

- Medium-term

(3.6.1.11) Likelihood of the opportunity having an effect within the anticipated time horizon

Select from:

- Likely (66–100%)

(3.6.1.12) Magnitude

Select from:

- Medium

(3.6.1.14) Anticipated effect of the opportunity on the financial position, financial performance and cash flows of the organization in the selected future time horizons

Advancement in energy efficiency have a positive savings effect on the company's cash flow and financial performance today and in the future.

(3.6.1.15) Are you able to quantify the financial effects of the opportunity?

Select from:

- Yes

(3.6.1.19) Anticipated financial effect figure in the medium-term - minimum (currency)

10000000

(3.6.1.20) Anticipated financial effect figure in the medium-term - maximum (currency)

18000000

(3.6.1.23) Explanation of financial effect figures

ZF has implemented or initiated about 1.000 projects in 2023 which led to more than 166 GWh in energy savings. This corresponds to the electricity consumption of 40,500 average households, an avoidance of 66,700 tons of CO2e emissions and to annual savings of 18 million. The savings result from e.g., reductions in energy and maintenance cost. The opportunity occurs worldwide. Since a option "worldwide" was not available, we selected the countries in which ZF operates.

(3.6.1.24) Cost to realize opportunity

25000000

(3.6.1.25) Explanation of cost calculation

To realize the opportunity, we expect yearly investments in the range of 20–30 million by 2030. In 2023, the total investment for the implementation of energy efficiency projects was 27 million.

(3.6.1.26) Strategy to realize opportunity

Situation: The opportunity to reduce ZF's Scope 1 and 2 emissions and to reduce ZF's indirect/operating costs is realized by increasing energy efficiency. Task: By 2030, the energy efficiency of ZF locations is to be increased by minimum of 2% energy efficiency p.a. until 2030, 20% compared to 2019. Action: A cross-functional and cross-divisional team, under coordination of Corporate Operations and with the participation of EHS and Real Estate Management, works on increasing energy efficiency. This team manages a corresponding program and reports to Senior Management. Target achievement on energy efficiency and individual projects are monitored and controlled through KPIs within the environmental and energy management system in conformity with ISO 14001 and ISO 50001. To manage all energy efficiency projects on corporate level a rolling project roadmap is implemented. Progress tracking (including costs, investment and saving data) is conducted on a monthly basis, where all identified projects are monitored and managed related to maturity level.

Climate change

(3.6.1.1) Opportunity identifier

Select from:

Opp3

(3.6.1.3) Opportunity type and primary environmental opportunity driver

Capital flow and financing

- Access to new financing options

(3.6.1.4) Value chain stage where the opportunity occurs

Select from:

- Direct operations

(3.6.1.5) Country/area where the opportunity occurs

Select all that apply

- | | |
|---|--|
| <input checked="" type="checkbox"/> China | <input checked="" type="checkbox"/> Brazil |
| <input checked="" type="checkbox"/> India | <input checked="" type="checkbox"/> Canada |
| <input checked="" type="checkbox"/> Italy | <input checked="" type="checkbox"/> France |
| <input checked="" type="checkbox"/> Japan | <input checked="" type="checkbox"/> Mexico |
| <input checked="" type="checkbox"/> Spain | <input checked="" type="checkbox"/> Poland |
| <input checked="" type="checkbox"/> Serbia | <input checked="" type="checkbox"/> Denmark |
| <input checked="" type="checkbox"/> Turkey | <input checked="" type="checkbox"/> Germany |
| <input checked="" type="checkbox"/> Austria | <input checked="" type="checkbox"/> Hungary |
| <input checked="" type="checkbox"/> Belgium | <input checked="" type="checkbox"/> Romania |
| <input checked="" type="checkbox"/> Czechia | <input checked="" type="checkbox"/> Malaysia |
| <input checked="" type="checkbox"/> Portugal | <input checked="" type="checkbox"/> Australia |
| <input checked="" type="checkbox"/> Slovakia | <input checked="" type="checkbox"/> Singapore |
| <input checked="" type="checkbox"/> Thailand | <input checked="" type="checkbox"/> Netherlands |
| <input checked="" type="checkbox"/> Viet Nam | <input checked="" type="checkbox"/> Switzerland |
| <input checked="" type="checkbox"/> Argentina | <input checked="" type="checkbox"/> South Africa |
| <input checked="" type="checkbox"/> Taiwan, China | |
| <input checked="" type="checkbox"/> Republic of Korea | |

- United Arab Emirates
- United States of America
- United Kingdom of Great Britain and Northern Ireland

(3.6.1.8) Organization specific description

ZF considers green financial instruments as business opportunity for an increased access to capital. In the context of Sustainable Finance, regulators, financial institutions, and credit rating agencies are calling for greater transparency and ESG commitment. ZF has responded to this with its sustainability strategy, the Green Finance Framework (GFF) and extended sustainability reporting. We are actively connecting our financing with the sustainability strategy. ZF is also preparing for the upcoming requirements of the EU taxonomy to be able to classify investments and revenues according to sustainability criteria. ZF will further develop the GFF in accordance with evolving market standards and the establishment of the EU taxonomy. Transparent information about the allocated proceeds and the climate effects of the financed projects is communicated in the annual Green Finance Report. As a result, sustainable financing instruments become an important part of the overall financing mix. ZF was the first automotive supplier in Germany to issue green bonds. Green bonds, e.g., offer opportunities looking at potential internal requirements from investors or banks in fulfilling their EU taxonomy alignment target.. Besides, ZF also implemented an ESG-concept in its Revolving Credit Facility (RCF). In September 2022, ZF successfully placed an ESG-linked bonded loan, for which the annual interest is linked to the development of ZF's EcoVadis rating.

(3.6.1.9) Primary financial effect of the opportunity

Select from:

- Increased access to capital

(3.6.1.10) Time horizon over which the opportunity is anticipated to have a substantive effect on the organization

Select all that apply

- Short-term

(3.6.1.11) Likelihood of the opportunity having an effect within the anticipated time horizon

Select from:

- Virtually certain (99–100%)

(3.6.1.12) Magnitude

Select from:

- Medium

(3.6.1.14) Anticipated effect of the opportunity on the financial position, financial performance and cash flows of the organization in the selected future time horizons

ZF considers green financial instruments as business opportunity for an increased access to capital.

(3.6.1.15) Are you able to quantify the financial effects of the opportunity?

Select from:

Yes

(3.6.1.17) Anticipated financial effect figure in the short-term - minimum (currency)

0

(3.6.1.18) Anticipated financial effect figure in the short-term – maximum (currency)

20000000

(3.6.1.23) Explanation of financial effect figures

The estimated figure captures a refinancing advantage and is based on the existing sustainable financing instruments. The estimated figure is comprised by two input factors. First, we have a financial benefit if we meet the targets of the underlying ESG-concept in the specific financing instruments. Second, we observe a higher investor demand during book building and received specific “greeniums” (pricing advantage) when issuing green bonds compared to conventional bonds. The estimation is based on the current outstanding volumes of our sustainable financing instruments. The opportunity occurs worldwide. Since a option “worldwide” was not available, we selected the countries in which ZF operates.

(3.6.1.24) Cost to realize opportunity

0

(3.6.1.25) Explanation of cost calculation

In setting up sustainable financing instruments, the large majority of cost arises from internal resources. Costs for internal resources are not specified. Comparing a conventional transaction vs. a sustainable one, the additional external costs are minor. Therefore, the cost to realize the opportunity are indicated as “0”.

(3.6.1.26) Strategy to realize opportunity

Situation: We are actively connecting our financing with the sustainability strategy to finance investments towards the company's "Next Generation Mobility" strategy. Task: Actively connecting our financing with the sustainability strategy requires us to take action with regard to process and organization. Executing our financing strategy involves decision-making on the concrete financing mix. Action: We make sure to involve all business areas in ZF (e.g., controlling, finance/treasury, sustainability department or R&D). Decisions on the financing mix are taken on the basis of a variety of factors, among others strategic fit, sustainability component and financing cost.

Water

(3.6.1.1) Opportunity identifier

Select from:

- Opp3

(3.6.1.3) Opportunity type and primary environmental opportunity driver

Capital flow and financing

- Access to new financing options

(3.6.1.4) Value chain stage where the opportunity occurs

Select from:

- Direct operations

(3.6.1.5) Country/area where the opportunity occurs

Select all that apply

- China
- India
- Italy
- Japan
- Spain
- Brazil
- Canada
- France
- Mexico
- Poland

- Serbia
- Turkey
- Austria
- Belgium
- Czechia
- Portugal
- Slovakia
- Thailand
- Viet Nam
- Argentina
- Taiwan, China
- Republic of Korea
- United Arab Emirates
- United States of America
- United Kingdom of Great Britain and Northern Ireland
- Denmark
- Germany
- Hungary
- Romania
- Malaysia
- Australia
- Singapore
- Netherlands
- Switzerland
- South Africa

(3.6.1.6) River basin where the opportunity occurs

Select all that apply

- Other, please specify :all sites globally

(3.6.1.8) Organization specific description

ZF considers green financial instruments as business opportunity for an increased access to capital. In the context of Sustainable Finance, regulators, financial institutions, and credit rating agencies are calling for greater transparency and ESG commitment. ZF has responded to this with its sustainability strategy, the Green Finance Framework (GFF) and extended sustainability reporting. We are actively connecting our financing with the sustainability strategy. ZF is also preparing for the upcoming requirements of the EU taxonomy to be able to classify investments and revenues according to sustainability criteria. ZF will further develop the GFF in accordance with evolving market standards and the establishment of the EU taxonomy. Transparent information about the allocated proceeds and the climate effects of the financed projects is communicated in the annual Green Finance Report. As a result, sustainable financing instruments become an important part of the overall financing mix. ZF was the first automotive supplier in Germany to issue green bonds. Green bonds, e.g., offer opportunities looking at potential internal requirements from investors or banks in fulfilling their EU taxonomy alignment target.. Besides, ZF also implemented an ESG-concept in its Revolving Credit Facility (RCF). In September 2022, ZF successfully placed an ESG-linked bonded loan, for which the annual interest is linked to the development of ZF's EcoVadis rating.

(3.6.1.9) Primary financial effect of the opportunity

Select from:

- Increased access to capital

(3.6.1.10) Time horizon over which the opportunity is anticipated to have a substantive effect on the organization

Select all that apply

- Short-term

(3.6.1.11) Likelihood of the opportunity having an effect within the anticipated time horizon

Select from:

- Virtually certain (99–100%)

(3.6.1.12) Magnitude

Select from:

- Medium

(3.6.1.14) Anticipated effect of the opportunity on the financial position, financial performance and cash flows of the organization in the selected future time horizons

ZF considers green financial instruments as business opportunity for an increased access to capital.

(3.6.1.15) Are you able to quantify the financial effects of the opportunity?

Select from:

- Yes

(3.6.1.17) Anticipated financial effect figure in the short-term - minimum (currency)

0

(3.6.1.18) Anticipated financial effect figure in the short-term – maximum (currency)

20000000

(3.6.1.23) Explanation of financial effect figures

The estimated figure captures a refinancing advantage and is based on the existing sustainable financing instruments. The estimated figure is comprised by two input factors. First, we have a financial benefit if we meet the targets of the underlying ESG-concept in the specific financing instruments. Second, we observe a higher investor demand during book building and received specific “greeniums” (pricing advantage) when issuing green bonds compared to conventional bonds. The estimation is based on the current outstanding volumes of our sustainable financing instruments. The opportunity occurs worldwide. Since a option “worldwide” was not available, we selected the countries in which ZF operates.

(3.6.1.24) Cost to realize opportunity

0

(3.6.1.25) Explanation of cost calculation

In setting up sustainable financing instruments, the large majority of cost arises from internal resources. Costs for internal resources are not specified. Comparing a conventional transaction vs. a sustainable one, the additional external costs are minor. Therefore, the cost to realize the opportunity are indicated as “0”.

(3.6.1.26) Strategy to realize opportunity

Situation: We are actively connecting our financing with the sustainability strategy to finance investments towards the company’s “Next Generation Mobility” strategy.

Task: Actively connecting our financing with the sustainability strategy requires us to take action with regard to process and organization. Executing our financing strategy involves decision-making on the concrete financing mix. Action: We make sure to involve all business areas in ZF (e.g., controlling, finance/treasury, sustainability department or R&D). Decisions on the financing mix are taken on the basis of a variety of factors, among others strategic fit, sustainability component and financing cost.

[Add row]

(3.6.2) Provide the amount and proportion of your financial metrics in the reporting year that are aligned with the substantive effects of environmental opportunities.

Climate change

(3.6.2.1) Financial metric

Select from:

Other, please specify :confidential

(3.6.2.2) Amount of financial metric aligned with opportunities for this environmental issue (unit currency as selected in 1.2)

0

(3.6.2.3) % of total financial metric aligned with opportunities for this environmental issue

Select from:

100%

(3.6.2.4) Explanation of financial figures

ZF is no yet reporting this financial metrics as this is confidential, but the company prepares for requirements of the European Corporate Sustainability Reporting Directive (CSRD) and the corresponding European Sustainability Reporting Standards (ESRS) to include the relevant financial implications in the future.

Water

(3.6.2.1) Financial metric

Select from:

Other, please specify :confidential

(3.6.2.2) Amount of financial metric aligned with opportunities for this environmental issue (unit currency as selected in 1.2)

0

(3.6.2.3) % of total financial metric aligned with opportunities for this environmental issue

Select from:

100%

(3.6.2.4) Explanation of financial figures

ZF is no yet reporting this financial metrics as this is confidential, but the company prepares for requirements of the European Corporate Sustainability Reporting Directive (CSRD) and the corresponding European Sustainability Reporting Standards (ESRS) to include the relevant financial implications in the future.
[Add row]

C4. Governance

(4.1) Does your organization have a board of directors or an equivalent governing body?

(4.1.1) Board of directors or equivalent governing body

Select from:

Yes

(4.1.2) Frequency with which the board or equivalent meets

Select from:

More frequently than quarterly

(4.1.3) Types of directors your board or equivalent is comprised of

Select all that apply

Executive directors or equivalent

(4.1.4) Board diversity and inclusion policy

Select from:

No

[Fixed row]

(4.1.1) Is there board-level oversight of environmental issues within your organization?

Climate change

(4.1.1.1) Board-level oversight of this environmental issue

Select from:

Yes

Water

(4.1.1.1) Board-level oversight of this environmental issue

Select from:

Yes

Biodiversity

(4.1.1.1) Board-level oversight of this environmental issue

Select from:

No, but we plan to within the next two years

(4.1.1.2) Primary reason for no board-level oversight of this environmental issue

Select from:

Not an immediate strategic priority

(4.1.1.3) Explain why your organization does not have board-level oversight of this environmental issue

So far, there is no complete picture of the impact of our own business and supply chain on biodiversity. We are at the beginning of activities in this field, comparable to early measures of climate protection. We recognize the need to increase biodiversity ambitions and prepare our organization to contribute to a regenerative economy.

[Fixed row]

(4.1.2) Identify the positions (do not include any names) of the individuals or committees on the board with accountability for environmental issues and provide details of the board's oversight of environmental issues.

Climate change

(4.1.2.1) Positions of individuals or committees with accountability for this environmental issue

Select all that apply

- Chief Executive Officer (CEO)
- Chief Financial Officer (CFO)
- Other C-Suite Officer

(4.1.2.2) Positions' accountability for this environmental issue is outlined in policies applicable to the board

Select from:

- Yes

(4.1.2.3) Policies which outline the positions' accountability for this environmental issue

Select all that apply

- Board mandate
- Individual role descriptions

(4.1.2.4) Frequency with which this environmental issue is a scheduled agenda item

Select from:

- Scheduled agenda item in some board meetings – at least annually

(4.1.2.5) Governance mechanisms into which this environmental issue is integrated

Select all that apply

- Reviewing and guiding annual budgets
- Overseeing and guiding scenario analysis
- Overseeing the setting of corporate targets
- Monitoring progress towards corporate targets
- Approving corporate policies and/or commitments
- Monitoring the implementation of the business strategy
- Overseeing and guiding public policy engagement
- Overseeing and guiding public policy engagement
- Reviewing and guiding innovation/R&D priorities
- Approving and/or overseeing employee incentives
- Overseeing and guiding major capital expenditures

- Overseeing reporting, audit, and verification processes
- Monitoring the implementation of a climate transition plan
- Overseeing and guiding the development of a business strategy
- Overseeing and guiding acquisitions, mergers, and divestitures
- Overseeing and guiding the development of a climate transition plan
- Reviewing and guiding the assessment process for dependencies, impacts, risks, and opportunities

(4.1.2.7) Please explain

ZF's CEO assumes leadership and supreme decision-making authority on ZF's climate-related issues. The CEO holds overall responsibility for the ZF's strategy and management on climate action. Besides, ZF's CEO is an active member of two key climate-related initiatives of the World Economic Forum: the Alliance of CEO Climate Leaders and the First Movers Coalition. The Alliance of CEO Climate Leaders of the World Economic Forum takes the stand that the private sector must assume responsibility and actively engage in efforts to reduce greenhouse gas emissions, thereby helping to shape the global transition to a low-carbon, climate-resilient economy. Furthermore, the CEO actively engages in the World Economic Forum's First Movers Coalition (FMC). ZF is a founding member and active partner of the FMC. The FMC aims to jumpstart the demand for zero-emission technologies by leveraging collective purchasing power from companies, thereby scaling up critical emerging technologies essential for this net-zero transition. ZF's Chief Financial Officer (CFO) is responsible for ZF's financial strategy and the management of ZF's finances. ZF actively connects its financing with the sustainability strategy to finance investments towards the Group's "Next Generation Mobility" strategy. As a result, ZF extended its sustainable finance portfolio and linked a Revolving Credit Facility (RCF) to its climate ambition to reduce CO2e emissions to all three scopes of greenhouse gas emissions to achieve climate neutrality by 2040. Moreover, ZF issues green bonds which proceeds are used for the development, production, and sale of products for clean transportation and renewable energy. ZF's CFO is also responsible for ZF's Risk & Control Management, consisting of the pillars Enterprise Risk Management (including resilience), Internal Control System and Governance, Risk & Compliance (GRC) Integration Management. ESG- and thus, climate-related risk and control implications are considered in an integrated manner within the GRC approach. ZF's Chief Human Resources Officer (CHRO) holds responsibility within the Board of Management for climate-related issues. The CHRO is responsible for Human Resources, Sustainability, Legal Affairs, and Compliance for the Group. ZF's Sustainability Department that actively drives ZF's climate ambition directly reports to the CHRO.

Water

(4.1.2.1) Positions of individuals or committees with accountability for this environmental issue

Select all that apply

- Other C-Suite Officer

(4.1.2.2) Positions' accountability for this environmental issue is outlined in policies applicable to the board

Select from:

Yes

(4.1.2.3) Policies which outline the positions' accountability for this environmental issue

Select all that apply

Individual role descriptions

(4.1.2.4) Frequency with which this environmental issue is a scheduled agenda item

Select from:

Sporadic – agenda item as important matters arise

(4.1.2.5) Governance mechanisms into which this environmental issue is integrated

Select all that apply

Reviewing and guiding annual budgets

Overseeing the setting of corporate targets

Monitoring progress towards corporate targets

Approving corporate policies and/or commitments

Overseeing and guiding major capital expenditures

Monitoring the implementation of the business strategy

Overseeing reporting, audit, and verification processes

Overseeing and guiding the development of a business strategy

Reviewing and guiding the assessment process for dependencies, impacts, risks, and opportunities

(4.1.2.7) Please explain

ZF's Chief Human Resources Officer (CHRO) holds responsibility within the Board of Management for water-related issues. The CHRO is responsible for Human Resources, Sustainability, Legal Affairs, and Compliance for the Group. The CHRO reviews the biannual EHS Management Review which includes water-related topics. Moreover, ZF's Sustainability and Environment, Health, & Safety (EHS) Department that drives ZF's water ambition directly reports to the CHRO.

[Fixed row]

(4.2) Does your organization's board have competency on environmental issues?

Climate change

(4.2.1) Board-level competency on this environmental issue

Select from:

Yes

(4.2.2) Mechanisms to maintain an environmentally competent board

Select all that apply

- Consulting regularly with an internal, permanent, subject-expert working group
- Engaging regularly with external stakeholders and experts on environmental issues
- Having at least one board member with expertise on this environmental issue

(4.2.3) Environmental expertise of the board member

Experience

- Executive-level experience in a role focused on environmental issues

Water

(4.2.1) Board-level competency on this environmental issue

Select from:

Yes

(4.2.2) Mechanisms to maintain an environmentally competent board

Select all that apply

- Consulting regularly with an internal, permanent, subject-expert working group

[Fixed row]

(4.3) Is there management-level responsibility for environmental issues within your organization?

Climate change

(4.3.1) Management-level responsibility for this environmental issue

Select from:

Yes

Water

(4.3.1) Management-level responsibility for this environmental issue

Select from:

Yes

Biodiversity

(4.3.1) Management-level responsibility for this environmental issue

Select from:

No, but we plan to within the next two years

(4.3.2) Primary reason for no management-level responsibility for environmental issues

Select from:

Not an immediate strategic priority

(4.3.3) Explain why your organization does not have management-level responsibility for environmental issues

So far, there is no complete picture of the impact of our own business and supply chain on biodiversity. We are at the beginning of activities in this field, comparable to early measures of climate protection. We recognize the need to increase biodiversity ambitions and prepare our organization to contribute to a regenerative economy.

[Fixed row]

(4.3.1) Provide the highest senior management-level positions or committees with responsibility for environmental issues (do not include the names of individuals).

Climate change

(4.3.1.1) Position of individual or committee with responsibility

Executive level

Other C-Suite Officer, please specify :Chief Human Resources Officer (CHRO), responsible for Human Resources, Sustainability, Legal Affairs, and Compliance

(4.3.1.2) Environmental responsibilities of this position

Dependencies, impacts, risks and opportunities

- Assessing environmental dependencies, impacts, risks, and opportunities
- Assessing future trends in environmental dependencies, impacts, risks, and opportunities
- Managing environmental dependencies, impacts, risks, and opportunities

Policies, commitments, and targets

- Monitoring compliance with corporate environmental policies and/or commitments
- Measuring progress towards environmental corporate targets
- Measuring progress towards environmental science-based targets
- Setting corporate environmental policies and/or commitments
- Setting corporate environmental targets

Strategy and financial planning

- Developing a climate transition plan
- Implementing a climate transition plan
- Conducting environmental scenario analysis
- Managing annual budgets related to environmental issues
- Implementing the business strategy related to environmental issues
- Developing a business strategy which considers environmental issues
- Managing environmental reporting, audit, and verification processes

Other

- Providing employee incentives related to environmental performance

(4.3.1.4) Reporting line

Select from:

- Reports to the board directly

(4.3.1.5) Frequency of reporting to the board on environmental issues

Select from:

- More frequently than quarterly

(4.3.1.6) Please explain

The Chief Human Resources Officer (CHRO) holds responsibility within the Board of Management on climate-and water-related issues. ZF's CHRO assumes responsibility for Human Resources, Sustainability, Legal Affairs, and Compliance. The Sustainability and Environment, Health, and Safety (EHS) domains driving climate- and water-related aspects, report to the CHRO.

Water

(4.3.1.1) Position of individual or committee with responsibility

Executive level

- Other C-Suite Officer, please specify :Chief Human Resources Officer (CHRO), responsible for Human Resources, Sustainability, Legal Affairs, and Compliance

(4.3.1.2) Environmental responsibilities of this position

Dependencies, impacts, risks and opportunities

- Assessing environmental dependencies, impacts, risks, and opportunities
- Assessing future trends in environmental dependencies, impacts, risks, and opportunities
- Managing environmental dependencies, impacts, risks, and opportunities

Policies, commitments, and targets

- Monitoring compliance with corporate environmental policies and/or commitments
- Measuring progress towards environmental corporate targets
- Setting corporate environmental policies and/or commitments
- Setting corporate environmental targets

Strategy and financial planning

- Implementing the business strategy related to environmental issues
- Managing annual budgets related to environmental issues
- Managing environmental reporting, audit, and verification processes

(4.3.1.4) Reporting line

Select from:

- Reports to the board directly

(4.3.1.5) Frequency of reporting to the board on environmental issues

Select from:

- Half-yearly

(4.3.1.6) Please explain

The Chief Human Resources Officer (CHRO) holds responsibility within the Board of Management on climate-and water-related issues. ZF's CHRO assumes responsibility for Human Resources, Sustainability, Legal Affairs, and Compliance. The Sustainability and Environment, Health, and Safety (EHS) domains driving climate- and water-related aspects, report to the CHRO.

[Add row]

(4.5) Do you provide monetary incentives for the management of environmental issues, including the attainment of targets?

Climate change

(4.5.1) Provision of monetary incentives related to this environmental issue

Select from:

Yes

(4.5.2) % of total C-suite and board-level monetary incentives linked to the management of this environmental issue

10

(4.5.3) Please explain

The Supervisory Board and the Board of Management decided to integrate the reduction of Scope 1 and Scope 2 emissions into the long-term incentive of ZF's senior management from 2023 onwards. ZF has set science-based targets approved by the Science Based Targets initiative (SBTi) in 2022 to reduce its Scope 1 and Scope 2 emissions by an absolute figure of 80% and its Scope 3 emissions by 40% relative to sales by 2030. Overall, ZF has the strategic ambition to become climate-neutral in all three emission scopes by 2040. To support target achievement, ZF links Scope 1 and 2 emission reductions to the long-term incentive.

Water

(4.5.1) Provision of monetary incentives related to this environmental issue

Select from:

- No, and we do not plan to introduce them in the next two years

(4.5.3) Please explain

ZF decided to link the reduction of Scope 1 and Scope 2 emissions as an indicator for the long-term incentive of ZF's senior management from 2023 onwards. A specific consideration of water-related issues is currently not planned.

[Fixed row]

(4.5.1) Provide further details on the monetary incentives provided for the management of environmental issues (do not include the names of individuals).

Climate change

(4.5.1.1) Position entitled to monetary incentive

Board or executive level

- Board/Executive board

(4.5.1.2) Incentives

Select all that apply

- Bonus - % of salary

(4.5.1.3) Performance metrics

Targets

- Reduction in absolute emissions in line with net-zero target

Emission reduction

- Reduction in absolute emissions

(4.5.1.4) Incentive plan the incentives are linked to

Select from:

- Long-Term Incentive Plan, or equivalent, only (e.g. contractual multi-year bonus)

(4.5.1.5) Further details of incentives

ZF decided to link the reduction of Scope 1 and Scope 2 emissions as an indicator for the long-term incentive of ZF's Board of Management and senior management from 2023 onwards.

(4.5.1.6) How the position's incentives contribute to the achievement of your environmental commitments and/or climate transition plan

ZF aims to become climate-neutral in all emissions scopes by 2040 with science-based targets for Scope 1, 2, & 3 by 2030. Linking the reduction of absolute Scope 1 and Scope 2 emissions to the long-term incentive of ZF's Board of Management and its entire senior management team contributes significantly towards target achievement.

Climate change

(4.5.1.1) Position entitled to monetary incentive

Senior-mid management

- Management group

(4.5.1.2) Incentives

Select all that apply

- Bonus - % of salary

(4.5.1.3) Performance metrics

Targets

- Reduction in absolute emissions in line with net-zero target

Emission reduction

- Reduction in absolute emissions

(4.5.1.4) Incentive plan the incentives are linked to

Select from:

- Long-Term Incentive Plan, or equivalent, only (e.g. contractual multi-year bonus)

(4.5.1.5) Further details of incentives

ZF decided to link the reduction of Scope 1 and Scope 2 emissions as an indicator for the long-term incentive of ZF's Board of Management and senior management from 2023 onwards.

(4.5.1.6) How the position's incentives contribute to the achievement of your environmental commitments and/or climate transition plan

ZF aims to become climate-neutral in all emissions scopes by 2040 with science-based targets for Scope 1, 2, & 3 by 2030. Linking the reduction of absolute Scope 1 and Scope 2 emissions to the long-term incentive of ZF's Board of Management and its entire senior management team contributes significantly towards target achievement.

[Add row]

(4.6) Does your organization have an environmental policy that addresses environmental issues?

	Does your organization have any environmental policies?
	Select from: <input checked="" type="checkbox"/> Yes

[Fixed row]

(4.6.1) Provide details of your environmental policies.

Row 1

(4.6.1.1) Environmental issues covered

Select all that apply

- Climate change

(4.6.1.2) Level of coverage

Select from:

- Organization-wide

(4.6.1.3) Value chain stages covered

Select all that apply

- Direct operations
- Upstream value chain
- Downstream value chain

(4.6.1.4) Explain the coverage

ZF has several environmental policies in place. The company addresses and operationalizes a range of environmental topics through its comprehensive Environmental, Health and Safety (EHS) policy. ZF's EHS targets cover the timeframe 2021–2025. Moreover, ZF's climate ambition address the requirements of the Science Based Targets initiative (SBTi). Moreover, ZF fosters the concept of circular economy and developed a strategic circularity framework.

(4.6.1.5) Environmental policy content

Environmental commitments

- Commitment to a circular economy strategy
- Commitment to comply with regulations and mandatory standards

- Commitment to stakeholder engagement and capacity building on environmental issues

Climate-specific commitments

- Commitment to 100% renewable energy
- Commitment to net-zero emissions

Social commitments

- Adoption of the UN International Labour Organization principles
- Commitment to respect internationally recognized human rights

Additional references/Descriptions

- Description of environmental requirements for procurement
- Description of grievance/whistleblower mechanism to monitor non-compliance with the environmental policy and raise/address/escalate any other greenwashing concerns
- Description of renewable electricity procurement practices

(4.6.1.6) Indicate whether your environmental policy is in line with global environmental treaties or policy goals

Select all that apply

- Yes, in line with the Paris Agreement

(4.6.1.7) Public availability

Select from:

- Publicly available

(4.6.1.8) Attach the policy

BOM_approved_ZF_Corporate_Environmental_Health_and_Safety_Targets_2021-2025.pdf

Row 2

(4.6.1.1) Environmental issues covered

Select all that apply

- Water

(4.6.1.2) Level of coverage

Select from:

- Organization-wide

(4.6.1.3) Value chain stages covered

Select all that apply

- Direct operations

(4.6.1.4) Explain the coverage

ZF has several environmental policies in place. The company addresses and operationalizes a range of environmental topics through its comprehensive Environmental, Health and Safety (EHS) policy. ZF's EHS targets cover the timeframe 2021–2025. ZF is member of the UN Global Compact since 2012. As part of our membership, we are committed to all Sustainable Development Goals (SDGs) including SDG 6 on water.

(4.6.1.5) Environmental policy content

Environmental commitments

- Commitment to a circular economy strategy
- Commitment to comply with regulations and mandatory standards
- Commitment to respect legally designated protected areas

Water-specific commitments

- Commitment to reduce or phase out hazardous substances
- Commitment to control/reduce/eliminate water pollution
- Commitment to reduce water consumption volumes
- Commitment to reduce water withdrawal volumes

(4.6.1.6) Indicate whether your environmental policy is in line with global environmental treaties or policy goals

Select all that apply

- Yes, in line with Sustainable Development Goal 6 on Clean Water and Sanitation

(4.6.1.7) Public availability

Select from:

- Publicly available

(4.6.1.8) Attach the policy

[BOM_approved_ZF_Corporate_Environmental_Health_and_Safety_Targets_2021-2025.pdf](#)

Row 3

(4.6.1.1) Environmental issues covered

Select all that apply

- Biodiversity

(4.6.1.2) Level of coverage

Select from:

- Organization-wide

(4.6.1.3) Value chain stages covered

Select all that apply

- Upstream value chain

(4.6.1.4) Explain the coverage

ZF's activities and that of its value chain depend on biodiversity and have an impact on it. Therefore, ZF endorses the draft of the Kunming-Montreal Global Biodiversity Framework (GBF) adopted at the 2022 United Nations Biodiversity Conference in Montreal (COP15). ZF complies with the legal requirements regarding the protection of biodiversity and expects the same from its business partners. ZF welcomes the objectives of the EU Biodiversity Strategy. ZF expects business partners to analyze the interrelation between their dependencies and impacts on nature and set an adequate level of ambition for their business to support the targets of the Kunming-Montreal Global Biodiversity Framework (GBF) and not contribute to deforestation or the degradation of natural forests and include the preservation of ecosystems or species protection. Business partners should protect ecosystems, especially key biodiversity areas, impacted by their operations, avoid illegal deforestation and minimize land-use in accordance with international biodiversity regulations, including the IUCN Resolutions and Recommendations on Biodiversity. Where appropriate, business partners should monitor and control their impact on soil quality to prevent soil erosion, nutrient degradation, subsidence and contamination.

(4.6.1.5) Environmental policy content

Environmental commitments

- Commitment to a circular economy strategy
- Commitment to avoidance of negative impacts on threatened and protected species
- Commitment to comply with regulations and mandatory standards
- Commitment to respect legally designated protected areas

Social commitments

- Commitment to respect and protect the customary rights to land, resources, and territory of Indigenous Peoples and Local Communities

(4.6.1.6) Indicate whether your environmental policy is in line with global environmental treaties or policy goals

Select all that apply

- Yes, in line with the Kunming-Montreal Global Biodiversity Framework

(4.6.1.7) Public availability

Select from:

- Publicly available

(4.6.1.8) Attach the policy

zf_bpc_en.pdf

[Add row]

(4.10) Are you a signatory or member of any environmental collaborative frameworks or initiatives?

(4.10.1) Are you a signatory or member of any environmental collaborative frameworks or initiatives?

Select from:

Yes

(4.10.2) Collaborative framework or initiative

Select all that apply

Science-Based Targets Initiative (SBTi)

UN Global Compact

Other, please specify :World Economic Forum (WEF) First Movers Coalition and the Alliance of CEO Climate Leaders; Responsible Supply Chain Initiative; Catena-X

(4.10.3) Describe your organization's role within each framework or initiative

UN Global Compact: ZF committed itself to acting in a socially responsible manner by signing the United Nations Global Compact in 2012. Since joining ZF has also become a member of the Global Compact Network Germany and actively participates in exchanges between the member companies. World Economic Forum (WEF): ZF actively engages in two initiatives of the World Economic Forum (WEF) the First Movers Coalition FMC and the Alliance of CEO Climate Leaders: 1) The FMC is a coalition of companies using their purchasing power to create early markets for innovative clean technologies in hard to abate sectors FMC members pledged publicly to purchase at least 10 of their industrial material from using near-zero or zero-carbon solutions by 2030 ZF is a founding member and active partner of the FMC. 2) The Alliance of CEO Climate Leaders represents a CEO-led community committed to raising bold climate ambition and accelerating the net zero transition by setting science-based targets disclosing emissions and catalyzing decarbonization and partnerships across global value chains. Responsible Supply Chain Initiative e.V. (RSCI): ZF joined the initiative for sustainable supply chains in the automotive industry At its core the RSCI has developed a standard and a central platform for a standardized sustainability assessment of production locations. Catena-X: ZF is a founding member of the joint data ecosystem of the automotive industry Catena-X. ZF launched the initiative as an open network for the automotive industry and adjacent industries. It focuses on secure standardized information and data exchange between companies and enable the digital flow of information across the entire supply chain. This can make supply chains more transparent and thus meet demanding sustainability criteria such as reducing the carbon footprint of products.

[Fixed row]

(4.11) In the reporting year, did your organization engage in activities that could directly or indirectly influence policy, law, or regulation that may (positively or negatively) impact the environment?

(4.11.1) External engagement activities that could directly or indirectly influence policy, law, or regulation that may impact the environment

Select all that apply

- Yes, we engaged directly with policy makers
- Yes, we engaged indirectly through, and/or provided financial or in-kind support to a trade association or other intermediary organization or individual whose activities could influence policy, law, or regulation

(4.11.2) Indicate whether your organization has a public commitment or position statement to conduct your engagement activities in line with global environmental treaties or policy goals

Select from:

- Yes, we have a public commitment or position statement in line with global environmental treaties or policy goals

(4.11.3) Global environmental treaties or policy goals in line with public commitment or position statement

Select all that apply

- Paris Agreement
- Sustainable Development Goal 6 on Clean Water and Sanitation

(4.11.4) Attach commitment or position statement

SBTi__Validation_Certificate.pdf

(4.11.5) Indicate whether your organization is registered on a transparency register

Select from:

- Yes

(4.11.6) Types of transparency register your organization is registered on

Select all that apply

Mandatory government register

(4.11.7) Disclose the transparency registers on which your organization is registered & the relevant ID numbers for your organization

ZF is registered in the European transparency register (ID: 194094423131-36) and the German transparency register (ID: R001500)

(4.11.8) Describe the process your organization has in place to ensure that your external engagement activities are consistent with your environmental commitments and/or transition plan

ZF observes the debates on the various political levels, collects and checks for effects on the product portfolio, locations, investments, etc. An assessment is obtained via internal technical experts and translated into political messages. We specifically introduce these into the political process via associations, direct talks, or in writing to the relevant stakeholders.

[Fixed row]

(4.11.1) On what policies, laws, or regulations that may (positively or negatively) impact the environment has your organization been engaging directly with policy makers in the reporting year?

Row 1

(4.11.1.1) Specify the policy, law, or regulation on which your organization is engaging with policy makers

EU Green Deal, Revision of CO2 fleet targets for PassCars, LCV and HDV, Type approval regulation (UN ECE & EU), End-of-Life Vehicle Regulation, EU Net-Zero-Industry Act, RePower EU, Company Car taxation Germany, US plug-in vehicle tax credit, US Fuel Economy and emissions standards, EU Taxonomy (Climate Delegated Act), Eurovignette, EPA GHG Emissions Standards (LD, MD, HD), CARB ACCII, ACT, ACF, US e-mobility tax credits

(4.11.1.2) Environmental issues the policy, law, or regulation relates to

Select all that apply

- Climate change

(4.11.1.3) Focus area of policy, law, or regulation that may impact the environment

Environmental impacts and pressures

- Emissions – CO2

(4.11.1.4) Geographic coverage of policy, law, or regulation

Select from:

- Global

(4.11.1.6) Your organization's position on the policy, law, or regulation

Select from:

- Support with minor exceptions

(4.11.1.7) Details of any exceptions and your organization's proposed alternative approach to the policy, law, or regulation

Revision of CO2 Fleet targets: arguing for an approach that is open for technology and including renewable fuels (E-Fuels) to also decarbonize the existing fleet.

(4.11.1.8) Type of direct engagement with policy makers on this policy, law, or regulation

Select all that apply

- Regular meetings
- Discussion in public forums
- Participation in working groups organized by policy makers
- Responding to consultations
- Submitting written proposals/inquiries

(4.11.1.9) Funding figure your organization provided to policy makers in the reporting year relevant to this policy, law, or regulation (currency)

(4.11.1.10) Explain the relevance of this policy, law, or regulation to the achievement of your environmental commitments and/or transition plan, how this has informed your engagement, and how you measure the success of your engagement

We are part of the activities of associations (CLEPA, VDA, MEMA) as well as from industry groups. Furthermore we are in direct contacts with MPs, ministries, EU commissioners, and US regulators and legislators. ZF does not provide funding to policy makers.

(4.11.1.11) Indicate if you have evaluated whether your organization's engagement on this policy, law, or regulation is aligned with global environmental treaties or policy goals

Select from:

Yes, we have evaluated, and it is aligned

(4.11.1.12) Global environmental treaties or policy goals aligned with your organization's engagement on this policy, law or regulation

Select all that apply

Paris Agreement

[Add row]

(4.11.2) Provide details of your indirect engagement on policy, law, or regulation that may (positively or negatively) impact the environment through trade associations or other intermediary organizations or individuals in the reporting year.

Row 1

(4.11.2.1) Type of indirect engagement

Select from:

Indirect engagement via a trade association

(4.11.2.4) Trade association

Europe

German Automotive Association (VDA)

(4.11.2.5) Environmental issues relevant to the policies, laws, or regulations on which the organization or individual has taken a position

Select all that apply

Climate change

(4.11.2.6) Indicate whether your organization's position is consistent with the organization or individual you engage with

Select from:

Consistent

(4.11.2.7) Indicate whether your organization attempted to influence the organization or individual's position in the reporting year

Select from:

Yes, we publicly promoted their current position

(4.11.2.8) Describe how your organization's position is consistent with or differs from the organization or individual's position, and any actions taken to influence their position

Environmental and climate protection regulations are the driving force behind automotive developments. Increased efficiency, recycling, and a reduction in emissions benefit both companies and consumers. Preserving natural resources is an integral part of national and European regulation. The Association represents the interests of the automotive industry and supports the regulatory processes with its viewpoints and information. <https://www.vda.de/en>. Furthermore, ZF joined the VBA-led initiative for sustainable supply chains in the automotive industry called Responsible Supply Chain Initiative e.V. (RSCI). At its core, the RSCI has developed a standard and a central platform for a standardized sustainability assessment of production locations. The initiative also carries out on-site assessments and tracing. The annual RSCI membership fee amounts to 35,000 EUR.

(4.11.2.9) Funding figure your organization provided to this organization or individual in the reporting year (currency)

35000

(4.11.2.10) Describe the aim of this funding and how it could influence policy, law or regulation that may impact the environment

The VBA-led Responsible Supply Chain Initiative e.V. (RSCI) aims to support members, suppliers, and stakeholders within the automotive industry and affiliated industries to strive for more responsible supply chains. RSCI aims to join forces for a common and coherent assessment standard to mitigate social and environmental risks and roll out on-site assessments at the supply chain. RSCI membership depends on the previous year's annual turnover of the member company and the type of membership.

(4.11.2.11) Indicate if you have evaluated whether your organization's engagement is aligned with global environmental treaties or policy goals

Select from:

Yes, we have evaluated, and it is aligned

(4.11.2.12) Global environmental treaties or policy goals aligned with your organization's engagement on policy, law or regulation

Select all that apply

Paris Agreement

Row 2

(4.11.2.1) Type of indirect engagement

Select from:

Indirect engagement via a trade association

(4.11.2.4) Trade association

Europe

Other trade association in Europe, please specify :European Association of Automotive Suppliers (CLEPA)

(4.11.2.5) Environmental issues relevant to the policies, laws, or regulations on which the organization or individual has taken a position

Select all that apply

Climate change

(4.11.2.6) Indicate whether your organization's position is consistent with the organization or individual you engage with

Select from:

Consistent

(4.11.2.7) Indicate whether your organization attempted to influence the organization or individual's position in the reporting year

Select from:

Yes, we publicly promoted their current position

(4.11.2.8) Describe how your organization's position is consistent with or differs from the organization or individual's position, and any actions taken to influence their position

Protection of the environment and the improvement of air quality are important objectives for the automotive supplier industry. From the conception to the production, suppliers strive to make their products and services ever more environmentally friendly and energy efficient. In general, we do not disclose funding figures/membership fees and therefore set the figure to "zero".

(4.11.2.9) Funding figure your organization provided to this organization or individual in the reporting year (currency)

0

(4.11.2.11) Indicate if you have evaluated whether your organization's engagement is aligned with global environmental treaties or policy goals

Select from:

Yes, we have evaluated, and it is aligned

(4.11.2.12) Global environmental treaties or policy goals aligned with your organization's engagement on policy, law or regulation

Select all that apply

- Paris Agreement

Row 3

(4.11.2.1) Type of indirect engagement

Select from:

- Indirect engagement via a trade association

(4.11.2.4) Trade association

Europe

- Other trade association in Europe, please specify :German Engineering Federation e.V. (VDMA)

(4.11.2.5) Environmental issues relevant to the policies, laws, or regulations on which the organization or individual has taken a position

Select all that apply

- Climate change

(4.11.2.6) Indicate whether your organization's position is consistent with the organization or individual you engage with

Select from:

- Consistent

(4.11.2.7) Indicate whether your organization attempted to influence the organization or individual's position in the reporting year

Select from:

- Yes, we publicly promoted their current position

(4.11.2.8) Describe how your organization's position is consistent with or differs from the organization or individual's position, and any actions taken to influence their position

The German engineering sector supports the climate change concept of the German government with the committed reduction target in the transport sector and the activities of the national energy efficiency action plan. The federal government presented a draft of the new edition of the German sustainability strategy and invited all stakeholders to comment. The federal government adapts its strategy to the Global Agenda 2030 and to the 17 SDGs. VDMA very much welcomes this alignment. <http://www.vdma.org>. In general, we do not disclose funding figures/membership fees and therefore set the figure to "zero".

(4.11.2.9) Funding figure your organization provided to this organization or individual in the reporting year (currency)

0

(4.11.2.11) Indicate if you have evaluated whether your organization's engagement is aligned with global environmental treaties or policy goals

Select from:

- Yes, we have evaluated, and it is aligned

(4.11.2.12) Global environmental treaties or policy goals aligned with your organization's engagement on policy, law or regulation

Select all that apply

- Paris Agreement

Row 4

(4.11.2.1) Type of indirect engagement

Select from:

- Indirect engagement via a trade association

(4.11.2.4) Trade association

North America

- Other trade association in North America, please specify :US Motor & Equipment Manufacturers Association (MEMA)

(4.11.2.5) Environmental issues relevant to the policies, laws, or regulations on which the organization or individual has taken a position

Select all that apply

- Climate change

(4.11.2.6) Indicate whether your organization's position is consistent with the organization or individual you engage with

Select from:

- Consistent

(4.11.2.7) Indicate whether your organization attempted to influence the organization or individual's position in the reporting year

Select from:

- Yes, and they have changed their position

(4.11.2.8) Describe how your organization's position is consistent with or differs from the organization or individual's position, and any actions taken to influence their position

MEMA vehicle suppliers are committed to achieving a cleaner transportation future by engaging with U.S. Environmental Protection Agency (EPA) and National Highway Traffic Safety Administration (NHTSA) on the next iteration of vehicle emissions and fuel economy standards for passenger vehicles and heavy trucks, and reaching the Administration's economy-wide carbon neutral goal by 2050. ZF has emphasized the importance of both component/system efficiency and the value of multiple avenues to carbon reduction – including BEV, PHEV, and alternative/renewable fuels. In general, we do not disclose funding figures/membership fees and therefore set the figure to "zero".

(4.11.2.9) Funding figure your organization provided to this organization or individual in the reporting year (currency)

(4.11.2.11) Indicate if you have evaluated whether your organization's engagement is aligned with global environmental treaties or policy goals

Select from:

- Yes, we have evaluated, and it is aligned

(4.11.2.12) Global environmental treaties or policy goals aligned with your organization's engagement on policy, law or regulation

Select all that apply

- Paris Agreement

Row 5

(4.11.2.1) Type of indirect engagement

Select from:

- Indirect engagement via a trade association

(4.11.2.4) Trade association

Global

- Other global trade association, please specify :UN Global Compact

(4.11.2.5) Environmental issues relevant to the policies, laws, or regulations on which the organization or individual has taken a position

Select all that apply

- Climate change
- Water

(4.11.2.6) Indicate whether your organization's position is consistent with the organization or individual you engage with

Select from:

Consistent

(4.11.2.7) Indicate whether your organization attempted to influence the organization or individual's position in the reporting year

Select from:

Yes, we publicly promoted their current position

(4.11.2.8) Describe how your organization's position is consistent with or differs from the organization or individual's position, and any actions taken to influence their position

ZF is member of the United Nations Global Compact (UNGC) since 2012 - the world's largest corporate sustainability and corporate social responsibility initiative. Since joining ZF has also become a member of the Global Compact Network Germany and actively participates in exchanges between the member companies. The membership fee of the UNGC depends on the amount of the annual turnover and amounts to 30,000 USD.

(4.11.2.9) Funding figure your organization provided to this organization or individual in the reporting year (currency)

30000

(4.11.2.10) Describe the aim of this funding and how it could influence policy, law or regulation that may impact the environment

The United Nations Global Compact (UNGC) fosters sustainable and socially responsible policies and report on their implementation. The annual membership fees are used to further develop programs and services of the UNGC in cooperation with the German network.

(4.11.2.11) Indicate if you have evaluated whether your organization's engagement is aligned with global environmental treaties or policy goals

Select from:

Yes, we have evaluated, and it is aligned

(4.11.2.12) Global environmental treaties or policy goals aligned with your organization's engagement on policy, law or regulation

Select all that apply

- Paris Agreement
- Sustainable Development Goal 6 on Clean Water and Sanitation

[Add row]

(4.12) Have you published information about your organization's response to environmental issues for this reporting year in places other than your CDP response?

Select from:

- Yes

(4.12.1) Provide details on the information published about your organization's response to environmental issues for this reporting year in places other than your CDP response. Please attach the publication.

Row 1

(4.12.1.1) Publication

Select from:

- In mainstream reports, in line with environmental disclosure standards or frameworks

(4.12.1.2) Standard or framework the report is in line with

Select all that apply

- GRI
- TCFD

(4.12.1.3) Environmental issues covered in publication

Select all that apply

- Climate change
- Water
- Biodiversity

(4.12.1.4) Status of the publication

Select from:

- Complete

(4.12.1.5) Content elements

Select all that apply

- | | |
|---|---|
| <input checked="" type="checkbox"/> Strategy | <input checked="" type="checkbox"/> Value chain engagement |
| <input checked="" type="checkbox"/> Governance | <input checked="" type="checkbox"/> Water accounting figures |
| <input checked="" type="checkbox"/> Emission targets | <input checked="" type="checkbox"/> Water pollution indicators |
| <input checked="" type="checkbox"/> Emissions figures | <input checked="" type="checkbox"/> Content of environmental policies |
| <input checked="" type="checkbox"/> Risks & Opportunities | |

(4.12.1.6) Page/section reference

Pages 32-73 of ZF annual report

(4.12.1.7) Attach the relevant publication

ZF_AnnualReport23.pdf

(4.12.1.8) Comment

ZF's annual report 2023 incorporating the sustainability report 2023 is publicly available:

https://www.zf.com/master/media/en/corporate/m_zf_com/company/bonds_relations_/financial_reports/annual_report/2023_3/ZF_AnnualReport23.pdf

[Add row]

C5. Business strategy

(5.1) Does your organization use scenario analysis to identify environmental outcomes?

Climate change

(5.1.1) Use of scenario analysis

Select from:

Yes

(5.1.2) Frequency of analysis

Select from:

Every two years

Water

(5.1.1) Use of scenario analysis

Select from:

Yes

(5.1.2) Frequency of analysis

Select from:

On a per project basis

[Fixed row]

(5.1.1) Provide details of the scenarios used in your organization's scenario analysis.

Climate change

(5.1.1.1) Scenario used

Climate transition scenarios

- IEA NZE 2050

(5.1.1.3) Approach to scenario

Select from:

- Qualitative and quantitative

(5.1.1.4) Scenario coverage

Select from:

- Organization-wide

(5.1.1.5) Risk types considered in scenario

Select all that apply

- Policy
- Market
- Reputation
- Technology
- Liability

(5.1.1.6) Temperature alignment of scenario

Select from:

- 1.5°C or lower

(5.1.1.7) Reference year

(5.1.1.8) Timeframes covered

Select all that apply

- 2025
- 2030
- 2050

(5.1.1.9) Driving forces in scenario

Local ecosystem asset interactions, dependencies and impacts

- Changes to the state of nature
- Speed of change (to state of nature and/or ecosystem services)
- Climate change (one of five drivers of nature change)

Finance and insurance

- Cost of capital
- Sensitivity of capital (to nature impacts and dependencies)

Stakeholder and customer demands

- Consumer sentiment
- Consumer attention to impact
- Impact of nature footprint on reputation
- Impact of nature service delivery on consumer

Regulators, legal and policy regimes

- Global regulation
- Political impact of science (from galvanizing to paralyzing)
- Level of action (from local to global)
- Global targets
- Methodologies and expectations for science-based targets

Relevant technology and science

- ☑ Granularity of available data (from aggregated to local)

Direct interaction with climate

- ☑ On asset values, on the corporate

Macro and microeconomy

- ☑ Domestic growth
- ☑ Globalizing markets

(5.1.1.10) Assumptions, uncertainties and constraints in scenario

• Scenario pathways, whereby the Net Zero Emissions by 2050 scenario presents one possible pathway to net zero emissions, and STEPS represents one possible pathway based on current policy settings, and there are many uncertainties that could affect these pathways. • Policy uncertainties, including future developments in, and timing of, policy action and level of ambition. • Socioeconomic uncertainties, including assumptions on population growth and economic activity/ growth, which are kept constant across the scenarios, societal and behavioural changes, and fossil fuel and other commodity price trajectories and markets, which do not reflect fluctuations and price cycles, or unexpected shocks, that characterise markets in practice. • Technological uncertainties, including the pace of technology progress, costs, and the level of support and international cooperation on clean energy innovation. • Geopolitical uncertainties, including assumptions about the level of geopolitical cooperation, which influences the energy sector and global energy system. • Modeling Uncertainties, whereby the scenarios are based on one model (the Global Energy and Climate Model).

(5.1.1.11) Rationale for choice of scenario

This normative scenario portrays a pathway for the energy sector to help limit the global temperature rise to 1.5 C above pre-industrial levels in 2100 (with at least a 50% probability) with limited overshoot. The NZE Scenario has been fully updated and is the focus of the recently released Net Zero Roadmap. The NZE Scenario meets the key energy-related UN Sustainable Development Goals (SDGs): universal access to reliable modern energy services is reached by 2030, and major improvements in air quality are secured. Each passing year of high emissions and limited progress towards the SDGs makes achieving the goals of the NZE Scenario more difficult but, based on IEA analysis, the recent acceleration in clean energy transitions means that there is still a pathway open to achieving its goals.

Water

(5.1.1.1) Scenario used

Water scenarios

WWF Water Risk Filter

(5.1.1.3) Approach to scenario

Select from:

Qualitative

(5.1.1.4) Scenario coverage

Select from:

Organization-wide

(5.1.1.5) Risk types considered in scenario

Select all that apply

Acute physical

(5.1.1.7) Reference year

2023

(5.1.1.8) Timeframes covered

Select all that apply

2025

2030

2050

(5.1.1.9) Driving forces in scenario

Local ecosystem asset interactions, dependencies and impacts

Changes to the state of nature

- Climate change (one of five drivers of nature change)

(5.1.1.10) Assumptions, uncertainties and constraints in scenario

We conducted a qualitative and quantitative climate scenario analysis. By doing so, we improve our understanding of climate-related risks & opportunities impact on the entire value chain. We leverage the climate insights for water security with regards to physical risks. Initial results: Physical: - Supply chain: Increasing climate hazards can lead to asset damages (AD) and business interruptions (BI) at our 12,000 suppliers (for production materials) and can negatively affect transport routes (e.g. floodings of streets). Yet, we see that those interruptions often occur very regionally and temporarily, so that alternative suppliers or routes can be found in our global network. - Production: Greatest impact is expected on our production since both AD and BI can be the direct result. - A deep dive site-analysis identified floods, tropical cyclones and sea level rise as the most material physical risks for preselected 24 ZF sites, especially in China, South Korea and Poland. Selection criteria included, but were not limited to, materiality for the ZF business model (i.e. internal and external sales, site value) and coverage of regions already affected by hazards today.

(5.1.1.11) Rationale for choice of scenario

We conducted a qualitative and quantitative climate scenario analysis. We leverage the climate insights for water security with regards to physical risks. For that, we used climate-related scenario selected for the physical risk of flooding.

Climate change

(5.1.1.1) Scenario used

Climate transition scenarios

- IEA STEPS (previously IEA NPS)

(5.1.1.3) Approach to scenario

Select from:

- Qualitative and quantitative

(5.1.1.4) Scenario coverage

Select from:

- Organization-wide

(5.1.1.5) Risk types considered in scenario

Select all that apply

- Policy
- Market
- Reputation
- Technology
- Liability

(5.1.1.6) Temperature alignment of scenario

Select from:

- 2.0°C - 2.4°C

(5.1.1.7) Reference year

2023

(5.1.1.8) Timeframes covered

Select all that apply

- 2025
- 2030
- 2050

(5.1.1.9) Driving forces in scenario

Local ecosystem asset interactions, dependencies and impacts

- Changes to the state of nature
- Speed of change (to state of nature and/or ecosystem services)
- Climate change (one of five drivers of nature change)

Finance and insurance

- ✓ Cost of capital
- ✓ Sensitivity of capital (to nature impacts and dependencies)

Stakeholder and customer demands

- ✓ Consumer sentiment
- ✓ Consumer attention to impact
- ✓ Impact of nature footprint on reputation
- ✓ Impact of nature service delivery on consumer

Regulators, legal and policy regimes

- ✓ Global regulation
- ✓ Political impact of science (from galvanizing to paralyzing)
- ✓ Level of action (from local to global)
- ✓ Global targets
- ✓ Methodologies and expectations for science-based targets

Relevant technology and science

- ✓ Granularity of available data (from aggregated to local)

Direct interaction with climate

- ✓ On asset values, on the corporate

Macro and microeconomy

- ✓ Domestic growth
- ✓ Globalizing markets

(5.1.1.10) Assumptions, uncertainties and constraints in scenario

• Scenario pathways, whereby the Net Zero Emissions by 2050 scenario presents one possible pathway to net zero emissions, and STEPS represents one possible pathway based on current policy settings, and there are many uncertainties that could affect these pathways. • Policy uncertainties, including future developments in,

and timing of, policy action and level of ambition. • Socioeconomic uncertainties, including assumptions on population growth and economic activity/ growth, which are kept constant across the scenarios, societal and behavioural changes, and fossil fuel and other commodity price trajectories and markets, which do not reflect fluctuations and price cycles, or unexpected shocks, that characterise markets in practice. • Technological uncertainties, including the pace of technology progress, costs, and the level of support and international cooperation on clean energy innovation. • Geopolitical uncertainties, including assumptions about the level of geopolitical cooperation, which influences the energy sector and global energy system. • Modeling Uncertainties, whereby the scenarios are based on one model (the Global Energy and Climate Model).

(5.1.1.11) Rationale for choice of scenario

This scenario is designed to provide a sense of the prevailing direction of energy system progression, based on a detailed review of the current policy landscape. Whereas the APS reflects what governments say they will achieve, the STEPS looks in detail at what they are actually doing to reach their targets and objectives across the energy economy. Outcomes in the STEPS reflect a detailed sector-by-sector review of the policies and measures that are actually in place or that have been announced; aspirational energy or climate targets are not automatically assumed to be met.

Climate change

(5.1.1.1) Scenario used

Physical climate scenarios

RCP 4.5

(5.1.1.2) Scenario used SSPs used in conjunction with scenario

Select from:

SSP2

(5.1.1.3) Approach to scenario

Select from:

Qualitative and quantitative

(5.1.1.4) Scenario coverage

Select from:

- Organization-wide

(5.1.1.5) Risk types considered in scenario

Select all that apply

- Acute physical
- Chronic physical

(5.1.1.6) Temperature alignment of scenario

Select from:

- 2.5°C - 2.9°C

(5.1.1.7) Reference year

2023

(5.1.1.8) Timeframes covered

Select all that apply

- 2025
- 2030
- 2050

(5.1.1.9) Driving forces in scenario

Local ecosystem asset interactions, dependencies and impacts

- Changes to the state of nature
- Speed of change (to state of nature and/or ecosystem services)
- Climate change (one of five drivers of nature change)

Finance and insurance

- Cost of capital

- ☑ Sensitivity of capital (to nature impacts and dependencies)

Stakeholder and customer demands

- ☑ Consumer sentiment
- ☑ Consumer attention to impact
- ☑ Impact of nature footprint on reputation
- ☑ Impact of nature service delivery on consumer

Regulators, legal and policy regimes

- ☑ Global regulation
- ☑ Political impact of science (from galvanizing to paralyzing)
- ☑ Level of action (from local to global)
- ☑ Global targets
- ☑ Methodologies and expectations for science-based targets

Relevant technology and science

- ☑ Granularity of available data (from aggregated to local)

Direct interaction with climate

- ☑ On asset values, on the corporate

Macro and microeconomy

- ☑ Domestic growth
- ☑ Globalizing markets

(5.1.1.10) Assumptions, uncertainties and constraints in scenario

Socio Economic and Technological Uncertainties, including assumptions on i) population growth (energy demand, land use, and emissions), ii) economic growth, iii) technological change (innovation in energy production, carbon capture, and efficiency improvements), iv) policy responses (global and regional climate policies)

Climate System Uncertainties, including climate sensitivity analyses, feedback mechanisms, and regional climate variability Modeling Uncertainties, including varying model parameterization and assumptions as well as different downscaling techniques Overall constraints, in general data availability, limitation of computational models and scenario assumptions

(5.1.1.11) Rationale for choice of scenario

SSP2-4.5 scenario describes a "middle-of-the-road" pathway with moderate progress towards sustainability and limited climate policy interventions. It results in a best estimate global temperature rise of around 2.7C by the end of the 21st century

Climate change

(5.1.1.1) Scenario used

Physical climate scenarios

RCP 8.5

(5.1.1.2) Scenario used SSPs used in conjunction with scenario

Select from:

SSP5

(5.1.1.3) Approach to scenario

Select from:

Qualitative and quantitative

(5.1.1.4) Scenario coverage

Select from:

Organization-wide

(5.1.1.5) Risk types considered in scenario

Select all that apply

Acute physical

Chronic physical

(5.1.1.6) Temperature alignment of scenario

Select from:

- 4.0°C and above

(5.1.1.7) Reference year

2023

(5.1.1.8) Timeframes covered

Select all that apply

- 2025
- 2030
- 2050

(5.1.1.9) Driving forces in scenario

Local ecosystem asset interactions, dependencies and impacts

- Changes to the state of nature
- Speed of change (to state of nature and/or ecosystem services)
- Climate change (one of five drivers of nature change)

Finance and insurance

- Cost of capital
- Sensitivity of capital (to nature impacts and dependencies)

Stakeholder and customer demands

- Consumer sentiment
- Consumer attention to impact
- Impact of nature footprint on reputation
- Impact of nature service delivery on consumer

Regulators, legal and policy regimes

- ✓ Global regulation
- ✓ Political impact of science (from galvanizing to paralyzing)
- ✓ Level of action (from local to global)
- ✓ Global targets
- ✓ Methodologies and expectations for science-based targets

Relevant technology and science

- ✓ Granularity of available data (from aggregated to local)

Direct interaction with climate

- ✓ On asset values, on the corporate

Macro and microeconomy

- ✓ Domestic growth
- ✓ Globalizing markets

(5.1.1.10) Assumptions, uncertainties and constraints in scenario

Socio Economic and Technological Uncertainties, including assumptions on i) population growth (energy demand, land use, and emissions), ii) economic growth, iii) technological change (innovation in energy production, carbon capture, and efficiency improvements), iv) policy responses (global and regional climate policies)
Climate System Uncertainties, including climate sensitivity analyses, feedback mechanisms, and regional climate variability *Modeling Uncertainties, including varying model parameterization and assumptions as well as different downscaling techniques* *Overall constraints, in general data availability, limitation of computational models and scenario assumptions*

(5.1.1.11) Rationale for choice of scenario

SSP5-8.5 scenario, also called business as usual (BAU) scenario, outlines a pathway driven by rapid economic growth and a strong reliance on fossil fuels, leading to a very high-carbon global economy.

Water

(5.1.1.1) Scenario used

Physical climate scenarios

RCP 4.5

(5.1.1.2) Scenario used SSPs used in conjunction with scenario

Select from:

SSP2

(5.1.1.3) Approach to scenario

Select from:

Qualitative and quantitative

(5.1.1.4) Scenario coverage

Select from:

Organization-wide

(5.1.1.5) Risk types considered in scenario

Select all that apply

Acute physical

Chronic physical

(5.1.1.6) Temperature alignment of scenario

Select from:

2.5°C - 2.9°C

(5.1.1.7) Reference year

2023

(5.1.1.8) Timeframes covered

Select all that apply

- 2025
- 2030
- 2050

(5.1.1.9) Driving forces in scenario

Local ecosystem asset interactions, dependencies and impacts

- Changes to the state of nature
- Speed of change (to state of nature and/or ecosystem services)
- Climate change (one of five drivers of nature change)

Finance and insurance

- Cost of capital
- Sensitivity of capital (to nature impacts and dependencies)

Stakeholder and customer demands

- Consumer sentiment
- Consumer attention to impact
- Impact of nature footprint on reputation
- Impact of nature service delivery on consumer

Regulators, legal and policy regimes

- Global regulation
- Political impact of science (from galvanizing to paralyzing)
- Level of action (from local to global)
- Global targets
- Methodologies and expectations for science-based targets

Relevant technology and science

- Granularity of available data (from aggregated to local)

Direct interaction with climate

- On asset values, on the corporate

Macro and microeconomy

- Domestic growth
- Globalizing markets

(5.1.1.10) Assumptions, uncertainties and constraints in scenario

Socio Economic and Technological Uncertainties, including assumptions on i) population growth (energy demand, land use, and emissions), ii) economic growth, iii) technological change (innovation in energy production, carbon capture, and efficiency improvements), iv) policy responses (global and regional climate policies)

Climate System Uncertainties, including climate sensitivity analyses, feedback mechanisms, and regional climate variability Modeling Uncertainties, including varying model parameterization and assumptions as well as different downscaling techniques Overall constraints, in general data availability, limitation of computational models and scenario assumptions

(5.1.1.11) Rationale for choice of scenario

SSP2-4.5 scenario describes a "middle-of-the-road" pathway with moderate progress towards sustainability and limited climate policy interventions. It results in a best estimate global temperature rise of around 2.7C by the end of the 21st century

Water

(5.1.1.1) Scenario used

Physical climate scenarios

- RCP 8.5

(5.1.1.2) Scenario used SSPs used in conjunction with scenario

Select from:

- SSP5

(5.1.1.3) Approach to scenario

Select from:

- Qualitative and quantitative

(5.1.1.4) Scenario coverage

Select from:

- Organization-wide

(5.1.1.5) Risk types considered in scenario

Select all that apply

- Acute physical
- Chronic physical

(5.1.1.6) Temperature alignment of scenario

Select from:

- 4.0°C and above

(5.1.1.7) Reference year

2023

(5.1.1.8) Timeframes covered

Select all that apply

- 2025
- 2030
- 2050

(5.1.1.9) Driving forces in scenario

Local ecosystem asset interactions, dependencies and impacts

- Changes to the state of nature
- Speed of change (to state of nature and/or ecosystem services)
- Climate change (one of five drivers of nature change)

Finance and insurance

- Cost of capital
- Sensitivity of capital (to nature impacts and dependencies)

Stakeholder and customer demands

- Consumer sentiment
- Consumer attention to impact
- Impact of nature footprint on reputation
- Impact of nature service delivery on consumer

Regulators, legal and policy regimes

- Global regulation
- Political impact of science (from galvanizing to paralyzing)
- Level of action (from local to global)
- Global targets
- Methodologies and expectations for science-based targets

Relevant technology and science

- Granularity of available data (from aggregated to local)

Direct interaction with climate

- On asset values, on the corporate

Macro and microeconomy

- Domestic growth

- Globalizing markets

(5.1.1.10) Assumptions, uncertainties and constraints in scenario

Socio Economic and Technological Uncertainties, including assumptions on i) population growth (energy demand, land use, and emissions), ii) economic growth, iii) technological change (innovation in energy production, carbon capture, and efficiency improvements), iv) policy responses (global and regional climate policies)
Climate System Uncertainties, including climate sensitivity analyses, feedback mechanisms, and regional climate variability *Modeling Uncertainties, including varying model parameterization and assumptions as well as different downscaling techniques* *Overall constraints, in general data availability, limitation of computational models and scenario assumptions*

(5.1.1.11) Rationale for choice of scenario

SSP5-8.5 scenario, also called business as usual (BAU) scenario, outlines a pathway driven by rapid economic growth and a strong reliance on fossil fuels, leading to a very high-carbon global economy.
[Add row]

(5.1.2) Provide details of the outcomes of your organization's scenario analysis.

Climate change

(5.1.2.1) Business processes influenced by your analysis of the reported scenarios

Select all that apply

- Risk and opportunities identification, assessment and management
- Strategy and financial planning
- Resilience of business model and strategy
- Capacity building
- Target setting and transition planning

(5.1.2.2) Coverage of analysis

Select from:

(5.1.2.3) Summarize the outcomes of the scenario analysis and any implications for other environmental issues

On physical climate risk scenario analysis:

- Run across full value chain, focus own operations
- Considered climate scenarios: 4C high emission & 2.5C current policy scenario
- Considered time horizons: short-term 2025/current, mid-term 2030, long-term 2050; with focus on: 2050
- Qualitative scenario analysis run over all of ZF's ca. 550 spatial units worldwide, i.e. distinct geographically connected properties, incl. production plants, warehouses, tech centers and administration buildings
- Insurance values used as proxy for criticality of the spatial unit (property damage – include buildings, machinery and stock values; and business interruption – include annual sales amount)
- Consideration of 28 natural hazards (acute and chronic) defined in ESRS E1 Climate change
- Thereof 15 natural hazards assessed as relevant for ZF (based on cross-functional internal expertise and experience as well as external expert opinion)
- Natural hazards criteria: historical (short-term/today) risk rating means sites exposed already today to e.g. flooding vs. future change rating (long term 2050) of the same risk, i. e. which sites will be exposed in 2050 to the same hazard because of climate change.
- Internal prioritization workshop for identification of ZF's most relevant natural hazards to focus on; from 15 ZF relevant natural hazards, considering exposure, hazard and vulnerability, the following 2 hazards considering today risk rating and future change signal were selected for an in-depth scenario analysis, business impact assessment and resilience analysis:
 - o Riverine flooding
 - o Water scarcity
- ZF set up internal focus working groups for both riverine flooding and water scarcity risks to work on approach, assumptions and validations.
- No precise strategic implications and actions based on analysis outcomes taken yet, as deep dive analysis and quantification for selected sites ongoing (focus is on relevant ZF sites exposed to riverine flooding and water scarcity for business impact quantification)
- First results likely available by end of 2024

On transition climate risk and opportunity scenario analysis:

- Starting point: Screening of ZF business model and value chain against potential transition risk and opportunity 'events' in line with CSRD categories (e.g., Policy and Legal, Market, Technology, Energy source etc.)
- Considered climate scenarios: 1.5C decarbonization scenario & 2.5C current policy scenario
- Considered time horizons: short-term 2025/current, mid-term 2030, long-term 2050
- Long list of 33 transition risks and opportunities identified. Further screening with ZF internal stakeholders/experts and exclusion of topics with a low degree of change under a 1.5C and/or low potential business impact rating. As result 17 transitional risks and opportunities prioritized.
- Internal prioritization workshop with cross-functional stakeholders based on potential impact and climate change signal to identify ZF's top transition risks and opportunities. Final selection of 2 transitional risks & opportunities to focus on for in-depth scenario analysis, business impact assessment and resilience analysis:
 - o Steel production costs: Impact on costs associated with ZF's procurement of steel in 2025, 2030, and 2050 as a result of changing steel production costs
 - o Automotive market transition in the passenger car and commercial vehicle segment: Impact on revenue for ZF from potentially rising EV share in 2025, 2030 and 2050
- ZF set up internal focus working groups for both top transition risks and opportunities to work on approach, assumptions and validations.
- No precise strategic implications and actions based on analysis outcomes taken yet, as deep dive analysis incl. quantification and resilience analysis still ongoing
- First results likely available by end of 2024

Water

(5.1.2.1) Business processes influenced by your analysis of the reported scenarios

Select all that apply

Risk and opportunities identification, assessment and management

(5.1.2.2) Coverage of analysis

Select from:

Organization-wide

(5.1.2.3) Summarize the outcomes of the scenario analysis and any implications for other environmental issues

Initial physical results support production resilience and prioritization of corporate security activities. Consistent climate data basis strengthen supply chain resilience & supplier risk management. Besides the scenario analysis, ZF was affected by flooding of the ZF plant in Ahrweiler (Germany) in 2021. This had severe implications for ZF. The plant was severely damaged and all assembly facilities have been destroyed. In the aftermath, the plant was relocated.
[Fixed row]

(5.2) Does your organization's strategy include a climate transition plan?

(5.2.1) Transition plan

Select from:

Yes, we have a climate transition plan which aligns with a 1.5°C world

(5.2.3) Publicly available climate transition plan

Select from:

Yes

(5.2.4) Plan explicitly commits to cease all spending on, and revenue generation from, activities that contribute to fossil fuel expansion

Select from:

No, and we do not plan to add an explicit commitment within the next two years

(5.2.6) Explain why your organization does not explicitly commit to cease all spending on and revenue generation from activities that contribute to fossil fuel expansion

ZF is a global technology company. We supply mobility systems for passenger cars, commercial vehicles, and industrial technology. ZF offers comprehensive product and software solutions in the four technology domains of Vehicle Motion Control, Integrated Safety, Automated Driving and Electric Mobility. While we believe in the growing electric mobility business and drive the technological transformation towards electric mobility, we do not refrain from doing business with internal combustion engines.

(5.2.7) Mechanism by which feedback is collected from shareholders on your climate transition plan

Select from:

Our climate transition plan is voted on at AGMs and we also have an additional feedback mechanism in place

(5.2.8) Description of feedback mechanism

ZF's shareholders regularly review and decide upon the company strategy. Within ZF's company strategy "Next Generation Mobility", climate neutrality by 2040 in all three emission scopes represents one of four key performance indicators. Moreover, ZF shareholders are involved in the release of ZF's annual report. The annual report incorporates ZF's sustainability report and includes climate transition-related aspects.

(5.2.9) Frequency of feedback collection

Select from:

Annually

(5.2.10) Description of key assumptions and dependencies on which the transition plan relies

The transition plan builds on the premises of the Paris Agreement. Moreover, the transition plan assumes a worldwide increase of climate-related regulation and depends on market developments and customer requirements.

(5.2.11) Description of progress against transition plan disclosed in current or previous reporting period

ZF set science-based targets approved by the Science Based Targets initiative (SBTi) in January 2022. Accordingly, ZF aims to reduce Scope 1 and Scope 2 by 80% and Scope 3 by 40% relative to sales by 2030 with 2019 as a base year. Furthermore, ZF committed to increase its annual procurement of electricity from renewable energies from 10% in 2019 to 100% by 2030. In 2023, the Board of Management decided to bring forward the target of 100% renewable energies in all plants from 2030 to 2025. The decision takes into account increasing social and market requirements, underscores ZF's climate ambition, and illustrates the progress of ZF's climate transition plan. Besides, ZF's annual reports and ZF's CDP reports annually disclose GHG emissions. The reporting illustrates an annual reduction of each Scope 1, Scope 2, and Scope 3 emissions over the last years.

(5.2.12) Attach any relevant documents which detail your climate transition plan (optional)

(5.2.13) Other environmental issues that your climate transition plan considers

Select all that apply

No other environmental issue considered

[Fixed row]

(5.3) Have environmental risks and opportunities affected your strategy and/or financial planning?

(5.3.1) Environmental risks and/or opportunities have affected your strategy and/or financial planning

Select from:

Yes, both strategy and financial planning

(5.3.2) Business areas where environmental risks and/or opportunities have affected your strategy

Select all that apply

Products and services

Upstream/downstream value chain

Investment in R&D

Operations

[Fixed row]

(5.3.1) Describe where and how environmental risks and opportunities have affected your strategy.

Products and services

(5.3.1.1) Effect type

Select all that apply

Risks

- Opportunities

(5.3.1.2) Environmental issues relevant to the risks and/or opportunities that have affected your strategy in this area

Select all that apply

- Climate change

(5.3.1.3) Describe how environmental risks and/or opportunities have affected your strategy in this area

For ZF as a technology company, climate-related risks and opportunities have a significant influence on the company's strategic direction. Situation: ZF incorporated climate action in our "Next Generation Mobility" Strategy and our sustainability strategy. Climate neutrality in all three emission scopes by 2040 represents one of four key performance indicators in ZF's strategy, next to sales growth, EBIT and regional sales split. Moreover, in ZF's sustainability framework, climate action is prominent and operationalized by the reduction of emissions across the value chain and the use and production of renewable energy. Task: ZF's climate strategy targets to achieve net zero emissions in all three scopes by 2040. ZF committed to reduce our corporate carbon footprint until 2030 by an absolute figure of 80% regarding Scope 1 and Scope 2 and by 40% relative to sales regarding Scope 3. These mid-term targets were approved by the Science Based Target initiative (SBTi) in January 2022. Action: We support automotive manufacturers in reducing the CO2 emissions of their products. Regarding Scope 3 emissions, the strategy focuses on improving product design, material selection, electrification, and supply chain structures. Moreover, in 2020 ZF announced to cease investments in transmissions exclusively designed for internal combustion engine vehicles but to focus its development activities on flexible platform technologies for e-mobility. Result: Climate action is strategically incorporated into ZF's product development process (GDPEP Global Development and Product Evolution Process). It entails necessary activities and check points that require the development teams i.e., to create transparency on the product carbon footprint, assess potential suppliers for sustainable materials, or to define a conclusive service strategy to enable remanufacturing or recycling.

Upstream/downstream value chain

(5.3.1.1) Effect type

Select all that apply

- Risks
- Opportunities

(5.3.1.2) Environmental issues relevant to the risks and/or opportunities that have affected your strategy in this area

Select all that apply

- Climate change

(5.3.1.3) Describe how environmental risks and/or opportunities have affected your strategy in this area

ZF also focuses on the supply chain in order to realize its strategic goal of climate neutrality in all three emission scopes by 2040. Situation: ZF's supply chain plays a vital role in achieving climate neutrality in all emission scopes by 2040. Therefore, ZF is considering its entire value chain. To strengthen all sustainability relevant activities within the supplier base, ZF Materials Management set up a team for sustainability in the supply chain. Task: ZF jointly works with its suppliers to make the supply chain more sustainable. Action: Sustainability management in the supply chain plays a decisive role for ZF. This applies both to environmental issues such as reducing greenhouse gas emissions and to social issues such as respect for human rights. For this reason, ZF pursues ambitious targets for the company itself and for suppliers and implemented numerous sustainability measures in the year under review. To be able to evaluate the sustainability performance of suppliers, the company has replaced the ZF Sustainability Criterion with the ZF Sustainability Score. This fully digital solution requires compliance with minimum requirements and measures sustainability performance using three key values: the green electricity share in 2025, the result of the NQC sustainability questionnaire and the acceptance of the ZF Business Partner Principles. The Sustainability Score applies to the awarding of new business as well as to the approval of new suppliers. It is a binding element of the Sourcing Decision Board, the highest procurement body in the Group. In 2023, sustainability-related tender conditions were also revised. The update includes extended requirements regarding climate and environment as well as new requirements for social responsibility and responsible sourcing. Since the end of 2023, acceptance of the requirements has been mandatory for production material suppliers to be awarded new business. Result: With the new Sustainability Score report we can track our Supplier's Sustainability performance every month. In December 2023 almost 47% of responsible spend PM Suppliers reached the 65% SUS Score benchmark. Green Electricity 100% by 2025 was committed by 42% of responsible spend Suppliers.

Investment in R&D

(5.3.1.1) Effect type

Select all that apply

- Risks
- Opportunities

(5.3.1.2) Environmental issues relevant to the risks and/or opportunities that have affected your strategy in this area

Select all that apply

- Climate change

(5.3.1.3) Describe how environmental risks and/or opportunities have affected your strategy in this area

ZF's strategy aims at ensuring a clean, safe, comfortable, and affordable mobility. Developing green and sustainable products is an integral part of this strategy. Situation: Sustainability in product development is a key objective of Research and Development (R&D) at ZF. One of ZF's strategic goals is to significantly lower mobility-related carbon emissions by offering new products to the market and reduce our own specific product-related emissions. Task: ZF's aim is to achieve a 40% reduction of Scope 3 emissions (CO₂e per sales) by 2030 compared to 2019. Key performance indicators for target achievement include product-related CO₂e

reduction and to develop and offer a strong product portfolio suitable for the clean transportation and renewable energy industry. Action: ZF pursues investments in product development by addressing our existing product portfolio, invest in developing new products and researching ways to contribute to a circular economy. ZF is investing in technologies and innovations that focus on the efficient use of energy. We are working on efficient drives for all types of vehicles as well as efficient energy management. Therefore, we are researching and developing opportunities to improve the conversion of energy, including systematic algorithms for an optimized driving strategy. ZF also continues the development, manufacture and distribution of wind turbine gear units that supports the global energy transition from fossil fuels to renewables. To address our current products, calculated product carbon footprint (PCF) serves as a basis for identifying CO₂e emitters and prioritizing CO₂e reduction measures. PCF helps to determine appropriate levers for product development and to offer sustainable products to our customers. ZF has integrated PCF to its global development process. ZF has established the “Green Material Project”, that invests R&D efforts focused on the assessment and testing of materials that provide a better CO₂e performance with increased recycling content, alternative manufacturing processes and alternate materials. With this, ZF takes care to develop products and selects materials that produce as few emissions as possible in our upstream supply chain, but also promote the use of recycled and renewable materials. ZF aims to contribute to a circular economy and achieve the long-term goal of climate-neutral products. ZF aims to integrate circular aspects in the innovation phase and to establish them in fundamental research and customer-specific applications. An example of such an initiative would be ZF’s participation in the EU SUSMAGPRO initiative, which considers how to use rare-earth magnets based on neodymium-iron boron that were recycled from motors at the end of lifecycle. Result: R&D investments are vital for advancing ZF’s sustainable and green product portfolio. In 2023, ZF’s R&D expenditure accounted for 3.543 billion representing an increase of about 3.4% compared to 2022 (3.425 billion).

Operations

(5.3.1.1) Effect type

Select all that apply

- Risks
- Opportunities

(5.3.1.2) Environmental issues relevant to the risks and/or opportunities that have affected your strategy in this area

Select all that apply

- Climate change

(5.3.1.3) Describe how environmental risks and/or opportunities have affected your strategy in this area

Situation: ZF’s ambition is to achieve net zero emissions in all three emission scopes by 2040. As for Scope 1 and Scope 2 emissions ZF’s climate strategy focuses on reduction and substitution. ZF undertakes to reduce its absolute Scope 1 and 2 GHG emissions by 80% by 2030, with 2019 as the base year. Task: ZF is represented with 168 production locations in 32 countries. To achieve decarbonization of its locations, ZF focuses on two main levers: Energy efficiency and the switch to green energy. Energy efficiency and avoidance of energy consumption are given priorities for the company. ZF includes all production, administrative and research locations in its efficiency programs. By 2030, the energy efficiency of ZF locations is to be increased by minimum 2% Energy Efficiency p.a. until 2030, 20

percent compared to 2019. Action: All locations regularly evaluate their energy profiles and energy related activities. This includes conducting audits, identifying potentials for improvement, and defining measures for increasing energy efficiency and reducing consumption. All German and European locations regularly undergo external audits based on country- specific standards such as EN 16247 or ESOS (UK) to meet the European Directive 2012/27/EU (Energy Efficiency Directive, EED). Campaigns to increase efficiency and reduce energy consumption are planned and implemented at all locations, in accordance with the local levels of consumption and target achievement. Each location is expected to establish and maintain standards to improve employee awareness and to promote behavioural changes as well as standards for demand or peak-load management according to local requirements. In order to reduce energy consumption, detailed energy programs, such as the ZF Energy Basics, help the ZF locations to achieve their targets. Result: These measures, in conjunction with the EHS and Energy Management System, considerably improve energy efficiency worldwide. By the end of 2023, 93 locations gained certification according to the international energy management standard ISO 50001. Moreover, renewables accounted for 28% of the total electricity in 2023.

[Add row]

(5.3.2) Describe where and how environmental risks and opportunities have affected your financial planning.

Row 1

(5.3.2.1) Financial planning elements that have been affected

Select all that apply

- Revenues
- Direct costs
- Indirect costs
- Access to capital
- Capital allocation
- Capital expenditures

(5.3.2.2) Effect type

Select all that apply

- Risks
- Opportunities

(5.3.2.3) Environmental issues relevant to the risks and/or opportunities that have affected these financial planning elements

Select all that apply

Climate change

(5.3.2.4) Describe how environmental risks and/or opportunities have affected these financial planning elements

Our Next Generation Mobility strategy aims at ensuring clean, safe, comfortable, and affordable individual mobility – for everyone and everywhere. Our strategy is the answer to the ongoing transformation of our industry and addresses climate-related challenges. Consequently, climate-related risks and opportunities find consideration in our financial planning. Situation: Our Next Generation Mobility identifies climate neutrality in all three emission scopes by 2040 as one out of four key performance indicators for the company. As a mid-term target, ZF commits to reduce its corporate carbon footprint until 2030 by an absolute figure of 80% regarding Scope 1 and Scope 2 and by 40% relative to sales regarding Scope 3. These mid-term targets are approved by the Science Based Target initiative (SBTi) in January 2022. Task: ZF implements the goal of climate neutrality in all emission scopes by 2040 and the mid-term SBTi-targets into its strategic and financial planning. Action: Two examples illustrate this implementation and the consideration of climate-related risks and opportunities in ZF's planning. First, ZF combines its sustainability strategy with its finance strategy. Consequently, ZF extended its sustainable finance portfolio and relies on a Green Finance Framework under which we issued green bonds. The corresponding green bond proceeds are used for the development, production, and sale of products for battery electric vehicles (clean transportation) and for the development, production, and sale of gearboxes for wind turbines (renewable energy). Furthermore, ZF linked a Revolving Credit Facility (RCF) to its sustainability goal of reducing CO2e emissions in all three scopes to achieve climate neutrality by 2040. Second, to support achieving ZF's climate targets, ZF decided link the reduction of Scope 1 and Scope 2 emissions as an indicator for the long-term incentive of ZF's senior management from 2023 onwards. Result: With our approach to anchor ZF's climate ambition, in our financial planning we are well-positioned to meet the needs and requirements of ZF's Next Generation Mobility strategy and to address climate-related risk and opportunities.

[Add row]

(5.4) In your organization's financial accounting, do you identify spending/revenue that is aligned with your organization's climate transition?

	Identification of spending/revenue that is aligned with your organization's climate transition
	Select from: <input checked="" type="checkbox"/> No, but we plan to in the next two years

[Fixed row]

(5.9) What is the trend in your organization's water-related capital expenditure (CAPEX) and operating expenditure (OPEX) for the reporting year, and the anticipated trend for the next reporting year?

(5.9.1) Water-related CAPEX (+/- % change)

-24

(5.9.2) Anticipated forward trend for CAPEX (+/- % change)

0

(5.9.3) Water-related OPEX (+/- % change)

9

(5.9.4) Anticipated forward trend for OPEX (+/- % change)

0

(5.9.5) Please explain

CAPEX change (decrease): in 2022 two new wastewater-treatment-facilities were installed, which is one major reason why there was a higher invest in 2022 then in 2023. OPEX change (increase): maintenance projects and in 2022, a procedural change was made to the provisions at one of our biggest locations, which is why the provisions from 2021 were still recognised in 2022. Nothing was debited in 2023, as no more provisions have had to be recognised since 2022.

[Fixed row]

(5.10) Does your organization use an internal price on environmental externalities?

	Use of internal pricing of environmental externalities	Environmental externality priced
	<i>Select from:</i> <input checked="" type="checkbox"/> Yes	<i>Select all that apply</i> <input checked="" type="checkbox"/> Carbon

[Fixed row]

(5.10.1) Provide details of your organization's internal price on carbon.

Row 1

(5.10.1.1) Type of pricing scheme

Select from:

- Shadow price

(5.10.1.2) Objectives for implementing internal price

Select all that apply

- Drive low-carbon investment
- Conduct cost-benefit analysis
- Reduce upstream value chain emissions
- Identify and seize low-carbon opportunities
- Influence strategy and/or financial planning
- Setting and/or achieving of climate-related policies and targets
- Incentivize consideration of climate-related issues in decision making
- Incentivize consideration of climate-related issues in risk assessment

(5.10.1.3) Factors considered when determining the price

Select all that apply

- Alignment with the price of allowances under an Emissions Trading Scheme
- Benchmarking against peers

(5.10.1.4) Calculation methodology and assumptions made in determining the price

The approximated price level of allowances of the EU Emission Trading Scheme (ETS) in 2023 and a benchmark analysis for the automotive sector was used for setting the price level.

(5.10.1.5) Scopes covered

Select all that apply

- Scope 1
- Scope 2
- Scope 3, Category 1 - Purchased goods and services

(5.10.1.6) Pricing approach used – spatial variance

Select from:

- Uniform

(5.10.1.8) Pricing approach used – temporal variance

Select from:

- Evolutionary

(5.10.1.9) Indicate how you expect the price to change over time

Climate experts estimate the cost of carbon and climate regulation to increase worldwide. Accordingly, price levels for ICP are expected to increase, too.

(5.10.1.10) Minimum actual price used (currency per metric ton CO2e)

80

(5.10.1.11) Maximum actual price used (currency per metric ton CO2e)

80

(5.10.1.12) Business decision-making processes the internal price is applied to

Select all that apply

- Capital expenditure
- Operations
- Procurement
- Product and R&D
- Opportunity management

(5.10.1.13) Internal price is mandatory within business decision-making processes

Select from:

- No

(5.10.1.14) % total emissions in the reporting year in selected scopes this internal price covers

1

(5.10.1.15) Pricing approach is monitored and evaluated to achieve objectives

Select from:

- Yes

(5.10.1.16) Details of how the pricing approach is monitored and evaluated to achieve your objectives

ZF conducted a pilot to analyze the impact and feasibility of an internal carbon price (ICP) in 2023. The ICP was designed as non-binding shadow price within one of ZF's business divisions. The ICP is planned for implementation in 2024 within the respective division. The ICP implementation is monitored and evaluated.

[Add row]

(5.11) Do you engage with your value chain on environmental issues?

Suppliers

(5.11.1) Engaging with this stakeholder on environmental issues

Select from:

Yes

(5.11.2) Environmental issues covered

Select all that apply

Climate change

Water

Customers

(5.11.1) Engaging with this stakeholder on environmental issues

Select from:

Yes

(5.11.2) Environmental issues covered

Select all that apply

Climate change

Investors and shareholders

(5.11.1) Engaging with this stakeholder on environmental issues

Select from:

Yes

(5.11.2) Environmental issues covered

Select all that apply

Climate change

Other value chain stakeholders

(5.11.1) Engaging with this stakeholder on environmental issues

Select from:

No, and we do not plan to within the next two years

(5.11.3) Primary reason for not engaging with this stakeholder on environmental issues

Select from:

Judged to be unimportant or not relevant

(5.11.4) Explain why you do not engage with this stakeholder on environmental issues

ZF considers customers, suppliers, investors, and shareholders as most relevant for engaging on environmental issues. Besides, the company prepares for the stakeholder-related requirements of the European Corporate Sustainability Reporting Directive (CSRD) and the corresponding European Sustainability Reporting Standards (ESRS).

[Fixed row]

(5.11.1) Does your organization assess and classify suppliers according to their dependencies and/or impacts on the environment?

Climate change

(5.11.1.1) Assessment of supplier dependencies and/or impacts on the environment

Select from:

Yes, we assess the dependencies and/or impacts of our suppliers

(5.11.1.2) Criteria for assessing supplier dependencies and/or impacts on the environment

Select all that apply

Contribution to supplier-related Scope 3 emissions

(5.11.1.3) % Tier 1 suppliers assessed

Select from:

100%

(5.11.1.4) Define a threshold for classifying suppliers as having substantive dependencies and/or impacts on the environment

Green Electricity is mandatory requirement for all new sourcing of production material at year Start of Production (SOP) (latest 2025). The suppliers are also required to request the usage of 100%green electricity also from their own supplies. Switch to green electricity can be tracked in our Green Electricity (GE) Spend Report. It is visualizing the suppliers' GE roadmap 2021 – 2025 in relation to the ZF spend.

(5.11.1.5) % Tier 1 suppliers meeting the thresholds for substantive dependencies and/or impacts on the environment

Select from:

51-75%

(5.11.1.6) Number of Tier 1 suppliers meeting the thresholds for substantive dependencies and/or impacts on the environment

2025

Water

(5.11.1.1) Assessment of supplier dependencies and/or impacts on the environment

Select from:

No, we do not currently assess the dependencies and/or impacts of our suppliers, but we plan to do so within the next two years

[Fixed row]

(5.11.2) Does your organization prioritize which suppliers to engage with on environmental issues?

Climate change

(5.11.2.1) Supplier engagement prioritization on this environmental issue

Select from:

- Yes, we prioritize which suppliers to engage with on this environmental issue

(5.11.2.2) Criteria informing which suppliers are prioritized for engagement on this environmental issue

Select all that apply

- In line with the criteria used to classify suppliers as having substantive dependencies and/or impacts relating to climate change

(5.11.2.4) Please explain

ZF makes purchases in those regions where the materials or components are needed. Of all production materials, 50% (2022: 51%) were procured locally in the year under review. As for non-production materials, 79% (2022: 81%) of the global spend excluding investments was sourced locally. Green electricity is the main decarbonization lever in the Supply Chain. All production material suppliers have to report their green energy roadmap up to 2025. Suppliers with the lowest performance are approached by ZF and guided on Green Electricity procurement, regional markets overview and Green Electricity campaigns are organized. In 2023, ZF developed Sustainability Score application, which is calculated from the 3 input KPI's: Green Electricity 2025, Business Partners Code of Conduct and NQC score. If the Suppliers' Score is below the expected threshold, they get the notifications and are supported by ZF in supplier's dialogues. ZF requests all relevant suppliers of production material to disclose the origin of the resources annually using the Conflict Minerals Reporting Template of the Responsible Minerals Initiative (RMI). The selection of relevant suppliers is based on a due diligence process and follows the OECD five-step plan. The annual conflict minerals report covers about 1,000 suppliers. In 2023, ZF introduced the Measure Tracking Reporting Tool for tracking the Supplier's PCF. The tool enables more purposeful collaboration with suppliers.

Water

(5.11.2.1) Supplier engagement prioritization on this environmental issue

Select from:

- Yes, we prioritize which suppliers to engage with on this environmental issue

(5.11.2.2) Criteria informing which suppliers are prioritized for engagement on this environmental issue

Select all that apply

Regulatory compliance

(5.11.2.4) Please explain

Water related requirements are part of the ZF Bid Conditions and are specifically embedded in Environmental Protection section. Here we refer to sustainable water consumption and water pollution management. On top of it there is also a clear requirement on the ISO 14001 implementation and corresponding certificate is to be submitted by the Suppliers for evidence. In water related section of the ISO 14001, additional water management guidelines inc. water related risks and opportunities are discussed. Therefore, our Suppliers are expected to determine appropriate approach towards the water activities, take action and evaluate effectiveness of their actions. Confirmation of the bid conditions and the ISO 14001 certificate provides us with transparency and helps to choose best performing players.

[Fixed row]

(5.11.5) Do your suppliers have to meet environmental requirements as part of your organization's purchasing process?

Climate change

(5.11.5.1) Suppliers have to meet specific environmental requirements related to this environmental issue as part of the purchasing process

Select from:

Yes, environmental requirements related to this environmental issue are included in our supplier contracts

(5.11.5.2) Policy in place for addressing supplier non-compliance

Select from:

Yes, we have a policy in place for addressing non-compliance

(5.11.5.3) Comment

ZF may draw legal consequences for violations of the human rights and environmental standards defined in the Business Partner Code of Conduct. This also applies if business partners do not cooperate appropriately or fail to take necessary or agreed measures. In these cases, ZF reserves the right to temporarily suspend the business relationship insofar as this is appropriate and appears to be necessary for the implementation of this Business Partner Code of Conduct and is made with appropriate notice. As a further escalation level, ZF sets the business partner to "New Business on Hold", i.e. this business partner is excluded from new awards. ZF reserves the right to terminate any business relationship for cause with a business partner who fails to comply with the human rights and/or environmental standards

defined in this Business Partner Code of Conduct and thus makes it unreasonable for ZF to continue the relationship. ZF will render notice to that business partner in advance of any termination for cause and, if feasible, allow for a remedy period.

Water

(5.11.5.1) Suppliers have to meet specific environmental requirements related to this environmental issue as part of the purchasing process

Select from:

Yes, environmental requirements related to this environmental issue are included in our supplier contracts

(5.11.5.2) Policy in place for addressing supplier non-compliance

Select from:

Yes, we have a policy in place for addressing non-compliance

(5.11.5.3) Comment

ISO 14001 relates to the design and implementation of an effective environmental management system (EMS) and comprises water-related aspects. All ZF plants are ISO 14001 certified. We therefore expect our suppliers to show voluntary commitment to environmental protection by implementing an environmental management system. Suppliers operating foundries, galvanizing and paint shops, manufacturers of Printed Circuit Boards (PCB), primary and secondary cells, electronic components or performing any surface treatment using chemicals or dyes, resins, leather etc., grease and oil shall provide a certificate according to ISO 14001 or an equivalent system. If this certificate is not available, then a time schedule for certification needs to be presented.

[Fixed row]

(5.11.6) Provide details of the environmental requirements that suppliers have to meet as part of your organization's purchasing process, and the compliance measures in place.

Climate change

(5.11.6.1) Environmental requirement

Select from:

- Monitoring and reduction of Product Carbon Footprint (PCF)/ product life-cycle emissions

(5.11.6.2) Mechanisms for monitoring compliance with this environmental requirement

Select all that apply

- Supplier scorecard or rating
- Supplier self-assessment
- Other, please specify :ZF Sustainability Score Dashboard, Commodity Purchasing Supplier Cockpit, GE roadmap 2023-2030 for ZF in Supply On Business Directory is to be maintained by the suppliers.

(5.11.6.3) % tier 1 suppliers by procurement spend required to comply with this environmental requirement

Select from:

- 100%

(5.11.6.4) % tier 1 suppliers by procurement spend in compliance with this environmental requirement

Select from:

- 51-75%

(5.11.6.7) % tier 1 supplier-related scope 3 emissions attributable to the suppliers required to comply with this environmental requirement

Select from:

- 100%

(5.11.6.8) % tier 1 supplier-related scope 3 emissions attributable to the suppliers in compliance with this environmental requirement

Select from:

- 51-75%

(5.11.6.9) Response to supplier non-compliance with this environmental requirement

Select from:

- Retain and engage

(5.11.6.10) % of non-compliant suppliers engaged

Select from:

- 76-99%

(5.11.6.11) Procedures to engage non-compliant suppliers

Select all that apply

- Assessing the efficacy and efforts of non-compliant supplier actions through consistent and quantified metrics
- Developing quantifiable, time-bound targets and milestones to bring suppliers back into compliance
- Providing information on appropriate actions that can be taken to address non-compliance
- Re-integrating suppliers back into upstream value chain based on the successful and verifiable completion of activities

(5.11.6.12) Comment

In our Bid Conditions we request from our Suppliers to develop a detailed climate neutrality roadmap and set clear science based targets for carbon reduction. For this purpose, we recommend SBTI as a guidance, but other tools are also acceptable. Electricity is mandatory requirement for all new sourcing of production material at year Start of Production (SOP) (latest 2025). The suppliers are also required to request the usage of 100%green electricity also from their own supplies. The document on Green Electricity guideline was created and sent to all suppliers. Switch to green electricity can be tracked in our Green Electricity (GE) Spend Report. It is visualizing the suppliers' GE roadmap 2021 – 2025 in relation to the ZF spend and thus is an instrument to track the suppliers' progress in achieving the new ZF Sustainability Bid Condition "100% GE by year SOP (latest 2025)". The GE %-share data has been collected via the GE survey in SupplyOn, where suppliers had been asked to maintain the data in the SupplyOn Business Directory. ZF will repeat the GE survey annually, so that suppliers have to regularly update their data. To increase the response rate of the GE survey an escalation process has been established. In case of non compliance, a Letter to supplier that he is not compliant to the ZF requirement "GE 2025 100%" was sent and triggered automatically as soon as the supplier is part of the bidders list for new sourcings.

Water

(5.11.6.1) Environmental requirement

Select from:

- Compliance with an environmental certification, please specify :ISO14001

(5.11.6.2) Mechanisms for monitoring compliance with this environmental requirement

Select all that apply

- Certification

(5.11.6.3) % tier 1 suppliers by procurement spend required to comply with this environmental requirement

Select from:

- 100%

(5.11.6.4) % tier 1 suppliers by procurement spend in compliance with this environmental requirement

Select from:

- 51-75%

(5.11.6.9) Response to supplier non-compliance with this environmental requirement

Select from:

- Retain and engage

(5.11.6.10) % of non-compliant suppliers engaged

Select from:

- 100%

(5.11.6.11) Procedures to engage non-compliant suppliers

Select all that apply

- Assessing the efficacy and efforts of non-compliant supplier actions through consistent and quantified metrics
- Developing quantifiable, time-bound targets and milestones to bring suppliers back into compliance
- Providing information on appropriate actions that can be taken to address non-compliance

(5.11.6.12) Comment

This is a requirement for new business. ISO 14001 relates to the design and implementation of an effective environmental management system (EMS) and comprises water-related aspects. All ZF plants are ISO 14001 certified. We therefore expect our suppliers to show voluntary commitment to environmental protection by implementing an environmental management system. Suppliers operating foundries, galvanizing and paint shops, manufacturers of Printed Circuit Boards (PCB), primary and secondary cells, electronic components or performing any surface treatment using chemicals or dyes, resins, leather etc., grease and oil shall provide a certificate according to ISO 14001 or an equivalent system. If this certificate is not available, then a time schedule for certification needs to be presented.

Climate change

(5.11.6.1) Environmental requirement

Select from:

- Environmental disclosure through a non-public platform

(5.11.6.2) Mechanisms for monitoring compliance with this environmental requirement

Select all that apply

- Supplier scorecard or rating
- Supplier self-assessment

(5.11.6.3) % tier 1 suppliers by procurement spend required to comply with this environmental requirement

Select from:

- 100%

(5.11.6.4) % tier 1 suppliers by procurement spend in compliance with this environmental requirement

Select from:

- 51-75%

(5.11.6.7) % tier 1 supplier-related scope 3 emissions attributable to the suppliers required to comply with this environmental requirement

Select from:

- 100%

(5.11.6.8) % tier 1 supplier-related scope 3 emissions attributable to the suppliers in compliance with this environmental requirement

Select from:

- 51-75%

(5.11.6.9) Response to supplier non-compliance with this environmental requirement

Select from:

- Retain and engage

(5.11.6.10) % of non-compliant suppliers engaged

Select from:

- 76-99%

(5.11.6.11) Procedures to engage non-compliant suppliers

Select all that apply

- Assessing the efficacy and efforts of non-compliant supplier actions through consistent and quantified metrics
- Providing information on appropriate actions that can be taken to address non-compliance
- Re-integrating suppliers back into upstream value chain based on the successful and verifiable completion of activities

(5.11.6.12) Comment

ZF Material Management sustainability team together with cross functional support developed a tool combining different criteria of a supplier's sustainability performance in one solution: the ZF Sustainability Score. Basis for this was to manage and assess the broad variety of supplier information. This was a complex and essential task for our company, especially when this information needs to be easy understandable for everyone. The Sustainability Score, which was launched in May 2023, expects Suppliers' compliance with minimum requirements and measures sustainability performance using different KPI such as: •green electricity share in 2025, • result of the NQC sustainability questionnaire •and acceptance of the ZF Business Partner Code of Conduct. In case the suppliers do not provide the required KPIs, ZF send them automatic reminders during sourcing with the information they cannot be accepted if they are not compliant. Moreover, ZF Sustainability Business Support is working with the suppliers to improve their targets KPI in the e.g. Supplier's dialogues.

Climate change

(5.11.6.1) Environmental requirement

Select from:

- Measuring product-level emissions

(5.11.6.2) Mechanisms for monitoring compliance with this environmental requirement

Select all that apply

- Supplier scorecard or rating
- Supplier self-assessment

(5.11.6.3) % tier 1 suppliers by procurement spend required to comply with this environmental requirement

Select from:

- 100%

(5.11.6.4) % tier 1 suppliers by procurement spend in compliance with this environmental requirement

Select from:

- 1-25%

(5.11.6.7) % tier 1 supplier-related scope 3 emissions attributable to the suppliers required to comply with this environmental requirement

Select from:

- 100%

(5.11.6.8) % tier 1 supplier-related scope 3 emissions attributable to the suppliers in compliance with this environmental requirement

Select from:

- 1-25%

(5.11.6.9) Response to supplier non-compliance with this environmental requirement

Select from:

- Retain and engage

(5.11.6.10) % of non-compliant suppliers engaged

Select from:

- 1-25%

(5.11.6.11) Procedures to engage non-compliant suppliers

Select all that apply

- Assessing the efficacy and efforts of non-compliant supplier actions through consistent and quantified metrics
- Developing quantifiable, time-bound targets and milestones to bring suppliers back into compliance

(5.11.6.12) Comment

Since January 2022 we started asking our direct production material suppliers to provide a Product Carbon Footprint (PCF) for the year of Start of Production (SOP) and the following year ("year SOP1") for each part from our production material suppliers in sourcing process. PCF and other sustainability topics have become one of the main criteria in suppliers' nomination process (cost, quality, etc). In 2023 PCF data disclosure became mandatory req in sourcing for high volume parts. In the event that the supplier does not meet the PCF requirements for sourcing high-volume parts as defined by internal regulations, a deadline is set for the supplier (max. 12 months) to provide the above data. In 2023 we reached out to 20% suppliers who did not provided mandatory PCF (1-25%). In the case of sourcing for low-volume parts, providing PCF is still optional, however, actions have already begun to extend these requirements to this scope of sourcing.

Climate change

(5.11.6.1) Environmental requirement

Select from:

- Adoption of the UN International Labour Organization Principles

(5.11.6.2) Mechanisms for monitoring compliance with this environmental requirement

Select all that apply

Supplier scorecard or rating

(5.11.6.3) % tier 1 suppliers by procurement spend required to comply with this environmental requirement

Select from:

100%

(5.11.6.4) % tier 1 suppliers by procurement spend in compliance with this environmental requirement

Select from:

51-75%

(5.11.6.7) % tier 1 supplier-related scope 3 emissions attributable to the suppliers required to comply with this environmental requirement

Select from:

100%

(5.11.6.8) % tier 1 supplier-related scope 3 emissions attributable to the suppliers in compliance with this environmental requirement

Select from:

51-75%

(5.11.6.9) Response to supplier non-compliance with this environmental requirement

Select from:

Retain and engage

(5.11.6.10) % of non-compliant suppliers engaged

Select from:

51-75%

(5.11.6.11) Procedures to engage non-compliant suppliers

Select all that apply

Assessing the efficacy and efforts of non-compliant supplier actions through consistent and quantified metrics

(5.11.6.12) Comment

ZF has pledged to uphold globally recognized human rights, such as the principles outlined by the United Nations Guiding Principles on Business and Human Rights and the OECD Guidelines for Multinational Enterprises. We prioritize the rights defined in the International Bill of Human Rights and the fundamental labor standards of the International Labour Organization (ILO). ZF clearly expects its business partners to observe and comply with the principles outlined by the United Nations Guiding Principles on Business and Human Rights and the OECD Guidelines for Multinational Enterprises, all applicable compliance laws and regulations, as well as the core values and principles as defined in this Business Partner Code of Conduct.

Climate change

(5.11.6.1) Environmental requirement

Select from:

Monitoring and reduction of Product Carbon Footprint (PCF)/ product life-cycle emissions

(5.11.6.2) Mechanisms for monitoring compliance with this environmental requirement

Select all that apply

Supplier scorecard or rating

Supplier self-assessment

(5.11.6.3) % tier 1 suppliers by procurement spend required to comply with this environmental requirement

Select from:

100%

(5.11.6.4) % tier 1 suppliers by procurement spend in compliance with this environmental requirement

Select from:

26-50%

(5.11.6.7) % tier 1 supplier-related scope 3 emissions attributable to the suppliers required to comply with this environmental requirement

Select from:

100%

(5.11.6.8) % tier 1 supplier-related scope 3 emissions attributable to the suppliers in compliance with this environmental requirement

Select from:

26-50%

(5.11.6.9) Response to supplier non-compliance with this environmental requirement

Select from:

Retain and engage

(5.11.6.10) % of non-compliant suppliers engaged

Select from:

1-25%

(5.11.6.11) Procedures to engage non-compliant suppliers

Select all that apply

- Assessing the efficacy and efforts of non-compliant supplier actions through consistent and quantified metrics
- Developing quantifiable, time-bound targets and milestones to bring suppliers back into compliance
- Providing information on appropriate actions that can be taken to address non-compliance

(5.11.6.12) Comment

Product Carbon Footprint (PCF) data of sourced parts is key to transparency on ZFs scope 3 upstream emissions and ensure that CO2 conscient decisions are taken. In the third quarter of 2022, ZF introduced the Product Carbon Footprint (PCF) data disclosure in the purchasing process. Suppliers have to provide PCF information for offered parts. In 2022, ZF also introduced a CO2e reporting tool for tracking and reporting PCF information. In 2023, the suppliers' PCF became mandatory for cases of high-spend sourcing of production material. As the process of PCF data collection in new sourcings was newly introduced, the number of available PCFs stayed limited. To increase the impact of engagement, ZF Materials Management decided to intensify the internal but also external training for suppliers on PCF. PCF general and PCF Deep Dives training courses were provided in the live sessions followed by the Q and A with the Suppliers. More than 800 Suppliers took part in these sessions. Furthermore, it was decided to make the disclosure of the PCF data mandatory for all high-volume sourcing cases. The PCF disclosure is requested from our suppliers as part of the Request for Quote (RfQ) process from July 2023 on. Suppliers' PCF data is automatically transferred to ZF's internal sourcing and awarding system. This way, lifecycle costs and PCF values are evaluated by the Sourcing Decision Board (SDB). As a result of our activities, PCF provision rate increased from 1 % in 2022 to 25 % in 2023

Climate change

(5.11.6.1) Environmental requirement

Select from:

- Environmental disclosure through a public platform

(5.11.6.2) Mechanisms for monitoring compliance with this environmental requirement

Select all that apply

- Supplier self-assessment

(5.11.6.3) % tier 1 suppliers by procurement spend required to comply with this environmental requirement

Select from:

- 100%

(5.11.6.4) % tier 1 suppliers by procurement spend in compliance with this environmental requirement

Select from:

- 76-99%

(5.11.6.7) % tier 1 supplier-related scope 3 emissions attributable to the suppliers required to comply with this environmental requirement

Select from:

100%

(5.11.6.8) % tier 1 supplier-related scope 3 emissions attributable to the suppliers in compliance with this environmental requirement

Select from:

51-75%

(5.11.6.9) Response to supplier non-compliance with this environmental requirement

Select from:

Retain and engage

(5.11.6.10) % of non-compliant suppliers engaged

Select from:

51-75%

(5.11.6.11) Procedures to engage non-compliant suppliers

Select all that apply

- Assessing the efficacy and efforts of non-compliant supplier actions through consistent and quantified metrics
- Developing quantifiable, time-bound targets and milestones to bring suppliers back into compliance

(5.11.6.12) Comment

According to our Sustainability Bid Conditions, all our Suppliers must complete and share the latest version of the Self-Assessment Questionnaire (SAQ) on sustainability on plant level via the NQC Supplier Assurance Platform. The score is transferred to our internal ZF Sustainability Score tool which helps to identify the compliant suppliers.

Climate change

(5.11.6.1) Environmental requirement

Select from:

- Waste and resource reduction and material circularity

(5.11.6.2) Mechanisms for monitoring compliance with this environmental requirement

Select all that apply

- Supplier scorecard or rating
- Supplier self-assessment

(5.11.6.3) % tier 1 suppliers by procurement spend required to comply with this environmental requirement

Select from:

- 100%

(5.11.6.4) % tier 1 suppliers by procurement spend in compliance with this environmental requirement

Select from:

- 51-75%

(5.11.6.7) % tier 1 supplier-related scope 3 emissions attributable to the suppliers required to comply with this environmental requirement

Select from:

- 100%

(5.11.6.8) % tier 1 supplier-related scope 3 emissions attributable to the suppliers in compliance with this environmental requirement

Select from:

- 51-75%

(5.11.6.9) Response to supplier non-compliance with this environmental requirement

Select from:

Retain and engage

(5.11.6.10) % of non-compliant suppliers engaged

Select from:

1-25%

(5.11.6.11) Procedures to engage non-compliant suppliers

Select all that apply

Providing information on appropriate actions that can be taken to address non-compliance

(5.11.6.12) Comment

ZF is aware of the risk to humankind and nature which are linked to material handling and use. As stated in the ZF Business Partners Code of Conduct, ZF expects business partners to reduce material input, use recycled/renewable materials, contribute to closed material and product cycles and promote circularity within their value chain. Circular economy is embedded in the sourcing process. According to our requirements, Suppliers have to produce material in line with circular economy principles. Moreover, Suppliers have to increase the share of secondary raw material (both: recycled material as defined in ISO 14021 and reutilization materials within the process) for all materials. For products with a precise material specification, suppliers shall follow the defined requirements, but parallelly achieve the maximum share of secondary raw material. ZF is also defines disposal of waste in general and from the disposal of hazardous substances. ZF expects business partners to reduce the generation of waste to a minimum. Hence, specific requirements regarding care for natural environment and waste reduction were also considered in sourcing. Recyclables must always be separated and in the best case reused or recycled. Hazardous substances, chemicals and substances must be labeled, and their safe handling, movement, storage, and reuse must be ensured. Waste reduction and Hazardous Substances topic is part of the Business Partner Code of Conduct (2023)

[Add row]

(5.11.7) Provide further details of your organization's supplier engagement on environmental issues.

Climate change

(5.11.7.2) Action driven by supplier engagement

Select from:

- Emissions reduction

(5.11.7.3) Type and details of engagement

Capacity building

- Other capacity building activity, please specify :Expanded sustainability organization to drive sustainability across the commodities, divisions and ZF regions

Innovation and collaboration

- Collaborate with suppliers on innovations to reduce environmental impacts in products and services
- Collaborate with suppliers on innovative business models and corporate renewable energy sourcing mechanisms

(5.11.7.4) Upstream value chain coverage

Select all that apply

- Tier 1 suppliers

(5.11.7.5) % of tier 1 suppliers by procurement spend covered by engagement

Select from:

- 100%

(5.11.7.6) % of tier 1 supplier-related scope 3 emissions covered by engagement

Select from:

- 100%

(5.11.7.9) Describe the engagement and explain the effect of your engagement on the selected environmental action

To ensure responsible procurement practices, ZF Materials Management continue to work with cross-functional Sourcing Decision Board (SDB). This is the highest decision-making sourcing body at ZF and ensures that the selected suppliers fulfil sustainability, quality, technical, logistics and pricing requirements. Target conflicts are also solved within the SDB. To strengthen the collaboration and communication on an operational level, a Sustainability Business Support (SBS) organization was also expanded. The SBS regional experts were nominated and hired in 2023 and drive sustainability topics throughout the globe. They collaborate within their

structures and cover all regional best-practices, drive sustainability topics and collaborate in sustainability projects with the supplier base. This allows for comprehensive transparency, helps to reduce carbon emissions and identify potential risks, vulnerabilities, and opportunities for improvement. By understanding the practices and operations of our supplier base, ZF can better manage and mitigate risks associated with environmental impacts, labor practices, ethical considerations, and regulatory compliance. By actively assessing and addressing these risks, ZF can minimize potential disruptions, reputational damage, legal liabilities. Our new collaboration set up and extra created supportive functions are to reach to 100 % suppliers in long-term scenario. Engaging with 100% of suppliers ensures that all adhere to the same standards, policies, and regulations set by ZF. This approach helps create a level playing field and fosters a culture of responsibility and ethical conduct.

(5.11.7.10) Engagement is helping your tier 1 suppliers meet an environmental requirement related to this environmental issue

Select from:

Yes, please specify the environmental requirement :Improved sustainability performance in e.g. green electricity procurement, PCF transparency, NQC reqs. Requirements are included in the ZF SUS Score and ZF Bid Conditions.

(5.11.7.11) Engagement is helping your tier 1 suppliers engage with their own suppliers on the selected action

Select from:

Yes

Water

(5.11.7.2) Action driven by supplier engagement

Select from:

No other supplier engagement

Climate change

(5.11.7.2) Action driven by supplier engagement

Select from:

Upstream value chain transparency and human rights

(5.11.7.3) Type and details of engagement

Capacity building

- Develop or distribute resources on how to map upstream value chain
- Provide training, support and best practices on how to mitigate environmental impact

Information collection

- Collect environmental risk and opportunity information at least annually from suppliers
- Collect targets information at least annually from suppliers

(5.11.7.4) Upstream value chain coverage

Select all that apply

- Tier 1 suppliers

(5.11.7.5) % of tier 1 suppliers by procurement spend covered by engagement

Select from:

- 100%

(5.11.7.6) % of tier 1 supplier-related scope 3 emissions covered by engagement

Select from:

- 100%

(5.11.7.9) Describe the engagement and explain the effect of your engagement on the selected environmental action

The extraction of raw materials comes with environmental and social risk. The mining and trading of conflict minerals may contribute to financing armed conflicts or human rights violations. As ZF is aware of these risks, the company strives to comply with environmental and human rights standards along the entire value chain. ZF requests all relevant suppliers of production material to disclose the origin of the resources annually using the Conflict Minerals Reporting Template of the Responsible Minerals Initiative (RMI). The selection of relevant suppliers is based on a due diligence process and follows the OECD five-step plan. The annual conflict minerals reporting covers about 1,000 suppliers. Since these minerals are necessary for technical functions in some of the company's products, ZF works to avoid sourcing from potentially critical smelters. All relevant suppliers receive written notification explaining that ZF is committed to eliminating critical smelters from

their supply chains. We also encourage the supplier to source critical raw material from verified sources, using independent third party certification, such as the Initiative for Responsible Mining Assurance (IRMA) standard for responsible mining. Suppliers of 3TG (tin, tantalum, tungsten, and gold), Cobalt, Mica and suppliers that use these raw materials in their products must exercise due diligence following the OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict Affected and High-Risk Areas. All requirements which are transparency related are among other mandatory sustainability requirements and part of the contractual agreements for Production Material Suppliers such as ZF Corporate Bid Conditions and ZF Business Partners Code of Conduct. To support our Supplier's transparency, in 2023 we conducted our annual responsible minerals campaign for conflict Minerals and Extended Minerals. Together with our external partner Assent, ZF provided supplier training, conflict minerals due diligence guidelines and ongoing support available via e-mail, chat and phone. In the training, our suppliers could learn about human rights risks in mineral supply chains and relevant international legislation. In addition, the suppliers were instructed how to complete reporting templates and could raise their questions in a Q&A session. This year ZF is continuing its conflict minerals due diligence activities and expanding its training offer to multiple training sessions.

(5.11.7.10) Engagement is helping your tier 1 suppliers meet an environmental requirement related to this environmental issue

Select from:

Yes, please specify the environmental requirement :Sustainable sourcing: Natural Rubber, Critical Raw Materials, Conflict Minerals with Cobalt and Mica as part of the sustainability requirements in sourcing (in ZF Corporate Bid Conditions)

(5.11.7.11) Engagement is helping your tier 1 suppliers engage with their own suppliers on the selected action

Select from:

Yes

Climate change

(5.11.7.2) Action driven by supplier engagement

Select from:

Adaptation to climate change

(5.11.7.3) Type and details of engagement

Capacity building

Provide training, support and best practices on how to make credible renewable energy usage claims

- Provide training, support and best practices on how to measure GHG emissions
- Support suppliers to set their own environmental commitments across their operations

Information collection

- Collect GHG emissions data at least annually from suppliers

Innovation and collaboration

- Collaborate with suppliers on innovative business models and corporate renewable energy sourcing mechanisms

(5.11.7.4) Upstream value chain coverage

Select all that apply

- Tier 1 suppliers

(5.11.7.5) % of tier 1 suppliers by procurement spend covered by engagement

Select from:

- 100%

(5.11.7.6) % of tier 1 supplier-related scope 3 emissions covered by engagement

Select from:

- 100%

(5.11.7.9) Describe the engagement and explain the effect of your engagement on the selected environmental action

To support the rollout of sustainability requirements and to raise awareness on sustainability focus topics in the supply chain, ZF conducted multiple free-of-charge training for the supplier base. Over the course of 2023, ZF offered multiple training sessions on Product Carbon Footprint (PCF) calculation and reporting, Climate Ambition/Sustainability in the Supply Chain. Moreover, Green Electricity procurement and ZF Sustainability requirements: ZF Sustainability Score, ZF Sustainability Bid Conditions including all decarbonization and social responsibility expectations were available for the Suppliers in the live sessions every single month in 2023. More deep-dive training sessions on sustainability topics were offered free of charge. Over the course of 2023, more than 2400 Suppliers participated in our trainings. As green electricity is the most relevant lever to achieving decarbonization of the supply chain, we also developed the “ZF Supplier Guide and FAQ on Green Electricity”. It contains definitions and ZF’s expectations as well as different procurement options to obtain green electricity (GE). The guide is available for all suppliers in ZF’s Supplier Business Portal. It has also been attached to the digital GE roadmap survey that ZF conducted during 2022, collecting feedback of more

than 1.200 suppliers, which are asked to update their GE roadmaps on a yearly basis. Our suppliers benefit from these trainings which is reflected in their consistent approach to switching to Green Power. The share of green power has improved steadily during the year up to 41.4% in 2023 (increase from 35% in 2022) and will continue to be driven by ZF until our target of "Increase Green Electricity Spend Coverage with ZF's direct suppliers for Production Material to 100% by 2025 is reached. Our Green Electricity target set for our Suppliers is to use 100% of Green Electricity for ZF products by end of 2025 with interim target of 90% by end of 2024.

(5.11.7.10) Engagement is helping your tier 1 suppliers meet an environmental requirement related to this environmental issue

Select from:

Yes, please specify the environmental requirement :Green electricity requirements, PCF transparency in sourcing, ZF sustainability strategy targets: green material procurement, energy efficiency, responsible sourcing,

(5.11.7.11) Engagement is helping your tier 1 suppliers engage with their own suppliers on the selected action

Select from:

Yes

Climate change

(5.11.7.2) Action driven by supplier engagement

Select from:

Emissions reduction

(5.11.7.3) Type and details of engagement

Capacity building

- Develop or distribute resources on how to map upstream value chain
- Provide training, support and best practices on how to measure GHG emissions
- Support suppliers to develop public time-bound action plans with clear milestones

Information collection

- Collect GHG emissions data at least annually from suppliers

Innovation and collaboration

- Collaborate with suppliers on innovations to reduce environmental impacts in products and services

(5.11.7.4) Upstream value chain coverage

Select all that apply

- Tier 1 suppliers

(5.11.7.5) % of tier 1 suppliers by procurement spend covered by engagement

Select from:

- 100%

(5.11.7.6) % of tier 1 supplier-related scope 3 emissions covered by engagement

Select from:

- 100%

(5.11.7.9) Describe the engagement and explain the effect of your engagement on the selected environmental action

Product Carbon Footprint (PCF) data of sourced parts is key to transparency on ZFs scope 3 upstream emissions and ensure that CO2 conscient decisions are taken. In the third quarter of 2022, ZF introduced the Product Carbon Footprint (PCF) data disclosure in the purchasing process. Suppliers have to provide PCF information for offered parts. In 2022, ZF also introduced a CO2e reporting tool for tracking and reporting PCF information. In 2023, the suppliers' PCF became mandatory for cases of high-spend sourcing of production material. As the process of PCF data collection in new sourcing was newly introduced, the number of available PCFs stayed limited. To increase the impact of engagement, ZF Materials Management decided to intensify the internal but also external training for suppliers on PCF. PCF general and PCF Deep Dives training courses were provided in the live sessions followed by the Q and A with the Suppliers. More than 800 Suppliers took part in these sessions. Furthermore, it was decided to make the disclosure of the PCF data mandatory for all high-volume sourcing cases. The PCF disclosure is requested from our suppliers as part of the Request for Quote (RfQ) process from July 2023 on. Suppliers' PCF data is automatically transferred to ZF's internal sourcing and awarding system. This way, lifecycle costs and PCF values are evaluated by the Sourcing Decision Board (SDB). Carbon removal from the operations is also discussed in the live sessions with the Suppliers where they raise their questions relating to e.g. Green Electricity procurement options. Switch to green fuel also supports the lower Carbon Footprint of the delivered products. To gain full transparency on the Product emission level, we developed the tracking system in the Power BI which identifies the supplier's PCF status. As a result of our activities, PCF provision rate increased from 1 % in 2022 to 25 % in 2023. Currently we have set a target for Path 1 SWAT Cases- our Suppliers are to provide PCF in 70% nominated cases. We have already reached this target with 72% cases (Sep,2024).

(5.11.7.10) Engagement is helping your tier 1 suppliers meet an environmental requirement related to this environmental issue

Select from:

- Yes, please specify the environmental requirement :PCF transparency (ZF Corporate Bid Conditions)

(5.11.7.11) Engagement is helping your tier 1 suppliers engage with their own suppliers on the selected action

Select from:

- Yes

Climate change

(5.11.7.2) Action driven by supplier engagement

Select from:

- Emissions reduction

(5.11.7.3) Type and details of engagement

Capacity building

- Support suppliers to set their own environmental commitments across their operations

Innovation and collaboration

- Collaborate with suppliers on innovations to reduce environmental impacts in products and services
- Collaborate with suppliers to develop reuse infrastructure and reuse models

(5.11.7.4) Upstream value chain coverage

Select all that apply

- Tier 1 suppliers

(5.11.7.5) % of tier 1 suppliers by procurement spend covered by engagement

Select from:

100%

(5.11.7.6) % of tier 1 supplier-related scope 3 emissions covered by engagement

Select from:

100%

(5.11.7.9) Describe the engagement and explain the effect of your engagement on the selected environmental action

Careful and efficient use of resources is of central importance to ZF. We expect our suppliers to continuously reduce environmental impacts and hazards and to continuously improve environmental protection within their own sphere of influence. It is necessary to reduce the consumption of resources (especially energy, water, primary raw primary materials) and environmental impacts (especially emissions, pollutants, waste) must be constantly minimised. Suppliers have to implement an environmental management system in accordance with ISO 14001 or Eco-Management and Audit Scheme (EMAS) and provide evidence thereof by submitting a corresponding certificate. ZF is aware of the hazards to humans and the environment resulting from the disposal of waste in general and from the disposal of hazardous substances. ZF expects business partners to reduce the generation of waste to a minimum. Hence, specific requirements regarding care for natural environment and waste reduction were also considered in sourcing. Recyclables must always be separated and in the best case reused or recycled. Hazardous substances, chemicals and substances must be labeled, and their safe handling, movement, storage, and reuse must be ensured. Waste reduction and Hazardous Substances topic is part of the Business Partner Code of Conduct (2023). ZF managed to developed a number of activities with the Suppliers, where waste reduction and circularity was successfully implemented. In 2023, Division CVS (part of ZF Group) together with the Supplier Domo started a pilot circularity project for plastic component. Recycled scrap from the air bags production in Division R is processed by Domo Company into granules (Technyl4Earth), which are recycled and become a part of the Relay Valve component. It is to be used for the body and cover of the Relay Valve by another supplier. Apart from financial savings, this innovation will save up to 34% of Carbon coming from the raw material. Currently, the project is still in development, but once fully rolled out it opens the door for other direct Suppliers who can utilise the concept in their manufacturing.

(5.11.7.10) Engagement is helping your tier 1 suppliers meet an environmental requirement related to this environmental issue

Select from:

Yes, please specify the environmental requirement :Share of secondary material and Environmental Protection

(5.11.7.11) Engagement is helping your tier 1 suppliers engage with their own suppliers on the selected action

Select from:

Yes

Climate change

(5.11.7.2) Action driven by supplier engagement

Select from:

Emissions reduction

(5.11.7.3) Type and details of engagement

Information collection

Other information collection activity, please specify :Corporate Bid Conditions required in sourcing

(5.11.7.4) Upstream value chain coverage

Select all that apply

Tier 1 suppliers

(5.11.7.5) % of tier 1 suppliers by procurement spend covered by engagement

Select from:

100%

(5.11.7.6) % of tier 1 supplier-related scope 3 emissions covered by engagement

Select from:

100%

(5.11.7.9) Describe the engagement and explain the effect of your engagement on the selected environmental action

In 2023 sustainability related tender conditions were revised. The update includes extended requirements regarding climate and environment as well as new requirements for social responsibility and responsible sourcing. Since the end of 2023, acceptance of the requirements has been mandatory for production material suppliers to be awarded new business. These bid conditions reflect our sustainability strategy, legal and customers' requirements and are regularly maintained according to legislative obligations and international strategies. The main focus in our sustainability bid conditions were 100% Green Electricity commitment at year Start of Production (latest 2025), climate strategy/ roadmap disclosure, Product Carbon Footprint (PCF) disclosure, material specific decarbonisation requirements, share of recycled material among others. These initiatives helped the suppliers to incorporate sustainability in their decision making process and improved their sustainability scores.

(5.11.7.10) Engagement is helping your tier 1 suppliers meet an environmental requirement related to this environmental issue

Select from:

Yes, please specify the environmental requirement :PCF transparency, Circularity, Share of recycled material, Green Electricity, etc.

(5.11.7.11) Engagement is helping your tier 1 suppliers engage with their own suppliers on the selected action

Select from:

Yes

Climate change

(5.11.7.2) Action driven by supplier engagement

Select from:

Adoption of the United Nation's International Labour Organization principles

(5.11.7.3) Type and details of engagement

Innovation and collaboration

Engage with suppliers to advocate for policy or regulatory change to address environmental challenges

Facilitate adoption of a unified climate transition approach with suppliers

(5.11.7.4) Upstream value chain coverage

Select all that apply

Tier 1 suppliers

(5.11.7.5) % of tier 1 suppliers by procurement spend covered by engagement

Select from:

100%

(5.11.7.6) % of tier 1 supplier-related scope 3 emissions covered by engagement

Select from:

100%

(5.11.7.9) Describe the engagement and explain the effect of your engagement on the selected environmental action

ZF has pledged to uphold globally recognized human rights, such as the principles outlined by the United Nations Guiding Principles on Business and Human Rights and the OECD Guidelines for Multinational Enterprises. We prioritize the rights defined in the International Bill of Human Rights and the fundamental labor standards of the International Labour Organization (ILO). ZF clearly expects its business partners to observe and comply with the principles outlined by the United Nations Guiding Principles on Business and Human Rights and the OECD Guidelines for Multinational Enterprises, all applicable compliance laws and regulations, as well as the core values and principles as defined in this Business Partner Code of Conduct.

(5.11.7.10) Engagement is helping your tier 1 suppliers meet an environmental requirement related to this environmental issue

Select from:

No, this engagement is unrelated to meeting an environmental requirement

(5.11.7.11) Engagement is helping your tier 1 suppliers engage with their own suppliers on the selected action

Select from:

Unknown

Climate change

(5.11.7.2) Action driven by supplier engagement

Select from:

- Circular economy

(5.11.7.3) Type and details of engagement

Information collection

- Collect GHG emissions data at least annually from suppliers

Innovation and collaboration

- Collaborate with suppliers on innovations to reduce environmental impacts in products and services
- Collaborate with suppliers to develop reuse infrastructure and reuse models

(5.11.7.4) Upstream value chain coverage

Select all that apply

- Tier 1 suppliers

(5.11.7.5) % of tier 1 suppliers by procurement spend covered by engagement

Select from:

- 100%

(5.11.7.6) % of tier 1 supplier-related scope 3 emissions covered by engagement

Select from:

- 100%

(5.11.7.9) Describe the engagement and explain the effect of your engagement on the selected environmental action

ZF currently runs a number of pilot projects with the Suppliers, where waste reduction and concept of circularity are continuously developed and improved, e.g. with Voestalpine. In cooperation with Voestalpine ZF has developed a circular concept for tooling steel. ZF is today deeply involved into the tooling planning of our value

chain partners for HPDC Tools and has a good understanding when tools need to be replaced. ZF sends the tooling assembled back to Voestalpine (locations/partners are available in each region). Voestalpine is recycling those tooling steel (frames and insert separately as different type of steel) and send a new steel block to the tooling makers. With that a significant reduction in CO2 is being achieved which goes along with a cost reduction. With that our value chain partners become more decarbonized and be more competitive.

(5.11.7.10) Engagement is helping your tier 1 suppliers meet an environmental requirement related to this environmental issue

Select from:

- Yes, please specify the environmental requirement :Circular Economy (ZF Corporate Bid Conditions)

(5.11.7.11) Engagement is helping your tier 1 suppliers engage with their own suppliers on the selected action

Select from:

- Yes

Climate change

(5.11.7.2) Action driven by supplier engagement

Select from:

- Removal of plastic from the environment

(5.11.7.3) Type and details of engagement

Capacity building

- Support suppliers to set their own environmental commitments across their operations

Innovation and collaboration

- Other innovation and collaboration activity, please specify :Engage and encourage suppliers to reduce plastic in the production line

(5.11.7.4) Upstream value chain coverage

Select all that apply

Tier 1 suppliers

(5.11.7.5) % of tier 1 suppliers by procurement spend covered by engagement

Select from:

100%

(5.11.7.6) % of tier 1 supplier-related scope 3 emissions covered by engagement

Select from:

100%

(5.11.7.9) Describe the engagement and explain the effect of your engagement on the selected environmental action

ZF managed to develop a number of activities with the Suppliers, where waste reduction and circularity was successfully implemented. In 2024, Division CVS (part of ZF Group) together with the Supplier DOMO started a pilot circularity project for plastic component used in Relay Valve body and cover with Raw material coming from recycled scrap of the air bags production. Apart from potential of cost reduction, this innovation will lead to up approximately 32% of CO2e reduction on the raw material level. Currently, the project is still in development, but once fully rolled out it opens the door for other direct Suppliers who can utilize the concept in their manufacturing.

(5.11.7.10) Engagement is helping your tier 1 suppliers meet an environmental requirement related to this environmental issue

Select from:

Yes, please specify the environmental requirement :Circularity

(5.11.7.11) Engagement is helping your tier 1 suppliers engage with their own suppliers on the selected action

Select from:

Yes

[Add row]

(5.11.9) Provide details of any environmental engagement activity with other stakeholders in the value chain.

Climate change

(5.11.9.1) Type of stakeholder

Select from:

- Customers

(5.11.9.2) Type and details of engagement

Education/Information sharing

- Share information on environmental initiatives, progress and achievements

Innovation and collaboration

- Align your organization's goals to support customers' targets and ambitions
- Collaborate with stakeholders on innovations to reduce environmental impacts in products and services

(5.11.9.3) % of stakeholder type engaged

Select from:

- 100%

(5.11.9.4) % stakeholder-associated scope 3 emissions

Select from:

- 100%

(5.11.9.5) Rationale for engaging these stakeholders and scope of engagement

ZF regularly aligns with its passenger car customer (OEMs) and offers to increase the share of electricity from renewable sources in all production lines. ZF is committed to use electricity solely from renewable sources. Regular discussions and alignments with passenger car customers (OEMs) take place during new project sourcing's and ongoing program management discussions. With the target to maximize the green energy shares across all ZF's operations and corporate functions,

ZF is engaging with our passenger car customers (OEMs) to align on the roadmaps to solely deliver parts to them that will have been produced in plants that use 100% electricity from renewable sources. The rationale behind this is, that all products that are supplied by ZF will be originating from 100% electricity from renewable sources. After some strategic realignment and in order to accelerate the progress towards ZF's 2030 carbon reduction targets, ZF is committed to using electricity solely from renewable sources through 2025. In 2023, the target was brought forward from 2030 to 2025, five years earlier than originally planned.

(5.11.9.6) Effect of engagement and measures of success

Measures implemented for all ZF plants globally, across all product lines, to achieve 100% electricity usage from renewable sources by 2025. "Green energy fast tracks" have been implemented for various plants globally to achieve 100% renewable energy already before 2025, in close alignment with customers receiving parts from these plants. Measures to increase the shares of renewable energy are, among others, the installation of renewable energy production capabilities for own usage at ZF plants and investments in the built up of new renewable energy production facilities, like offshore wind power stations. The measure of success for this initiative is therefore based on ZF being able to achieve a share of 100% electricity from renewable sources for all global plants by 2025. The successful implementation of this measure will result in a significant Scope 2 emissions reduction for ZF and correspondingly, Scope 3 emissions reductions for customers.

Climate change

(5.11.9.1) Type of stakeholder

Select from:

- Customers

(5.11.9.2) Type and details of engagement

Education/Information sharing

- Share information about your products and relevant certification schemes

Innovation and collaboration

- Align your organization's goals to support customers' targets and ambitions
- Collaborate with stakeholders on innovations to reduce environmental impacts in products and services

(5.11.9.3) % of stakeholder type engaged

Select from:

- Less than 1%

(5.11.9.4) % stakeholder-associated scope 3 emissions

Select from:

- 1-25%

(5.11.9.5) Rationale for engaging these stakeholders and scope of engagement

ZF cooperates with one of our braking product line customers (OEM). The specific project focusses on the new sourcing for a battery electric vehicle (BEV) platform with start of production (SOP) in 2025/2026. Specifically, the project aims to significantly increase the share of recycled aluminum. This contributes to a significant CO2 and waste reduction and thereby implements circularity aspects.

(5.11.9.6) Effect of engagement and measures of success

A switch to 100% green energy in the whole sub supply chain of the brake controls aluminum valve body (down to electrolysis process) is planned to be implemented in time for the SOP. In addition, the share of secondary material will be increased by relying on a closed loop for scrap re-usage. The combination of both measures, that will be implemented with the start of production (SOP) of the braking system, is expected to achieve a significant product carbon footprint (PCF) reduction, compared to the usage of the average European electricity mix during the electrolysis process and without a closed-loop aluminum re-usage process.

Climate change

(5.11.9.1) Type of stakeholder

Select from:

- Customers

(5.11.9.2) Type and details of engagement

Education/Information sharing

- Share information about your products and relevant certification schemes
- Share information on environmental initiatives, progress and achievements

Innovation and collaboration

- Align your organization's goals to support customers' targets and ambitions
- Collaborate with stakeholders on innovations to reduce environmental impacts in products and services

- Engage with stakeholders to advocate for policy or regulatory change
- Other innovation and collaboration, please specify :Standardization and exchange of environmental data

(5.11.9.3) % of stakeholder type engaged

Select from:

- 1-25%

(5.11.9.4) % stakeholder-associated scope 3 emissions

Select from:

- 51-75%

(5.11.9.5) Rationale for engaging these stakeholders and scope of engagement

Understanding the importance of cooperation and standardization within the automotive data ecosystem, ZF is a founding member of the joint data platform of the automotive industry, Catena-X. This is an alliance of companies that uses a cloud to enable transparent, standardized and cross-company data exchange and to create a closely cooperating manufacturer and supplier network. ZF is represented on the Board of Management of Catena-X Automotive Network e.V. and the company's experts actively participate in its various working groups. ZF is closely working with all companies engaged within Catena-X, with various of our biggest customers, amounting for more than 70% of ZF's sales in passenger car. Further information can be found here:

https://press.zf.com/press/en/releases/release_50882.html

(5.11.9.6) Effect of engagement and measures of success

ZF expects five key impact areas through its engagement with Catena-X: 1) Catena-X standards and software artifacts offer an onboarding point for customers to the Catena-X data space. Carbon Footprint Tracking solutions enable concise, accurate calculation and reporting of CO2 values along the value chain. This will allow Catena-X customers to stay ahead in Carbon Footprint transparency and derive potential sustainability improvements to play an active role in the global effort to reach net-zero. 2) Circular economy for a sustainable value chain: The recycling of materials is an ever-increasing topic of importance within the automotive industry. The information about the condition of components can be transparently displayed among suppliers and customers to properly re-use parts and components. 3) Data Exchange between parties will be based on sovereign, secure and standardized principles without forcing a lock-in effect to certain solutions. Every partner will stay in full control of their own data. 4) Federated and Shared Services will power the business applications offered on the marketplace and enable data exchange in an interoperable open-source approach ensuring added value for each customer. 5) Onboarding Services will foster the adoption of the Catena-X ecosystem and accelerate the digital connection of automotive partners in every step of the value chain to the ecosystem.

Climate change

(5.11.9.1) Type of stakeholder

Select from:

- Investors and shareholders

(5.11.9.2) Type and details of engagement

Education/Information sharing

- Share information about your products and relevant certification schemes

Innovation and collaboration

- Collaborate with stakeholders on innovations to reduce environmental impacts in products and services

(5.11.9.3) % of stakeholder type engaged

Select from:

- 100%

(5.11.9.4) % stakeholder-associated scope 3 emissions

Select from:

- 100%

(5.11.9.5) Rationale for engaging these stakeholders and scope of engagement

*ZF engages with investors in Sustainable Finance to fund specific projects with environmental benefits. For that purpose, ZF has published a Green Finance Framework (GFF) based on the Sustainable Development Goals, the ICMA Green Bond Principles and the LMA Green Loan Principles. The company is constantly developing the framework in accordance with current market standards and the EU taxonomy. Under the GFF, ZF issues green bonds in euros and U.S. dollars. The financing proceeds from green bonds are used for the development, production and sale of products for battery electric vehicles (clean transportation) and for the development, production and sale of gearboxes for wind turbines (renewable energy). Allocated proceeds, climate effects of the financed projects and further details are published in the annual Green Finance Report. For further information see:
https://www.zf.com/mobile/en/company/investor_relations/sustainable_finance/sustainable_finance.html#sftaxonomyalignment_acc_493020_0*

(5.11.9.6) Effect of engagement and measures of success

The Green Finance Framework was established in 2021 and green bonds were issued over the last years. Green bonds offer new financing options for projects that contribute to a lower-emission and climate-friendly economy. This accelerates the transformation of the industry and also offers new opportunities for investors. An annual Green Finance Report provide investors and the public with transparent information about the allocated proceeds and the climate effects of the financed projects. The Green Finance Report 2024 can be accessed here:

https://kpmg.bryter.io/s/wEstKqupRqOpUAW27LPLHw/atlas_automation_report_service_01_en?id0ae15053-84bf-4a07-acd6-0af8c5b6933a&vara&ma

[Add row]

C6. Environmental Performance - Consolidation Approach

(6.1) Provide details on your chosen consolidation approach for the calculation of environmental performance data.

	Consolidation approach used	Provide the rationale for the choice of consolidation approach
Climate change	Select from: <input checked="" type="checkbox"/> Operational control	<i>Basis of consolidation see Annual Report, page 110, 111.</i>
Water	Select from: <input checked="" type="checkbox"/> Operational control	<i>Basis of consolidation see Annual Report, page 110, 111</i>
Plastics	Select from: <input checked="" type="checkbox"/> Operational control	<i>Basis of consolidation see Annual Report, page 110, 111</i>
Biodiversity	Select from: <input checked="" type="checkbox"/> Operational control	<i>Basis of consolidation see Annual Report, page 110, 111</i>

[Fixed row]

C7. Environmental performance - Climate Change

(7.1) Is this your first year of reporting emissions data to CDP?

Select from:

No

(7.1.1) Has your organization undergone any structural changes in the reporting year, or are any previous structural changes being accounted for in this disclosure of emissions data?

	Has there been a structural change?
	Select all that apply <input checked="" type="checkbox"/> No

[Fixed row]

(7.1.2) Has your emissions accounting methodology, boundary, and/or reporting year definition changed in the reporting year?

	Change(s) in methodology, boundary, and/or reporting year definition?
	Select all that apply

	Change(s) in methodology, boundary, and/or reporting year definition?
	<input checked="" type="checkbox"/> No

[Fixed row]

(7.2) Select the name of the standard, protocol, or methodology you have used to collect activity data and calculate emissions.

Select all that apply

- IPCC Guidelines for National Greenhouse Gas Inventories, 2006
- The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)
- The Greenhouse Gas Protocol: Scope 2 Guidance
- The Greenhouse Gas Protocol: Corporate Value Chain (Scope 3) Standard
- Other, please specify :ZF tool using VDA emission factors

(7.3) Describe your organization’s approach to reporting Scope 2 emissions.

(7.3.1) Scope 2, location-based

Select from:

- We are reporting a Scope 2, location-based figure

(7.3.2) Scope 2, market-based

Select from:

- We are reporting a Scope 2, market-based figure

(7.3.3) Comment

We have a number of operations where we are able to access electricity supplier emission factors or residual emission factors. Where no specific emission factors are available, we use the same emission factors as for the location-based approach. location-based figure: gross global Scope 2 emissions (metric tons CO2e) consider CO2 fossil, CH4 and N2O; CO2 biogenic is excluded. market-based figure: gross global Scope 2 emissions (metric tons CO2e) consider CO2 fossil, CH4 and N2O; CO2 biogenic is excluded.

[Fixed row]

(7.4) Are there any sources (e.g. facilities, specific GHGs, activities, geographies, etc.) of Scope 1, Scope 2 or Scope 3 emissions that are within your selected reporting boundary which are not included in your disclosure?

Select from:

No

(7.5) Provide your base year and base year emissions.

Scope 1

(7.5.1) Base year end

12/31/2019

(7.5.2) Base year emissions (metric tons CO2e)

406000.0

(7.5.3) Methodological details

Energy consumption volumes of all relevant energy types are reported in a standardized process. Volumes are based on supplier invoices if available, otherwise meter status or professional estimations are used. Emissions are calculated using VDA emission factors (provided by German trade association VDA - Association of German automotive industry).

Scope 2 (location-based)

(7.5.1) Base year end

12/31/2019

(7.5.2) Base year emissions (metric tons CO2e)

1437000.0

(7.5.3) Methodological details

Energy consumption volumes of all relevant energy types are reported in a standardized process. Volumes are based on supplier invoices if available, otherwise meter status or professional estimations are used. Emissions are calculated using VDA emission factors (provided by German trade association VDA - Association of German automotive industry).

Scope 2 (market-based)

(7.5.1) Base year end

12/31/2019

(7.5.2) Base year emissions (metric tons CO2e)

1371000.0

(7.5.3) Methodological details

Energy consumption volumes of all relevant energy types are reported in a standardized process. Volumes are based on supplier invoices if available, otherwise meter status or professional estimations are used. Emissions are calculated using supplier-specific emission factors which are provided by ZF's energy suppliers.

Scope 3 category 1: Purchased goods and services

(7.5.1) Base year end

12/31/2019

(7.5.2) Base year emissions (metric tons CO2e)

21688000.0

(7.5.3) Methodological details

Category 1 Purchased Goods and Services carbon footprint calculation is built on the commodity structure of ZF, using purchasing data. Weights are the main input needed for calculating emissions. Weights and emissions have been calculated based on quantitative and qualitative information for each sub-commodity, where the specific weights per commodity were calculated by multiplying the individual weights of purchased goods and services by their volumes. The emission factors convert the weights per commodity into CO2e emissions. To guarantee accuracy and representativeness, the emissions factor for each sub-commodity were individually determined based on reference technology mixes in the supply chain. The “Scope 3.1” relevant non-production materials calculation is based on spend data, applying the same calculation logic, and is based on environmental input-output databases (World Input-Output Database (WIOD) and the Open IO Database, using the GHG Protocol Scope 3 Evaluator (<https://ghgproto-col.org/scope-3-evaluator>)).

Scope 3 category 2: Capital goods

(7.5.1) Base year end

12/31/2019

(7.5.2) Base year emissions (metric tons CO2e)

1485000.0

(7.5.3) Methodological details

Category 2 relevant non-production materials calculation is based on spend data, applying the same calculation logic as for NPM materials covered in Category 1, and is based on environmental input-output databases (World Input-Output Database (WIOD) and the Open IO Database, using the GHG Protocol Scope 3 Evaluator (<https://ghgproto-col.org/scope-3-evaluator>)).

Scope 3 category 3: Fuel-and-energy-related activities (not included in Scope 1 or 2)

(7.5.1) Base year end

12/31/2019

(7.5.2) Base year emissions (metric tons CO2e)

222000.0

(7.5.3) Methodological details

Category 3 Fuel-and-energy-related activities carbon footprint calculation is based on the calculation process of Scope 1 and 2 revering to the energy consumption. The supply chain and grid losses were calculated separately by using VDA emission factors from German trade association VDA - Association of German automotive industry. No reliable primary data from suppliers available at this time. Supply chain sustainability program for development to enable suppliers is in place.

Scope 3 category 4: Upstream transportation and distribution

(7.5.1) Base year end

12/31/2019

(7.5.2) Base year emissions (metric tons CO2e)

1127000.0

(7.5.3) Methodological details

Category 4 Upstream transportation and distribution carbon footprint calculation is based on data of transport distances and weights (ton kilometers) per transportation mode, subdivided by different means of transport (land, water, air). 25% of final emissions of category 3.4 is based on data received from suppliers. Supply chain sustainability program for development to enable suppliers is in place.

Scope 3 category 5: Waste generated in operations

(7.5.1) Base year end

12/31/2019

(7.5.2) Base year emissions (metric tons CO2e)

131000.0

(7.5.3) Methodological details

Category 5 emission calculation is derived from waste amounts reported by ZF sites in a standardized process. Generic emission factors are determined and applied for the calculation.

Scope 3 category 6: Business travel

(7.5.1) Base year end

12/31/2019

(7.5.2) Base year emissions (metric tons CO2e)

113000.0

(7.5.3) Methodological details

Category 6 Business travel carbon footprint calculation is based on data on travel distances per transportation mode, subdivided by different means of transport (car, rail, air) and DEFRA emission factors.

Scope 3 category 7: Employee commuting

(7.5.1) Base year end

12/31/2019

(7.5.2) Base year emissions (metric tons CO2e)

149000.0

(7.5.3) Methodological details

Category 7 Employee commuting carbon footprint calculation is based on data on employees, subdivided by different countries and regions and different means of transport (private, public). No reliable primary data available at this time. Program for development of data quality is in place.

Scope 3 category 8: Upstream leased assets

(7.5.1) Base year end

12/31/2019

(7.5.2) Base year emissions (metric tons CO2e)

0.0

(7.5.3) Methodological details

not relevant

Scope 3 category 9: Downstream transportation and distribution

(7.5.1) Base year end

12/31/2019

(7.5.2) Base year emissions (metric tons CO2e)

415000.0

(7.5.3) Methodological details

Category 9 Downstream transportation and distribution carbon footprint is derived from category 4 Upstream transportation and distribution emissions by applying a fixed percentage which has been defined together with ZF's external consultant in 2021. No reliable primary data available at this time. Program for development of data quality is in place.

Scope 3 category 10: Processing of sold products

(7.5.1) Base year end

12/31/2019

(7.5.2) Base year emissions (metric tons CO2e)

60000.0

(7.5.3) Methodological details

Category 10 Processing of sold products carbon footprint calculation is based on Scope 1&2 emissions of OEMs and other manufacturers and ZF's market share/sales figures. No reliable primary data available at this time. Due to low share of total emissions, it was categorized as less relevant.

Scope 3 category 11: Use of sold products

(7.5.1) Base year end

12/31/2019

(7.5.2) Base year emissions (metric tons CO2e)

77235000.0

(7.5.3) Methodological details

Category 11 Use of sold products carbon footprint calculation is based on the top sales representative products of ZF. To address the CO2e emissions of the top sales products, the following was taken into account: the fraction of the vehicle weight; the fleet mix (ICE, Hybrid, or electric); the application (passenger cars, utility vehicles, or non-automotive); and the vehicle CO2e emissions per kilometre or CO2e emissions per hour for non-automotive applications. After the calculation of the top sales representative products, the emissions of the whole range of ZF products have been calculated extrapolating by the sales volume. No reliable primary data available at this time. Program for development of data quality is in place. ZF continuously develops the calculation of use phase emissions of their products: More simulations will be carried out to determine the fuel consumption of their automotive parts. This will enhance the overall result, when the extrapolation to the whole product range will have a broader basis.

Scope 3 category 12: End of life treatment of sold products

(7.5.1) Base year end

12/31/2019

(7.5.2) Base year emissions (metric tons CO2e)

71000.0

(7.5.3) Methodological details

Category 12 End of life treatment of sold products carbon footprint calculation is based on the top sales representative products of each ZF division. ZF produces mainly automotive parts made of metal or other recyclable materials. The share of recyclable content per top sales product was estimated, revealing that most parts will undergo a considerable recycling process. Electronics scrap is the exemption, whose CO2e emissions were calculated based on a final incineration process. No reliable primary data available at this time. Program for development of data quality is in place.

Scope 3 category 13: Downstream leased assets

(7.5.1) Base year end

12/31/2019

(7.5.2) Base year emissions (metric tons CO2e)

0.0

(7.5.3) Methodological details

not relevant

Scope 3 category 14: Franchises

(7.5.1) Base year end

12/31/2019

(7.5.2) Base year emissions (metric tons CO2e)

0.0

(7.5.3) Methodological details

not relevant

Scope 3 category 15: Investments

(7.5.1) Base year end

12/31/2019

(7.5.2) Base year emissions (metric tons CO2e)

22000.0

(7.5.3) Methodological details

Category 15 Investments carbon footprint calculation is based on the assumption of an average footprint according to ZF Group and the investment spent based data. No reliable primary data available at this time.

Scope 3: Other (upstream)

(7.5.1) Base year end

12/31/2019

(7.5.2) Base year emissions (metric tons CO2e)

0.0

(7.5.3) Methodological details

not relevant

Scope 3: Other (downstream)

(7.5.1) Base year end

12/31/2019

(7.5.2) Base year emissions (metric tons CO2e)

0.0

(7.5.3) Methodological details

not relevant

[Fixed row]

(7.6) What were your organization's gross global Scope 1 emissions in metric tons CO2e?

Reporting year

(7.6.1) Gross global Scope 1 emissions (metric tons CO2e)

247000

(7.6.3) Methodological details

The Greenhouse Gas Protocol (GHG) sets an international standard to categorize direct and indirect sources of emissions. Scope 1 includes direct emissions resulting from the combustion of natural gas and fossil fuels (fuel oil, gasoline, diesel, LPG, acetylene and methanol) in ZF's own production. Scope 1 emission calculation based on actual energy consumption volumes and VDA emission factors. The calculation is based on the primary energy sources used.

Past year 1

(7.6.1) Gross global Scope 1 emissions (metric tons CO2e)

(7.6.2) End date

12/31/2022

(7.6.3) Methodological details

The Greenhouse Gas Protocol (GHG) sets an international standard to categorize direct and indirect sources of emissions. Scope 1 includes direct emissions resulting from the combustion of natural gas and fossil fuels (fuel oil, gasoline, diesel, LPG, acetylene and methanol) in ZF's own production. Scope 1 emission calculation based on actual energy consumption volumes and VDA emission factors. The calculation is based on the primary energy sources used.

Past year 2**(7.6.1) Gross global Scope 1 emissions (metric tons CO2e)**

416000

(7.6.2) End date

12/31/2021

(7.6.3) Methodological details

The Greenhouse Gas Protocol (GHG) sets an international standard to categorize direct and indirect sources of emissions. Scope 1 includes direct emissions resulting from the combustion of natural gas and fossil fuels (fuel oil, gasoline, diesel, LPG, acetylene and methanol) in ZF's own production. Scope 1 emission calculation based on actual energy consumption volumes and VDA emission factors. The calculation is based on the primary energy sources used.

*[Fixed row]***(7.7) What were your organization's gross global Scope 2 emissions in metric tons CO2e?****Reporting year****(7.7.1) Gross global Scope 2, location-based emissions (metric tons CO2e)**

1184000

(7.7.2) Gross global Scope 2, market-based emissions (metric tons CO2e) (if applicable)

805000

(7.7.4) Methodological details

The Greenhouse Gas Protocol (GHG) sets an international standard to categorize direct and indirect sources of emissions. Scope 2 involves emissions from purchased energy, e.g., electricity. We have a number of operations where we are able to access electricity supplier emission factors (market-based) or residual emission factors. Where no specific emission factors are available, we use the same emission factors as for the location-based approach.criteria on auditability.

Past year 1

(7.7.1) Gross global Scope 2, location-based emissions (metric tons CO2e)

1079000

(7.7.2) Gross global Scope 2, market-based emissions (metric tons CO2e) (if applicable)

776000

(7.7.3) End date

12/30/2022

(7.7.4) Methodological details

The Greenhouse Gas Protocol (GHG) sets an international standard to categorize direct and indirect sources of emissions. Scope 2 involves emissions from purchased energy, e.g., electricity. We have a number of operations where we are able to access electricity supplier emission factors (market-based) or residual emission factors. Where no specific emission factors are available, we use the same emission factors as for the location-based approach.criteria on auditability.

Past year 2

(7.7.1) Gross global Scope 2, location-based emissions (metric tons CO2e)

1377000

(7.7.2) Gross global Scope 2, market-based emissions (metric tons CO2e) (if applicable)

941000

(7.7.3) End date

12/30/2021

(7.7.4) Methodological details

The Greenhouse Gas Protocol (GHG) sets an international standard to categorize direct and indirect sources of emissions. Scope 2 involves emissions from purchased energy, e.g., electricity. We have a number of operations where we are able to access electricity supplier emission factors (market-based) or residual emission factors. Where no specific emission factors are available, we use the same emission factors as for the location-based approach. criteria on auditability. [Fixed row]

(7.8) Account for your organization's gross global Scope 3 emissions, disclosing and explaining any exclusions.

Purchased goods and services

(7.8.1) Evaluation status

Select from:

Relevant, calculated

(7.8.2) Emissions in reporting year (metric tons CO2e)

15169000

(7.8.3) Emissions calculation methodology

Select all that apply

Average data method

Spend-based method

(7.8.4) Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

(7.8.5) Please explain

The ZF Corporate Carbon Footprint CCF Calculation Model has been reviewed in early 2021 during the ZF Climate Ambition Initiative with external consultant. Based on the calculation model and analysis of reduction levers the target setting process to all categories for internal and external stakeholders has been set up. This calculation model has been designed to calculate the potential of CO2e reduction levers. Category 1 Purchased Goods and Services carbon footprint calculation is built on the commodity structure of ZF, using purchasing data. Weights are the main input needed for calculating emissions. Weights and emissions have been calculated based on quantitative and qualitative information for each sub-commodity, where the specific weights per commodity were calculated by multiplying the individual weights of purchased goods and services by their volumes. The emission factors convert the weights per commodity into CO2e emissions. To guarantee accuracy and representativeness, the emissions factor for each sub-commodity were individually determined applying a conservative estimation approach from relevant databases. The "Scope 3.1" relevant non-production materials calculation is based on spend data, applying the same calculation logic, and is based on environmental input-output databases (World Input-Output Database (WIOD) and the Open IO Database, using the GHG Protocol Scope 3 Evaluator (<https://ghgproto-col.org/scope-3-evaluator>)). No reliable primary data from suppliers available at this time. Supply chain sustainability program for development to enable suppliers is in place. To drive forward the topic of climate neutrality in the supply chain, ZF communicated quantified expectations for essential carbon reduction levers. These include, among other things, the use of renewable energies and secondary raw materials. In addition, so-called decarbonization dialogues were initiated with important suppliers of production and non-production materials. A significant outcome of this dialogue has been the identification of measures that will be implemented through joint projects and materialize over the coming years.

Capital goods

(7.8.1) Evaluation status

Select from:

Relevant, calculated

(7.8.2) Emissions in reporting year (metric tons CO2e)

1527999

(7.8.3) Emissions calculation methodology

Select all that apply

Spend-based method

(7.8.4) Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

(7.8.5) Please explain

The ZF Corporate Carbon Footprint CCF Calculation Model has been reviewed in early 2021 during the ZF Climate Ambition Initiative with external consultant. Based on the calculation model and analysis of reduction levers the target setting process to all categories for internal and external stakeholders has been set up. This calculation model has been designed to calculate the potential of CO2e reduction levers. Category 2 Capital Goods carbon footprint calculation is based on spend data. No reliable primary data from suppliers available at this time. Supply chain sustainability program for development to enable suppliers is in place.

Fuel-and-energy-related activities (not included in Scope 1 or 2)

(7.8.1) Evaluation status

Select from:

Relevant, calculated

(7.8.2) Emissions in reporting year (metric tons CO2e)

263000

(7.8.3) Emissions calculation methodology

Select all that apply

Average data method

(7.8.4) Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

(7.8.5) Please explain

The ZF Corporate Carbon Footprint CCF Calculation Model has been reviewed in early 2021 during the ZF Climate Ambition Initiative with external consultant. Based on the calculation model and analysis of reduction levers the target setting process to all categories for internal and external stakeholders has been set up. This calculation model has been designed to calculate the potential of CO2e reduction levers. Category 3 Fuel-and-energy-related activities carbon footprint calculation is based on the calculation process of Scope 1 and 2 revering to the energy consumption. The supply chain and grid losses were calculated separately by using VDA emission factors from German trade association VDA - Association of German automotive industry. No reliable primary data from suppliers available at this time. Supply chain sustainability program for development to enable suppliers is in place.

Upstream transportation and distribution

(7.8.1) Evaluation status

Select from:

Relevant, calculated

(7.8.2) Emissions in reporting year (metric tons CO2e)

1082000

(7.8.3) Emissions calculation methodology

Select all that apply

Distance-based method

(7.8.4) Percentage of emissions calculated using data obtained from suppliers or value chain partners

25

(7.8.5) Please explain

The ZF Corporate Carbon Footprint CCF Calculation Model has been reviewed in early 2021 during the ZF Climate Ambition Initiative with external consultant. Based on the calculation model and analysis of reduction levers the target setting process to all categories for internal and external stakeholders has been set up. This calculation model has been designed to calculate the potential of CO2e reduction levers. Category 4 Upstream transportation and distribution carbon footprint calculation is based on data of transport distances and weights (ton kilometers) per transportation mode, subdivided by different means of transport (land, water, air). Approx. 25% of final emissions of category 3.4 is based on data received from suppliers. Supply chain sustainability program for development to enable suppliers is in place.

Waste generated in operations

(7.8.1) Evaluation status

Select from:

Relevant, calculated

(7.8.2) Emissions in reporting year (metric tons CO2e)

132000

(7.8.3) Emissions calculation methodology

Select all that apply

Hybrid method

Waste-type-specific method

Site-specific method

(7.8.4) Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

(7.8.5) Please explain

The ZF Corporate Carbon Footprint CCF Calculation Model has been reviewed in early 2021 during the ZF Climate Ambition Initiative with external consultant. Based on the calculation model and analysis of reduction levers the target setting process to all categories for internal and external stakeholders has been set up. This calculation model has been designed to calculate the potential of CO2e reduction levers. Cat 3.5 emission calculation is derived from waste amounts reported by ZF sites in a standardized process. Generic emission factors are determined and applied for the calculation.

Business travel

(7.8.1) Evaluation status

Select from:

Relevant, calculated

(7.8.2) Emissions in reporting year (metric tons CO2e)

40999

(7.8.3) Emissions calculation methodology

Select all that apply

Distance-based method

(7.8.4) Percentage of emissions calculated using data obtained from suppliers or value chain partners

100

(7.8.5) Please explain

The ZF Corporate Carbon Footprint CCF Calculation Model has been reviewed in early 2021 during the ZF Climate Ambition Initiative with external consultant. Based on the calculation model and analysis of reduction levers the target setting process to all categories for internal and external stakeholders has been set up. This calculation model has been designed to calculate the potential of CO2e reduction levers. Category 6 Business travel carbon footprint calculation is based on data on travel distances per transportation mode, subdivided by different means of transport (car, rail, air).

Employee commuting

(7.8.1) Evaluation status

Select from:

Relevant, calculated

(7.8.2) Emissions in reporting year (metric tons CO2e)

157999

(7.8.3) Emissions calculation methodology

Select all that apply

Average data method

Distance-based method

(7.8.4) Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

(7.8.5) Please explain

The ZF Corporate Carbon Footprint CCF Calculation Model has been reviewed in early 2021 during the ZF Climate Ambition Initiative with external consultant. Based on the calculation model and analysis of reduction levers the target setting process to all categories for internal and external stakeholders has been set up. This calculation model has been designed to calculate the potential of CO2e reduction levers. Category 7 Employee commuting carbon footprint calculation is based on data on employees, subdivided by different countries and regions and different means of transport (private, public).

Upstream leased assets

(7.8.1) Evaluation status

Select from:

Not relevant, calculated

(7.8.2) Emissions in reporting year (metric tons CO2e)

0

(7.8.3) Emissions calculation methodology

Select all that apply

Other, please specify

(7.8.4) Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

(7.8.5) Please explain

Emissions from leased assets are reported together with owned properties in the according sections of scope 1, 2 and 3. Therefore, this category has been defined as not relevant. For the reporting year 2022, ZF improved the established process for the definition of reporting boundaries for environmental KPIs. With this new approach also small locations/sites/units are considered for emission reporting with limited efforts. Additional rules have been defined to align reporting boundaries with financial KPIs. For small locations/sites/units, generic emission factors are applied related to the number of employees assigned.

Downstream transportation and distribution

(7.8.1) Evaluation status

Select from:

Relevant, calculated

(7.8.2) Emissions in reporting year (metric tons CO2e)

398000

(7.8.3) Emissions calculation methodology

Select all that apply

Average data method

(7.8.4) Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

(7.8.5) Please explain

The ZF Corporate Carbon Footprint CCF Calculation Model has been reviewed in early 2021 during the ZF Climate Ambition Initiative with external consultant. Based on the calculation model and analysis of reduction levers the target setting process to all categories for internal and external stakeholders has been set up. This calculation model has been designed to calculate the potential of CO2e reduction levers. Category 9 Downstream transportation and distribution carbon footprint is derived from category 4 Upstream transportation and distribution emissions by applying a fixed percentage which has been defined together with ZF's external consultant in 2021. No reliable primary data available at this time. Program for development of data quality is in place.

Processing of sold products

(7.8.1) Evaluation status

Select from:

Relevant, calculated

(7.8.2) Emissions in reporting year (metric tons CO2e)

60000

(7.8.3) Emissions calculation methodology

Select all that apply

Average data method

(7.8.4) Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

(7.8.5) Please explain

The ZF Corporate Carbon Footprint CCF Calculation Model has been reviewed in early 2021 during the ZF Climate Ambition Initiative with external consultant. Based on the calculation model and analysis of reduction levers the target setting process to all categories for internal and external stakeholders has been set up. This calculation model has been designed to calculate the potential of CO2e reduction levers. Category 10 Processing of sold products carbon footprint calculation is based on Scope 1&2 emissions of OEMs and other manufacturers and ZF's market share/sales figures. No reliable primary data available at this time. Due to low share of total emissions, it was categorized as less relevant.

Use of sold products

(7.8.1) Evaluation status

Select from:

Relevant, calculated

(7.8.2) Emissions in reporting year (metric tons CO2e)

63487000

(7.8.3) Emissions calculation methodology

Select all that apply

- Hybrid method
- Average data method
- Average product method
- Fuel-based method

(7.8.4) Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

(7.8.5) Please explain

Corporate Carbon Footprint CCF Calculation Model has been reviewed in early 2021 during the ZF Climate Ambition Initiative with external consultant. Based on the calculation model and analysis of reduction levers the target setting process to all categories for internal and external stakeholders has been set up. This calculation model has been designed to calculate the potential of CO2e reduction levers. Category 11 Use of sold products carbon footprint calculation is based on the top sales representative products of ZF. To address the CO2e emissions of the top sales products, the following was taken into account: the fraction of the vehicle weight; the fleet mix (ICE, Hybrid, or electric); the application (passenger cars, utility vehicles, or non-automotive); and the vehicle CO2e emissions per kilometre or CO2e emissions per hour for non-automotive applications. After the calculation of the top sales representative products, the emissions of the whole range of ZF products have been calculated extrapolating by the sales volume. No reliable primary data available at this time. Program for development of data quality is in place. ZF continuously develops the calculation of use phase emissions of their products: More simulations will be carried out to determine the fuel consumption of their automotive parts. This will enhance the overall result, when the extrapolation to the whole product range will have a broader basis. Reported figure in metric tons CO2e (63487000) is the sum of direct (7633000) and indirect (55854000) use phase emissions (see Annual Report 2022/3, page 41).

End of life treatment of sold products

(7.8.1) Evaluation status

Select from:

- Relevant, calculated

(7.8.2) Emissions in reporting year (metric tons CO2e)

135000

(7.8.3) Emissions calculation methodology

Select all that apply

- Hybrid method
- Average data method
- Spend-based method
- Average product method
- Waste-type-specific method

(7.8.4) Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

(7.8.5) Please explain

The ZF Corporate Carbon Footprint CCF Calculation Model has been reviewed in early 2021 during the ZF Climate Ambition Initiative with external consultant. Based on the calculation model and analysis of reduction levers the target setting process to all categories for internal and external stakeholders has been set up. This calculation model has been designed to calculate the potential of CO2e reduction levers. Category 12 End of life treatment of sold products carbon footprint calculation is based on the top sales representative products of each ZF division. ZF produces mainly automotive parts made of metal or other recyclable materials. The share of recyclable content per top sales product was estimated, revealing that most parts will undergo a considerable recycling process. Electronics scrap is the exemption, whose CO2e emissions were calculated based on a final incineration process. No reliable primary data available at this time. Program for development of data quality is in place.

Downstream leased assets

(7.8.1) Evaluation status

Select from:

- Not relevant, calculated

(7.8.2) Emissions in reporting year (metric tons CO2e)

0

(7.8.3) Emissions calculation methodology

Select all that apply

Other, please specify

(7.8.4) Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

(7.8.5) Please explain

Emissions from leased assets are reported together with owned properties in the according sections of scope 1, 2 and 3. Therefore, this category has been defined as not relevant. For the reporting year 2022, ZF improved the established process for the definition of reporting boundaries for environmental KPIs. With this new approach also small locations/sites/units are considered for emission reporting with limited efforts. Additional rules have been defined to align reporting boundaries with financial KPIs. For small locations/sites/units, generic emission factors are applied related to the number of employees assigned.

Franchises

(7.8.1) Evaluation status

Select from:

Not relevant, explanation provided

(7.8.5) Please explain

ZF Group has no significant franchises and therefore this category can be neglected.

Investments

(7.8.1) Evaluation status

Select from:

Relevant, calculated

(7.8.2) Emissions in reporting year (metric tons CO2e)

3004

(7.8.3) Emissions calculation methodology

Select all that apply

Investment-specific method

(7.8.4) Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

(7.8.5) Please explain

The ZF Corporate Carbon Footprint CCF Calculation Model has been reviewed in early 2021 during the ZF Climate Ambition Initiative with external consultant. Based on the calculation model and analysis of reduction levers the target setting process to all categories for internal and external stakeholders has been set up. This calculation model has been designed to calculate the potential of CO2e reduction levers. Category 15 Investments carbon footprint calculation is based on the assumption of an average footprint according to ZF Group and the investment spent based data. No reliable primary data available at this time.

Other (upstream)

(7.8.1) Evaluation status

Select from:

Not evaluated

(7.8.5) Please explain

No other emissions identified.

Other (downstream)

(7.8.1) Evaluation status

Select from:

Not evaluated

(7.8.5) Please explain

No other emissions identified.

[Fixed row]

(7.8.1) Disclose or restate your Scope 3 emissions data for previous years.

Past year 1

(7.8.1.1) End date

12/31/2022

(7.8.1.2) Scope 3: Purchased goods and services (metric tons CO2e)

16557000

(7.8.1.3) Scope 3: Capital goods (metric tons CO2e)

934000

(7.8.1.4) Scope 3: Fuel and energy-related activities (not included in Scopes 1 or 2) (metric tons CO2e)

273000

(7.8.1.5) Scope 3: Upstream transportation and distribution (metric tons CO2e)

810000

(7.8.1.6) Scope 3: Waste generated in operations (metric tons CO2e)

135000

(7.8.1.7) Scope 3: Business travel (metric tons CO2e)

39000

(7.8.1.8) Scope 3: Employee commuting (metric tons CO2e)

152000

(7.8.1.9) Scope 3: Upstream leased assets (metric tons CO2e)

0

(7.8.1.10) Scope 3: Downstream transportation and distribution (metric tons CO2e)

298000

(7.8.1.11) Scope 3: Processing of sold products (metric tons CO2e)

60000

(7.8.1.12) Scope 3: Use of sold products (metric tons CO2e)

63372000

(7.8.1.13) Scope 3: End of life treatment of sold products (metric tons CO2e)

110000

(7.8.1.14) Scope 3: Downstream leased assets (metric tons CO2e)

0

(7.8.1.15) Scope 3: Franchises (metric tons CO2e)

0

(7.8.1.16) Scope 3: Investments (metric tons CO2e)

4000

(7.8.1.17) Scope 3: Other (upstream) (metric tons CO2e)

0

(7.8.1.18) Scope 3: Other (downstream) (metric tons CO2e)

0

(7.8.1.19) Comment

Scope 3 figures for past year 1 (2022). Scope 3: Use of sold products (total 63372000 metric tons CO2e) are divided into direct use of sold products (4563000 metric tons CO2e) and indirect use of sold products (58809000 metric tons CO2e). Categories 3.8, 3.13, 3.14 and other excluded/not relevant.

Past year 2

(7.8.1.1) End date

12/31/2021

(7.8.1.2) Scope 3: Purchased goods and services (metric tons CO2e)

18994000

(7.8.1.3) Scope 3: Capital goods (metric tons CO2e)

1188000

(7.8.1.4) Scope 3: Fuel and energy-related activities (not included in Scopes 1 or 2) (metric tons CO2e)

236000

(7.8.1.5) Scope 3: Upstream transportation and distribution (metric tons CO2e)

1357000

(7.8.1.6) Scope 3: Waste generated in operations (metric tons CO2e)

136000

(7.8.1.7) Scope 3: Business travel (metric tons CO2e)

21000

(7.8.1.8) Scope 3: Employee commuting (metric tons CO2e)

145000

(7.8.1.9) Scope 3: Upstream leased assets (metric tons CO2e)

0

(7.8.1.10) Scope 3: Downstream transportation and distribution (metric tons CO2e)

499000

(7.8.1.11) Scope 3: Processing of sold products (metric tons CO2e)

60000

(7.8.1.12) Scope 3: Use of sold products (metric tons CO2e)

68935000

(7.8.1.13) Scope 3: End of life treatment of sold products (metric tons CO2e)

94000

(7.8.1.14) Scope 3: Downstream leased assets (metric tons CO2e)

0

(7.8.1.15) Scope 3: Franchises (metric tons CO2e)

0

(7.8.1.16) Scope 3: Investments (metric tons CO2e)

7000

(7.8.1.17) Scope 3: Other (upstream) (metric tons CO2e)

0

(7.8.1.18) Scope 3: Other (downstream) (metric tons CO2e)

0

(7.8.1.19) Comment

*Scope 3 figures for past year 2 (2021). Scope 3: Use of sold products (total 68935000 metric tons CO2e) are divided into direct use of sold products (3906000 metric tons CO2e) and indirect use of sold products (65029000 metric tons CO2e). Categories 3.8, 3.13, 3.14 and other excluded/not relevant.
[Fixed row]*

(7.9) Indicate the verification/assurance status that applies to your reported emissions.

	Verification/assurance status
Scope 1	<i>Select from:</i> <input checked="" type="checkbox"/> Third-party verification or assurance process in place
Scope 2 (location-based or market-based)	<i>Select from:</i> <input checked="" type="checkbox"/> Third-party verification or assurance process in place
Scope 3	<i>Select from:</i> <input checked="" type="checkbox"/> No third-party verification or assurance

[Fixed row]

(7.9.1) Provide further details of the verification/assurance undertaken for your Scope 1 emissions, and attach the relevant statements.

Row 1

(7.9.1.1) Verification or assurance cycle in place

Select from:

Annual process

(7.9.1.2) Status in the current reporting year

Select from:

Complete

(7.9.1.3) Type of verification or assurance

Select from:

Limited assurance

(7.9.1.4) Attach the statement

GB 2023 ZF Annual Report_page40_incentive_Scope 1and2.pdf

(7.9.1.5) Page/section reference

Statement on management compensation (long-term incentive) see Annual Report 2023 page 40. Verification document is confidential, not suitable for disclosure. Verification conducted acc. International Standard on Assurance Engagements (ISAE) 3000 (Revised) Calculation basis: CO2e Emissions Scope 1 and 2 Sustainability-related key figures as of December 31, 2023: Total CO2e Emissions Scope 1 and 2: 1,052 million tons (Scope 1: 0,247 million tons CO2e Scope 2: 0,805 million tons CO2e)

(7.9.1.6) Relevant standard

Select from:

ISAE3000

(7.9.1.7) Proportion of reported emissions verified (%)

100

[Add row]

(7.9.2) Provide further details of the verification/assurance undertaken for your Scope 2 emissions and attach the relevant statements.

Row 1

(7.9.2.1) Scope 2 approach

Select from:

Scope 2 market-based

(7.9.2.2) Verification or assurance cycle in place

Select from:

- Annual process

(7.9.2.3) Status in the current reporting year

Select from:

- Complete

(7.9.2.4) Type of verification or assurance

Select from:

- Limited assurance

(7.9.2.5) Attach the statement

GB 2023 ZF Annual Report_page40_incentive_Scope 1and2.pdf

(7.9.2.6) Page/ section reference

Statement on management compensation (long-term incentive) see Annual Report 2023 page 40. Verification document is confidential, not suitable for disclosure. Verification conducted acc. International Standard on Assurance Engagements (ISAE) 3000 (Revised) Calculation basis: CO2e Emissions Scope 1 and 2 Sustainability-related key figures as of December 31, 2023: Total CO2e Emissions Scope 1 and 2: 1,052 million tons (Scope 1: 0,247 million tons CO2e Scope 2: 0,805 million tons CO2e)

(7.9.2.7) Relevant standard

Select from:

- ISAE3000

(7.9.2.8) Proportion of reported emissions verified (%)

100

[Add row]

(7.10) How do your gross global emissions (Scope 1 and 2 combined) for the reporting year compare to those of the previous reporting year?

Select from:

Decreased

(7.10.1) Identify the reasons for any change in your gross global emissions (Scope 1 and 2 combined), and for each of them specify how your emissions compare to the previous year.

Change in renewable energy consumption

(7.10.1.1) Change in emissions (metric tons CO2e)

40000

(7.10.1.2) Direction of change in emissions

Select from:

Decreased

(7.10.1.3) Emissions value (percentage)

3.8

(7.10.1.4) Please explain calculation

Renewables accounted 28% of the total purchased electricity and self-generated electricity (2022: 23%) in 2023 – under guaranteed certified green power contracts. This improvement is a result of the initiatives and contract amendments within the ZF Green Power Roadmap. By 2025, the purchased electricity shall be procured from purely renewable sources. The Green Power Roadmap was brought forward from 2030 to 2025 to generate earlier an effect.

Other emissions reduction activities

(7.10.1.1) Change in emissions (metric tons CO2e)

67000

(7.10.1.2) Direction of change in emissions

Select from:

Decreased

(7.10.1.3) Emissions value (percentage)

6.4

(7.10.1.4) Please explain calculation

Energy efficiency Program: Overall, around 1000 projects (2022: 800) were implemented or initiated, which led to more than 166 GWh in energy savings (2022: 121 GWh). This corresponds to the electricity consumption of 40,500 average households and the avoidance of 66,700 tons of CO2 emissions.

Divestment

(7.10.1.1) Change in emissions (metric tons CO2e)

0

(7.10.1.2) Direction of change in emissions

Select from:

No change

(7.10.1.3) Emissions value (percentage)

0

(7.10.1.4) Please explain calculation

No relevant divestment in 2023

Acquisitions

(7.10.1.1) Change in emissions (metric tons CO2e)

0

(7.10.1.2) Direction of change in emissions

Select from:

No change

(7.10.1.3) Emissions value (percentage)

0

(7.10.1.4) Please explain calculation

No relevant acquisitions in 2023

Mergers

(7.10.1.1) Change in emissions (metric tons CO2e)

0

(7.10.1.2) Direction of change in emissions

Select from:

No change

(7.10.1.3) Emissions value (percentage)

0

(7.10.1.4) Please explain calculation

No relevant mergers in 2023

Change in output

(7.10.1.1) Change in emissions (metric tons CO2e)

0

(7.10.1.2) Direction of change in emissions

Select from:

No change

(7.10.1.3) Emissions value (percentage)

0

(7.10.1.4) Please explain calculation

Change in output (increase of sales) did not contribute to an increase of energy consumption or increase of emissions on a corporate level in 2023.

Change in methodology

(7.10.1.1) Change in emissions (metric tons CO2e)

0

(7.10.1.2) Direction of change in emissions

Select from:

No change

(7.10.1.3) Emissions value (percentage)

0

(7.10.1.4) Please explain calculation

No relevant change in methodology in 2023.

Change in boundary

(7.10.1.1) Change in emissions (metric tons CO2e)

0

(7.10.1.2) Direction of change in emissions

Select from:

No change

(7.10.1.3) Emissions value (percentage)

0

(7.10.1.4) Please explain calculation

No relevant change in boundary in 2023.

Change in physical operating conditions

(7.10.1.1) Change in emissions (metric tons CO2e)

0

(7.10.1.2) Direction of change in emissions

Select from:

No change

(7.10.1.3) Emissions value (percentage)

0

(7.10.1.4) Please explain calculation

several locations with extraordinary weather conditions (cold/mild winter, hot/cool summer); some effects around the world eliminated each other, others cannot be defined clearly yet.

Unidentified

(7.10.1.1) Change in emissions (metric tons CO₂e)

44000

(7.10.1.2) Direction of change in emissions

Select from:

Increased

(7.10.1.3) Emissions value (percentage)

4.2

(7.10.1.4) Please explain calculation

Other effects around the world may have eliminated each other and cannot be defined.

Other

(7.10.1.1) Change in emissions (metric tons CO2e)

52000

(7.10.1.2) Direction of change in emissions

Select from:

Decreased

(7.10.1.3) Emissions value (percentage)

5

(7.10.1.4) Please explain calculation

In 2023 the rejection of our gas and steam power plant at Saarbrücken site, contributet to a decrease of scope 1 emissons and to an increase of scope 2 emissions. The electricity demand is now covered by externally purchased electricity, which will be 100% from renewable sources by 2025. Overall there is a reduction of CO2e emissions, due to the sale of the gas and steam turbine plant, of 52.000 tons.

[Fixed row]

(7.10.2) Are your emissions performance calculations in 7.10 and 7.10.1 based on a location-based Scope 2 emissions figure or a market-based Scope 2 emissions figure?

Select from:

Market-based

(7.12) Are carbon dioxide emissions from biogenic carbon relevant to your organization?

Select from:

Yes

(7.12.1) Provide the emissions from biogenic carbon relevant to your organization in metric tons CO2.

(7.12.1.1) CO2 emissions from biogenic carbon (metric tons CO2)

179198

(7.12.1.2) Comment

Figure represents Scope 1& 2 (according to location-based approach) In the emission calculation process, the biologically sequestered carbon is calculated separately (using VDA emission factors from German trade association VDA - Association of German automotive industry). Scope 3 category 3: fuel-and energy-related activities are not included here.

[Fixed row]

(7.15) Does your organization break down its Scope 1 emissions by greenhouse gas type?

Select from:

Yes

(7.15.1) Break down your total gross global Scope 1 emissions by greenhouse gas type and provide the source of each used global warming potential (GWP).

Row 1

(7.15.1.1) Greenhouse gas

Select from:

CO2

(7.15.1.2) Scope 1 emissions (metric tons of CO2e)

246.075

(7.15.1.3) GWP Reference

Select from:

IPCC Fifth Assessment Report (AR5 – 100 year)

Row 2

(7.15.1.1) Greenhouse gas

Select from:

CH4

(7.15.1.2) Scope 1 emissions (metric tons of CO2e)

284

(7.15.1.3) GWP Reference

Select from:

IPCC Fifth Assessment Report (AR5 – 100 year)

Row 3

(7.15.1.1) Greenhouse gas

Select from:

N2O

(7.15.1.2) Scope 1 emissions (metric tons of CO2e)

1035

(7.15.1.3) GWP Reference

Select from:

IPCC Fifth Assessment Report (AR5 – 100 year)

[Add row]

(7.16) Break down your total gross global Scope 1 and 2 emissions by country/area.

Argentina

(7.16.1) Scope 1 emissions (metric tons CO2e)

898

(7.16.2) Scope 2, location-based (metric tons CO2e)

1332

(7.16.3) Scope 2, market-based (metric tons CO2e)

1408

Australia

(7.16.1) Scope 1 emissions (metric tons CO2e)

38

(7.16.2) Scope 2, location-based (metric tons CO2e)

223

(7.16.3) Scope 2, market-based (metric tons CO2e)

223

Austria

(7.16.1) Scope 1 emissions (metric tons CO2e)

927

(7.16.2) Scope 2, location-based (metric tons CO2e)

6600

(7.16.3) Scope 2, market-based (metric tons CO2e)

1191

Belgium

(7.16.1) Scope 1 emissions (metric tons CO2e)

6045

(7.16.2) Scope 2, location-based (metric tons CO2e)

4461

(7.16.3) Scope 2, market-based (metric tons CO2e)

8

Brazil

(7.16.1) Scope 1 emissions (metric tons CO2e)

7119

(7.16.2) Scope 2, location-based (metric tons CO2e)

35483

(7.16.3) Scope 2, market-based (metric tons CO2e)

7317

Canada

(7.16.1) Scope 1 emissions (metric tons CO2e)

5808

(7.16.2) Scope 2, location-based (metric tons CO2e)

3079

(7.16.3) Scope 2, market-based (metric tons CO2e)

612

China

(7.16.1) Scope 1 emissions (metric tons CO2e)

12361

(7.16.2) Scope 2, location-based (metric tons CO2e)

230641

(7.16.3) Scope 2, market-based (metric tons CO2e)

182217

Czechia

(7.16.1) Scope 1 emissions (metric tons CO2e)

1509

(7.16.2) Scope 2, location-based (metric tons CO2e)

25106

(7.16.3) Scope 2, market-based (metric tons CO2e)

1834

Denmark

(7.16.1) Scope 1 emissions (metric tons CO2e)

37

(7.16.2) Scope 2, location-based (metric tons CO2e)

153

(7.16.3) Scope 2, market-based (metric tons CO2e)

153

France

(7.16.1) Scope 1 emissions (metric tons CO2e)

1213

(7.16.2) Scope 2, location-based (metric tons CO2e)

1451

(7.16.3) Scope 2, market-based (metric tons CO2e)

11

Germany

(7.16.1) Scope 1 emissions (metric tons CO2e)

128658

(7.16.2) Scope 2, location-based (metric tons CO2e)

396183

(7.16.3) Scope 2, market-based (metric tons CO2e)

281261

Hungary

(7.16.1) Scope 1 emissions (metric tons CO2e)

4802

(7.16.2) Scope 2, location-based (metric tons CO2e)

7108

(7.16.3) Scope 2, market-based (metric tons CO2e)

0

India

(7.16.1) Scope 1 emissions (metric tons CO2e)

3420

(7.16.2) Scope 2, location-based (metric tons CO2e)

94257

(7.16.3) Scope 2, market-based (metric tons CO2e)

82011

Italy

(7.16.1) Scope 1 emissions (metric tons CO2e)

4032

(7.16.2) Scope 2, location-based (metric tons CO2e)

7743

(7.16.3) Scope 2, market-based (metric tons CO2e)

1

Japan

(7.16.1) Scope 1 emissions (metric tons CO2e)

6

(7.16.2) Scope 2, location-based (metric tons CO2e)

1334

(7.16.3) Scope 2, market-based (metric tons CO2e)

987

Malaysia

(7.16.1) Scope 1 emissions (metric tons CO2e)

0

(7.16.2) Scope 2, location-based (metric tons CO2e)

1722

(7.16.3) Scope 2, market-based (metric tons CO2e)

1134

Mexico

(7.16.1) Scope 1 emissions (metric tons CO2e)

8827

(7.16.2) Scope 2, location-based (metric tons CO2e)

98314

(7.16.3) Scope 2, market-based (metric tons CO2e)

80358

Netherlands

(7.16.1) Scope 1 emissions (metric tons CO2e)

165

(7.16.2) Scope 2, location-based (metric tons CO2e)

168

(7.16.3) Scope 2, market-based (metric tons CO2e)

168

Poland

(7.16.1) Scope 1 emissions (metric tons CO2e)

7176

(7.16.2) Scope 2, location-based (metric tons CO2e)

52210

(7.16.3) Scope 2, market-based (metric tons CO2e)

7948

Portugal

(7.16.1) Scope 1 emissions (metric tons CO2e)

1154

(7.16.2) Scope 2, location-based (metric tons CO2e)

2512

(7.16.3) Scope 2, market-based (metric tons CO2e)

0

Republic of Korea

(7.16.1) Scope 1 emissions (metric tons CO2e)

1541

(7.16.2) Scope 2, location-based (metric tons CO2e)

10616

(7.16.3) Scope 2, market-based (metric tons CO2e)

9937

Romania

(7.16.1) Scope 1 emissions (metric tons CO2e)

2588

(7.16.2) Scope 2, location-based (metric tons CO2e)

9691

(7.16.3) Scope 2, market-based (metric tons CO2e)

419

Serbia

(7.16.1) Scope 1 emissions (metric tons CO2e)

683

(7.16.2) Scope 2, location-based (metric tons CO2e)

6629

(7.16.3) Scope 2, market-based (metric tons CO2e)

2

Singapore

(7.16.1) Scope 1 emissions (metric tons CO2e)

0

(7.16.2) Scope 2, location-based (metric tons CO2e)

88

(7.16.3) Scope 2, market-based (metric tons CO2e)

88

Slovakia

(7.16.1) Scope 1 emissions (metric tons CO2e)

8067

(7.16.2) Scope 2, location-based (metric tons CO2e)

22671

(7.16.3) Scope 2, market-based (metric tons CO2e)

268

South Africa

(7.16.1) Scope 1 emissions (metric tons CO2e)

205

(7.16.2) Scope 2, location-based (metric tons CO2e)

2605

(7.16.3) Scope 2, market-based (metric tons CO2e)

2407

Spain

(7.16.1) Scope 1 emissions (metric tons CO2e)

6250

(7.16.2) Scope 2, location-based (metric tons CO2e)

13977

(7.16.3) Scope 2, market-based (metric tons CO2e)

3

Switzerland

(7.16.1) Scope 1 emissions (metric tons CO2e)

67

(7.16.2) Scope 2, location-based (metric tons CO2e)

17

(7.16.3) Scope 2, market-based (metric tons CO2e)

17

Taiwan, China

(7.16.1) Scope 1 emissions (metric tons CO2e)

134

(7.16.2) Scope 2, location-based (metric tons CO2e)

351

(7.16.3) Scope 2, market-based (metric tons CO2e)

351

Thailand

(7.16.1) Scope 1 emissions (metric tons CO2e)

29

(7.16.2) Scope 2, location-based (metric tons CO2e)

1670

(7.16.3) Scope 2, market-based (metric tons CO2e)

1292

Turkey

(7.16.1) Scope 1 emissions (metric tons CO2e)

2962

(7.16.2) Scope 2, location-based (metric tons CO2e)

11866

(7.16.3) Scope 2, market-based (metric tons CO2e)

11747

United Arab Emirates

(7.16.1) Scope 1 emissions (metric tons CO2e)

118

(7.16.2) Scope 2, location-based (metric tons CO2e)

85

(7.16.3) Scope 2, market-based (metric tons CO2e)

85

United Kingdom of Great Britain and Northern Ireland

(7.16.1) Scope 1 emissions (metric tons CO2e)

2304

(7.16.2) Scope 2, location-based (metric tons CO2e)

8690

(7.16.3) Scope 2, market-based (metric tons CO2e)

0

United States of America

(7.16.1) Scope 1 emissions (metric tons CO2e)

28234

(7.16.2) Scope 2, location-based (metric tons CO2e)

123656

(7.16.3) Scope 2, market-based (metric tons CO2e)

128261

Viet Nam

(7.16.1) Scope 1 emissions (metric tons CO2e)

18

(7.16.2) Scope 2, location-based (metric tons CO2e)

(7.16.3) Scope 2, market-based (metric tons CO2e)

181

*[Fixed row]***(7.17) Indicate which gross global Scope 1 emissions breakdowns you are able to provide.***Select all that apply* By business division**(7.17.1) Break down your total gross global Scope 1 emissions by business division.****Row 1****(7.17.1.1) Business division***Active Safety Systems***(7.17.1.2) Scope 1 emissions (metric ton CO2e)**

15623

Row 2**(7.17.1.1) Business division***Car Chassis Technology***(7.17.1.2) Scope 1 emissions (metric ton CO2e)**

21995

Row 3

(7.17.1.1) Business division

Electrified Powertrain Technology

(7.17.1.2) Scope 1 emissions (metric ton CO2e)

72184

Row 4

(7.17.1.1) Business division

Electronics and ADAS

(7.17.1.2) Scope 1 emissions (metric ton CO2e)

4460

Row 5

(7.17.1.1) Business division

Passive Safety Systems

(7.17.1.2) Scope 1 emissions (metric ton CO2e)

18538

Row 6

(7.17.1.1) Business division

(7.17.1.2) Scope 1 emissions (metric ton CO2e)

65618

Row 7

(7.17.1.1) Business division

Industrial Technology

(7.17.1.2) Scope 1 emissions (metric ton CO2e)

38336

Row 8

(7.17.1.1) Business division

Aftermarket

(7.17.1.2) Scope 1 emissions (metric ton CO2e)

9895

Row 9

(7.17.1.1) Business division

Central Administration/Corporate Functions & Others

(7.17.1.2) Scope 1 emissions (metric ton CO2e)

747

[Add row]

(7.20) Indicate which gross global Scope 2 emissions breakdowns you are able to provide.

Select all that apply

By business division

(7.20.1) Break down your total gross global Scope 2 emissions by business division.

Row 1

(7.20.1.1) Business division

Active Safety Systems

(7.20.1.2) Scope 2, location-based (metric tons CO2e)

198590

(7.20.1.3) Scope 2, market-based (metric tons CO2e)

115789

Row 2

(7.20.1.1) Business division

Car Chassis Technology

(7.20.1.2) Scope 2, location-based (metric tons CO2e)

121465

(7.20.1.3) Scope 2, market-based (metric tons CO2e)

91373

Row 3

(7.20.1.1) Business division

Electrified Powertrain Technology

(7.20.1.2) Scope 2, location-based (metric tons CO2e)

352464

(7.20.1.3) Scope 2, market-based (metric tons CO2e)

254201

Row 4

(7.20.1.1) Business division

Electronics and ADAS

(7.20.1.2) Scope 2, location-based (metric tons CO2e)

43139

(7.20.1.3) Scope 2, market-based (metric tons CO2e)

28195

Row 5

(7.20.1.1) Business division

Passive Safety Systems

(7.20.1.2) Scope 2, location-based (metric tons CO2e)

121454

(7.20.1.3) Scope 2, market-based (metric tons CO2e)

84197

Row 6

(7.20.1.1) Business division

Commercial Vehicle Solutions

(7.20.1.2) Scope 2, location-based (metric tons CO2e)

172812

(7.20.1.3) Scope 2, market-based (metric tons CO2e)

104578

Row 7

(7.20.1.1) Business division

Industrial Technology

(7.20.1.2) Scope 2, location-based (metric tons CO2e)

132149

(7.20.1.3) Scope 2, market-based (metric tons CO2e)

107904

Row 8

(7.20.1.1) Business division

Aftermarket

(7.20.1.2) Scope 2, location-based (metric tons CO2e)

25763

(7.20.1.3) Scope 2, market-based (metric tons CO2e)

3660

Row 9

(7.20.1.1) Business division

Central Administration/Corporate Functions & Others

(7.20.1.2) Scope 2, location-based (metric tons CO2e)

15287

(7.20.1.3) Scope 2, market-based (metric tons CO2e)

14004

[Add row]

(7.22) Break down your gross Scope 1 and Scope 2 emissions between your consolidated accounting group and other entities included in your response.

Consolidated accounting group

(7.22.1) Scope 1 emissions (metric tons CO2e)

247000

(7.22.2) Scope 2, location-based emissions (metric tons CO2e)

1184000

(7.22.3) Scope 2, market-based emissions (metric tons CO2e)

805000

(7.22.4) Please explain

The “Consolidated accounting group” refers to the group of entities for which information is included within ZFs annual financial statements, comprising the parent organization and the consolidated subsidiaries.

All other entities

(7.22.1) Scope 1 emissions (metric tons CO2e)

0

(7.22.2) Scope 2, location-based emissions (metric tons CO2e)

0

(7.22.3) Scope 2, market-based emissions (metric tons CO2e)

(7.22.4) Please explain

the response does not include any other entity
[Fixed row]

(7.23) Is your organization able to break down your emissions data for any of the subsidiaries included in your CDP response?

Select from:

No

(7.29) What percentage of your total operational spend in the reporting year was on energy?

Select from:

More than 5% but less than or equal to 10%

(7.30) Select which energy-related activities your organization has undertaken.

	Indicate whether your organization undertook this energy-related activity in the reporting year
Consumption of fuel (excluding feedstocks)	Select from: <input checked="" type="checkbox"/> Yes
Consumption of purchased or acquired electricity	Select from: <input checked="" type="checkbox"/> Yes
Consumption of purchased or acquired heat	Select from: <input checked="" type="checkbox"/> Yes

	Indicate whether your organization undertook this energy-related activity in the reporting year
Consumption of purchased or acquired steam	Select from: <input checked="" type="checkbox"/> No
Consumption of purchased or acquired cooling	Select from: <input checked="" type="checkbox"/> No
Generation of electricity, heat, steam, or cooling	Select from: <input checked="" type="checkbox"/> Yes

[Fixed row]

(7.30.1) Report your organization's energy consumption totals (excluding feedstocks) in MWh.

Consumption of fuel (excluding feedstock)

(7.30.1.1) Heating value

Select from:

LHV (lower heating value)

(7.30.1.2) MWh from renewable sources

3164

(7.30.1.3) MWh from non-renewable sources

1169369

(7.30.1.4) Total (renewable and non-renewable) MWh

1172533

Consumption of purchased or acquired electricity

(7.30.1.1) Heating value

Select from:

LHV (lower heating value)

(7.30.1.2) MWh from renewable sources

741521

(7.30.1.3) MWh from non-renewable sources

1971343

(7.30.1.4) Total (renewable and non-renewable) MWh

2712864

Consumption of purchased or acquired heat

(7.30.1.1) Heating value

Select from:

LHV (lower heating value)

(7.30.1.2) MWh from renewable sources

1896

(7.30.1.3) MWh from non-renewable sources

148755

(7.30.1.4) Total (renewable and non-renewable) MWh

150651

Consumption of self-generated non-fuel renewable energy

(7.30.1.1) Heating value

Select from:

LHV (lower heating value)

(7.30.1.2) MWh from renewable sources

12500

(7.30.1.4) Total (renewable and non-renewable) MWh

12500

Total energy consumption

(7.30.1.1) Heating value

Select from:

LHV (lower heating value)

(7.30.1.2) MWh from renewable sources

759081

(7.30.1.3) MWh from non-renewable sources

(7.30.1.4) Total (renewable and non-renewable) MWh

4048548

[Fixed row]

(7.30.6) Select the applications of your organization's consumption of fuel.

	Indicate whether your organization undertakes this fuel application
Consumption of fuel for the generation of electricity	Select from: <input checked="" type="checkbox"/> Yes
Consumption of fuel for the generation of heat	Select from: <input checked="" type="checkbox"/> Yes
Consumption of fuel for the generation of steam	Select from: <input checked="" type="checkbox"/> No
Consumption of fuel for the generation of cooling	Select from: <input checked="" type="checkbox"/> No
Consumption of fuel for co-generation or tri-generation	Select from: <input checked="" type="checkbox"/> Yes

[Fixed row]

(7.30.7) State how much fuel in MWh your organization has consumed (excluding feedstocks) by fuel type.**Sustainable biomass**

(7.30.7.1) Heating value

Select from:

LHV

(7.30.7.2) Total fuel MWh consumed by the organization

1638

(7.30.7.3) MWh fuel consumed for self-generation of electricity

0

(7.30.7.4) MWh fuel consumed for self-generation of heat

0

(7.30.7.6) MWh fuel consumed for self-generation of cooling

0

(7.30.7.7) MWh fuel consumed for self- cogeneration or self-trigeneration

0

(7.30.7.8) Comment

Wood/wood pellets and chips

Other biomass

(7.30.7.1) Heating value

Select from:

Unable to confirm heating value

(7.30.7.2) Total fuel MWh consumed by the organization

0

(7.30.7.3) MWh fuel consumed for self-generation of electricity

0

(7.30.7.4) MWh fuel consumed for self-generation of heat

0

(7.30.7.6) MWh fuel consumed for self-generation of cooling

0

(7.30.7.7) MWh fuel consumed for self- cogeneration or self-trigeneration

0

(7.30.7.8) Comment

n/a, not consumed at ZF sites

Other renewable fuels (e.g. renewable hydrogen)

(7.30.7.1) Heating value

Select from:

LHV

(7.30.7.2) Total fuel MWh consumed by the organization

(7.30.7.3) MWh fuel consumed for self-generation of electricity

0

(7.30.7.4) MWh fuel consumed for self-generation of heat

0

(7.30.7.6) MWh fuel consumed for self-generation of cooling

0

(7.30.7.7) MWh fuel consumed for self- cogeneration or self-trigeneration

0

(7.30.7.8) Comment

Bioethanol and Biodiesel used for mobile combustion (company fleet)

Coal

(7.30.7.1) Heating value

Select from:

Unable to confirm heating value

(7.30.7.2) Total fuel MWh consumed by the organization

0

(7.30.7.3) MWh fuel consumed for self-generation of electricity

0

(7.30.7.4) MWh fuel consumed for self-generation of heat

0

(7.30.7.6) MWh fuel consumed for self-generation of cooling

0

(7.30.7.7) MWh fuel consumed for self- cogeneration or self-trigeneration

0

(7.30.7.8) Comment

n/a, not consumed at ZF sites

Oil

(7.30.7.1) Heating value

Select from:

LHV

(7.30.7.2) Total fuel MWh consumed by the organization

5468

(7.30.7.3) MWh fuel consumed for self-generation of electricity

0

(7.30.7.4) MWh fuel consumed for self-generation of heat

0

(7.30.7.6) MWh fuel consumed for self-generation of cooling

0

(7.30.7.7) MWh fuel consumed for self- cogeneration or self-trigeneration

0

(7.30.7.8) Comment

Heating oil used for heat generation

Gas

(7.30.7.1) Heating value

Select from:

LHV

(7.30.7.2) Total fuel MWh consumed by the organization

1061194

(7.30.7.3) MWh fuel consumed for self-generation of electricity

0

(7.30.7.4) MWh fuel consumed for self-generation of heat

951491

(7.30.7.6) MWh fuel consumed for self-generation of cooling

0

(7.30.7.7) MWh fuel consumed for self- cogeneration or self-trigeneration

109703

(7.30.7.8) Comment

Including natural gas, liquid petroleum gas (LPG) and compressed natural gas (CNG) consumed for mobile combustion (company fleet), self-cogeneration or trigeneration and consumed for self-generation of heat (including building heat and heat for production processes)

Other non-renewable fuels (e.g. non-renewable hydrogen)

(7.30.7.1) Heating value

Select from:

LHV

(7.30.7.2) Total fuel MWh consumed by the organization

102707

(7.30.7.3) MWh fuel consumed for self-generation of electricity

0

(7.30.7.4) MWh fuel consumed for self-generation of heat

0

(7.30.7.6) MWh fuel consumed for self-generation of cooling

0

(7.30.7.7) MWh fuel consumed for self- cogeneration or self-trigeneration

0

(7.30.7.8) Comment

Including diesel and gasoline/ petrol for mobile combustion (company fleet) and testing processes. Including methanol (CH₄O) and acetylene/ ethin (C₂H₂) for production processes

Total fuel

(7.30.7.1) Heating value

Select from:

LHV

(7.30.7.2) Total fuel MWh consumed by the organization

1172533

(7.30.7.3) MWh fuel consumed for self-generation of electricity

0

(7.30.7.4) MWh fuel consumed for self-generation of heat

1062830

(7.30.7.6) MWh fuel consumed for self-generation of cooling

0

(7.30.7.7) MWh fuel consumed for self- cogeneration or self-trigeneration

109703

(7.30.7.8) Comment

*Including all types of fuels for mobile and stationary applications
[Fixed row]*

(7.30.9) Provide details on the electricity, heat, steam, and cooling your organization has generated and consumed in the reporting year.

Electricity

(7.30.9.1) Total Gross generation (MWh)

68816

(7.30.9.2) Generation that is consumed by the organization (MWh)

68648

(7.30.9.3) Gross generation from renewable sources (MWh)

12668

(7.30.9.4) Generation from renewable sources that is consumed by the organization (MWh)

12500

Heat

(7.30.9.1) Total Gross generation (MWh)

50412

(7.30.9.2) Generation that is consumed by the organization (MWh)

50412

(7.30.9.3) Gross generation from renewable sources (MWh)

0

(7.30.9.4) Generation from renewable sources that is consumed by the organization (MWh)

0

Steam

(7.30.9.1) Total Gross generation (MWh)

0

(7.30.9.2) Generation that is consumed by the organization (MWh)

0

(7.30.9.3) Gross generation from renewable sources (MWh)

0

(7.30.9.4) Generation from renewable sources that is consumed by the organization (MWh)

0

Cooling

(7.30.9.1) Total Gross generation (MWh)

0

(7.30.9.2) Generation that is consumed by the organization (MWh)

0

(7.30.9.3) Gross generation from renewable sources (MWh)

0

(7.30.9.4) Generation from renewable sources that is consumed by the organization (MWh)

0

[Fixed row]

(7.30.14) Provide details on the electricity, heat, steam, and/or cooling amounts that were accounted for at a zero or near-zero emission factor in the market-based Scope 2 figure reported in 7.7.

Row 1

(7.30.14.1) Country/area

Select from:

Germany

(7.30.14.2) Sourcing method

Select from:

Physical power purchase agreement (physical PPA) with a grid-connected generator

(7.30.14.3) Energy carrier

Select from:

Electricity

(7.30.14.4) Low-carbon technology type

Select from:

Wind

(7.30.14.5) Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

134878

(7.30.14.6) Tracking instrument used

Select from:

GO

(7.30.14.7) Country/area of origin (generation) of the low-carbon energy or energy attribute

Select from:

Spain

(7.30.14.8) Are you able to report the commissioning or re-powering year of the energy generation facility?

Select from:

Yes

(7.30.14.9) Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

2020

(7.30.14.10) Comment

Renewable power for ZF locations in Germany

Row 2

(7.30.14.1) Country/area

Select from:

Austria

(7.30.14.2) Sourcing method

Select from:

Retail supply contract with an electricity supplier (retail green electricity)

(7.30.14.3) Energy carrier

Select from:

Electricity

(7.30.14.4) Low-carbon technology type

Select from:

Renewable energy mix, please specify :Eligible Technologies acc. ZF Green Power Standard: 1. Wind, solar power, hydro, geothermal 2. Solid, liquid and gaseous forms of biomass from fuels 3. Ocean-based energy resources captured through tidal and wave technologies.

(7.30.14.5) Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

25881

(7.30.14.6) Tracking instrument used

Select from:

Contract

(7.30.14.7) Country/area of origin (generation) of the low-carbon energy or energy attribute

Select from:

Austria

(7.30.14.8) Are you able to report the commissioning or re-powering year of the energy generation facility?

Select from:

No

(7.30.14.10) Comment

ZF purchased at 2 sites in the country green electricity. ZF provides data here on country level only. Within a country several sites may have sourced green electricity, therefor data could be the sum of different assets, technologies and are not tracked by site for external reporting here. Due to the mix of assets and technologies, the detailed commissioning date is not tracked and reported here. Moreover, the country of generation could be any other country within the same market boundary, e.g., AIB origin Europe.

Row 3

(7.30.14.1) Country/area

Select from:

Belgium

(7.30.14.2) Sourcing method

Select from:

Retail supply contract with an electricity supplier (retail green electricity)

(7.30.14.3) Energy carrier

Select from:

Electricity

(7.30.14.4) Low-carbon technology type

Select from:

Renewable energy mix, please specify :Eligible Technologies acc. ZF Green Power Standard: 1. Wind, solar power, hydro, geothermal 2. Solid, liquid and gaseous forms of biomass from fuels 3. Ocean-based energy resources captured through tidal and wave technologies.

(7.30.14.5) Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

(7.30.14.6) Tracking instrument used

Select from:

GO

(7.30.14.7) Country/area of origin (generation) of the low-carbon energy or energy attribute

Select from:

Belgium

(7.30.14.8) Are you able to report the commissioning or re-powering year of the energy generation facility?

Select from:

No

(7.30.14.10) Comment

ZF purchased at 2 sites in the country green electricity. ZF provides data here on country level only. Within a country several sites may have sourced green electricity, therefor data could be the sum of different assets, technologies and are not tracked by site for external reporting here. Due to the mix of assets and technologies, the detailed commissioning date is not tracked and reported here. Moreover, the country of generation could be any other country within the same market boundary, e.g., AIB origin Europe.

Row 4**(7.30.14.1) Country/area**

Select from:

China

(7.30.14.2) Sourcing method

Select from:

Retail supply contract with an electricity supplier (retail green electricity)

(7.30.14.3) Energy carrier

Select from:

Electricity

(7.30.14.4) Low-carbon technology type

Select from:

Renewable energy mix, please specify :Eligible Technologies acc. ZF Green Power Standard: 1. Wind, solar power, hydro, geothermal 2. Solid, liquid and gaseous forms of biomass from fuels 3. Ocean-based energy resources captured through tidal and wave technologies.

(7.30.14.5) Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

71943

(7.30.14.6) Tracking instrument used

Select from:

GEC

(7.30.14.7) Country/area of origin (generation) of the low-carbon energy or energy attribute

Select from:

China

(7.30.14.8) Are you able to report the commissioning or re-powering year of the energy generation facility?

Select from:

No

(7.30.14.10) Comment

ZF purchased at 4 sites in the country green electricity. ZF provides data here on country level only. Within a country several sites may have sourced green electricity, therefor data could be the sum of different assets, technologies and are not tracked by site for external reporting here. Due to the mix of assets and technologies, the detailed commissioning date is not tracked and reported here. Moreover, the country of generation could be any other country within the same market boundary.

Row 7

(7.30.14.1) Country/area

Select from:

Czechia

(7.30.14.2) Sourcing method

Select from:

Retail supply contract with an electricity supplier (retail green electricity)

(7.30.14.3) Energy carrier

Select from:

Electricity

(7.30.14.4) Low-carbon technology type

Select from:

Hydropower (capacity unknown)

(7.30.14.5) Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

47030

(7.30.14.6) Tracking instrument used

Select from:

GO

(7.30.14.7) Country/area of origin (generation) of the low-carbon energy or energy attribute

Select from:

Czechia

(7.30.14.8) Are you able to report the commissioning or re-powering year of the energy generation facility?

Select from:

No

(7.30.14.10) Comment

ZF purchased at 8 sites in the country green electricity. ZF provides data here on country level only. Within a country several sites may have sourced green electricity, therefor data could be the sum of different assets, technologies and are not tracked by site for external reporting here. Due to the mix of assets and technologies, the detailed commissioning date is not tracked and reported here. Moreover, the country of generation was mainly in Czechia, but could be any other country within the same market boundary, e.g., AIB origin Europe

Row 8

(7.30.14.1) Country/area

Select from:

France

(7.30.14.2) Sourcing method

Select from:

Retail supply contract with an electricity supplier (retail green electricity)

(7.30.14.3) Energy carrier

Select from:

Electricity

(7.30.14.4) Low-carbon technology type

Select from:

Renewable energy mix, please specify :Eligible Technologies acc. ZF Green Power Standard: 1. Wind, solar power, hydro, geothermal 2. Solid, liquid and gaseous forms of biomass from fuels 3. Ocean-based energy resources captured through tidal and wave technologies.

(7.30.14.5) Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

24752

(7.30.14.6) Tracking instrument used

Select from:

GO

(7.30.14.7) Country/area of origin (generation) of the low-carbon energy or energy attribute

Select from:

France

(7.30.14.8) Are you able to report the commissioning or re-powering year of the energy generation facility?

Select from:

No

(7.30.14.10) Comment

ZF purchased at 4 sites in the country green electricity. ZF provides data here on country level only. Within a country several sites may have sourced green electricity, therefor data could be the sum of different assets, technologies and are not tracked by site for external reporting here. Due to the mix of assets and technologies, the detailed commissioning date is not tracked and reported here. Moreover, the country of generation was mainly in France, but could be any other country within the same market boundary, e.g., AIB origin Europe

Row 9

(7.30.14.1) Country/area

Select from:

Hungary

(7.30.14.2) Sourcing method

Select from:

Retail supply contract with an electricity supplier (retail green electricity)

(7.30.14.3) Energy carrier

Select from:

Electricity

(7.30.14.4) Low-carbon technology type

Select from:

Hydropower (capacity unknown)

(7.30.14.5) Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

24768

(7.30.14.6) Tracking instrument used

Select from:

GO

(7.30.14.7) Country/area of origin (generation) of the low-carbon energy or energy attribute

Select from:

France

(7.30.14.8) Are you able to report the commissioning or re-powering year of the energy generation facility?

Select from:

Yes

(7.30.14.9) Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

1964

(7.30.14.10) Comment

Renewable power for ZF HUNGÁRIA KFT

Row 10

(7.30.14.1) Country/area

Select from:

India

(7.30.14.2) Sourcing method

Select from:

Physical power purchase agreement (physical PPA) with a grid-connected generator

(7.30.14.3) Energy carrier

Select from:

Electricity

(7.30.14.4) Low-carbon technology type

Select from:

Renewable energy mix, please specify :Eligible Technologies acc. ZF Green Power Standard: 1. Wind, solar power, hydro, geothermal 2. Solid, liquid and gaseous forms of biomass from fuels 3. Ocean-based energy resources captured through tidal and wave technologies.

(7.30.14.5) Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

15310

(7.30.14.6) Tracking instrument used

Select from:

I-REC

(7.30.14.7) Country/area of origin (generation) of the low-carbon energy or energy attribute

Select from:

India

(7.30.14.8) Are you able to report the commissioning or re-powering year of the energy generation facility?

Select from:

No

(7.30.14.10) Comment

ZF purchased at 9 sites in the country green electricity. ZF provides data here on country level only. Within a country several sites may have sourced green electricity, therefor data could be the sum of different assets, technologies and are not tracked by site for external reporting here. Due to the mix of assets and technologies, the detailed commissioning date is not tracked and reported here. Moreover, the country of generation was mainly in India, but could be any other country within the same market boundary, e.g., AIB origin Europe.

Row 12

(7.30.14.1) Country/area

Select from:

Italy

(7.30.14.2) Sourcing method

Select from:

Retail supply contract with an electricity supplier (retail green electricity)

(7.30.14.3) Energy carrier

Select from:

Electricity

(7.30.14.4) Low-carbon technology type

Select from:

Renewable energy mix, please specify :Eligible Technologies acc. ZF Green Power Standard: 1. Wind, solar power, hydro, geothermal 2. Solid, liquid and gaseous forms of biomass from fuels 3. Ocean-based energy resources captured through tidal and wave technologies.

(7.30.14.5) Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

26376

(7.30.14.6) Tracking instrument used

Select from:

GO

(7.30.14.7) Country/area of origin (generation) of the low-carbon energy or energy attribute

Select from:

Finland

(7.30.14.8) Are you able to report the commissioning or re-powering year of the energy generation facility?

Select from:

No

(7.30.14.10) Comment

ZF purchased at 8 sites in the country green electricity. ZF provides data here on country level only. Within a country several sites may have sourced green electricity, therefor data could be the sum of different assets, technologies and are not tracked by site for external reporting here. Due to the mix of assets and technologies, the detailed commissioning date is not tracked and reported here. Moreover, the country of generation was mainly in Italy, but could be any other country within the same market boundary, e.g., AIB origin Europe.

Row 13

(7.30.14.1) Country/area

Select from:

Japan

(7.30.14.2) Sourcing method

Select from:

Retail supply contract with an electricity supplier (retail green electricity)

(7.30.14.3) Energy carrier

Select from:

Electricity

(7.30.14.4) Low-carbon technology type

Select from:

Renewable energy mix, please specify :Eligible Technologies acc. ZF Green Power Standard: 1. Wind, solar power, hydro, geothermal 2. Solid, liquid and gaseous forms of biomass from fuels 3. Ocean-based energy resources captured through tidal and wave technologies

(7.30.14.5) Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

(7.30.14.6) Tracking instrument used

Select from:

Contract

(7.30.14.7) Country/area of origin (generation) of the low-carbon energy or energy attribute

Select from:

Japan

(7.30.14.8) Are you able to report the commissioning or re-powering year of the energy generation facility?

Select from:

No

(7.30.14.10) Comment

ZF purchased at 1 site(s) in the country green electricity. ZF provides data here on country level only. Within a country several sites may have sourced green electricity, therefor data could be the sum of different assets, technologies and are not tracked by site for external reporting here. Due to the mix of assets and technologies, the detailed commissioning date is not tracked and reported here. Moreover, the country of generation was mainly in Japan, but could be any other country within the same market boundary, e.g., AIB origin Europe.

Row 14**(7.30.14.1) Country/area**

Select from:

Malaysia

(7.30.14.2) Sourcing method

Select from:

- Unbundled procurement of energy attribute certificates (EACs)

(7.30.14.3) Energy carrier

Select from:

- Electricity

(7.30.14.4) Low-carbon technology type

Select from:

- Renewable energy mix, please specify :Eligible Technologies acc. ZF Green Power Standard: 1. Wind, solar power, hydro, geothermal 2. Solid, liquid and gaseous forms of biomass from fuels 3. Ocean-based energy resources captured through tidal and wave technologies

(7.30.14.5) Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

828

(7.30.14.6) Tracking instrument used

Select from:

- I-REC

(7.30.14.7) Country/area of origin (generation) of the low-carbon energy or energy attribute

Select from:

- Malaysia

(7.30.14.8) Are you able to report the commissioning or re-powering year of the energy generation facility?

Select from:

- No

(7.30.14.10) Comment

ZF purchased at 1 site(s) in the country green electricity. ZF provides data here on country level only. Within a country several sites may have sourced green electricity, therefore data could be the sum of different assets, technologies and are not tracked by site for external reporting here. Due to the mix of assets and technologies, the detailed commissioning date is not tracked and reported here. Moreover, the country of generation was mainly in Malaysia, but could be any other country within the same market boundary, e.g., AIB origin Europe.

Row 15

(7.30.14.1) Country/area

Select from:

Mexico

(7.30.14.2) Sourcing method

Select from:

Unbundled procurement of energy attribute certificates (EACs)

(7.30.14.3) Energy carrier

Select from:

Electricity

(7.30.14.4) Low-carbon technology type

Select from:

Renewable energy mix, please specify :Eligible Technologies acc. ZF Green Power Standard: 1. Wind, solar power, hydro, geothermal 2. Solid, liquid and gaseous forms of biomass from fuels 3. Ocean-based energy resources captured through tidal and wave technologies.

(7.30.14.5) Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

18323

(7.30.14.6) Tracking instrument used

Select from:

I-REC

(7.30.14.7) Country/area of origin (generation) of the low-carbon energy or energy attribute

Select from:

Mexico

(7.30.14.8) Are you able to report the commissioning or re-powering year of the energy generation facility?

Select from:

No

(7.30.14.10) Comment

ZF purchased at 3 site(s) in the country green electricity. ZF provides data here on country level only. Within a country several sites may have sourced green electricity, therefore data could be the sum of different assets, technologies and are not tracked by site for external reporting here. Due to the mix of assets and technologies, the detailed commissioning date is not tracked and reported here. Moreover, the country of generation was mainly in Mexico, but could be any other country within the same market boundary, e.g., AIB origin Europe.

Row 16

(7.30.14.1) Country/area

Select from:

Poland

(7.30.14.2) Sourcing method

Select from:

Retail supply contract with an electricity supplier (retail green electricity)

(7.30.14.3) Energy carrier

Select from:

Electricity

(7.30.14.4) Low-carbon technology type

Select from:

Renewable energy mix, please specify :Eligible Technologies acc. ZF Green Power Standard: 1. Wind, solar power, hydro, geothermal 2. Solid, liquid and gaseous forms of biomass from fuels 3. Ocean-based energy resources captured through tidal and wave technologies.

(7.30.14.5) Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

61347

(7.30.14.6) Tracking instrument used

Select from:

GO

(7.30.14.7) Country/area of origin (generation) of the low-carbon energy or energy attribute

Select from:

Poland

(7.30.14.8) Are you able to report the commissioning or re-powering year of the energy generation facility?

Select from:

Yes

(7.30.14.9) Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

2010

(7.30.14.10) Comment

ZF purchased at 5 site(s) in the country green electricity. ZF provides data here on country level only. Within a country several sites may have sourced green electricity, therefor data could be the sum of different assets, technologies and are not tracked by site for external reporting here. Due to the mix of assets and technologies, the detailed commissioning date is not tracked and reported here. Moreover, the country of generation was mainly in Poland, but could be any other country within the same market boundary, e.g., AIB origin Europe.

Row 17

(7.30.14.1) Country/area

Select from:

Romania

(7.30.14.2) Sourcing method

Select from:

Retail supply contract with an electricity supplier (retail green electricity)

(7.30.14.3) Energy carrier

Select from:

Electricity

(7.30.14.4) Low-carbon technology type

Select from:

Renewable energy mix, please specify :Eligible Technologies acc. ZF Green Power Standard: 1. Wind, solar power, hydro, geothermal 2. Solid, liquid and gaseous forms of biomass from fuels 3. Ocean-based energy resources captured through tidal and wave technologies.

(7.30.14.5) Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

25209

(7.30.14.6) Tracking instrument used

Select from:

GO

(7.30.14.7) Country/area of origin (generation) of the low-carbon energy or energy attribute

Select from:

Romania

(7.30.14.8) Are you able to report the commissioning or re-powering year of the energy generation facility?

Select from:

No

(7.30.14.10) Comment

ZF purchased at 3 site(s) in the country green electricity. ZF provides data here on country level only. Within a country several sites may have sourced green electricity, therefor data could be the sum of different assets, technologies and are not tracked by site for external reporting here. Due to the mix of assets and technologies, the detailed commissioning date is not tracked and reported here. Moreover, the country of generation was mainly in Romania, but could be any other country within the same market boundary, e.g., AIB origin Europe.

Row 18

(7.30.14.1) Country/area

Select from:

Serbia

(7.30.14.2) Sourcing method

Select from:

Retail supply contract with an electricity supplier (retail green electricity)

(7.30.14.3) Energy carrier

Select from:

Electricity

(7.30.14.4) Low-carbon technology type

Select from:

Hydropower (capacity unknown)

(7.30.14.5) Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

17179

(7.30.14.6) Tracking instrument used

Select from:

GO

(7.30.14.7) Country/area of origin (generation) of the low-carbon energy or energy attribute

Select from:

Serbia

(7.30.14.8) Are you able to report the commissioning or re-powering year of the energy generation facility?

Select from:

Yes

(7.30.14.9) Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

1970

(7.30.14.10) Comment

ZF purchased at 1 site(s) in the country green electricity. ZF provides data here on country level only. Within a country several sites may have sourced green electricity, therefor data could be the sum of different assets, technologies and are not tracked by site for external reporting here. Due to the mix of assets and

technologies, the detailed commissioning date is not tracked and reported here. Moreover, the country of generation was mainly in Serbia, but could be any other country within the same market boundary, e.g., AIB origin Europe.

Row 19

(7.30.14.1) Country/area

Select from:

Slovakia

(7.30.14.2) Sourcing method

Select from:

Retail supply contract with an electricity supplier (retail green electricity)

(7.30.14.3) Energy carrier

Select from:

Electricity

(7.30.14.4) Low-carbon technology type

Select from:

Renewable energy mix, please specify :Eligible Technologies acc. ZF Green Power Standard: 1. Wind, solar power, hydro, geothermal 2. Solid, liquid and gaseous forms of biomass from fuels 3. Ocean-based energy resources captured through tidal and wave technologies.

(7.30.14.5) Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

73006

(7.30.14.6) Tracking instrument used

Select from:

GO

(7.30.14.7) Country/area of origin (generation) of the low-carbon energy or energy attribute

Select from:

Slovakia

(7.30.14.8) Are you able to report the commissioning or re-powering year of the energy generation facility?

Select from:

No

(7.30.14.10) Comment

ZF purchased at 6 site(s) in the country green electricity. ZF provides data here on country level only. Within a country several sites may have sourced green electricity, therefor data could be the sum of different assets, technologies and are not tracked by site for external reporting here. Due to the mix of assets and technologies, the detailed commissioning date is not tracked and reported here. Moreover, the country of generation was mainly in Slovakia, but could be any other country within the same market boundary, e.g., AIB origin Europe.

Row 20

(7.30.14.1) Country/area

Select from:

South Africa

(7.30.14.2) Sourcing method

Select from:

Unbundled procurement of energy attribute certificates (EACs)

(7.30.14.3) Energy carrier

Select from:

Electricity

(7.30.14.4) Low-carbon technology type

Select from:

Renewable energy mix, please specify :Eligible Technologies acc. ZF Green Power Standard: 1. Wind, solar power, hydro, geothermal 2. Solid, liquid and gaseous forms of biomass from fuels 3. Ocean-based energy resources captured through tidal and wave technologies.

(7.30.14.5) Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

207

(7.30.14.6) Tracking instrument used

Select from:

I-REC

(7.30.14.7) Country/area of origin (generation) of the low-carbon energy or energy attribute

Select from:

South Africa

(7.30.14.8) Are you able to report the commissioning or re-powering year of the energy generation facility?

Select from:

No

(7.30.14.10) Comment

ZF purchased at 1 site(s) in the country green electricity. ZF provides data here on country level only. Within a country several sites may have sourced green electricity, therefor data could be the sum of different assets, technologies and are not tracked by site for external reporting here. Due to the mix of assets and technologies, the detailed commissioning date is not tracked and reported here. Moreover, the country of generation was mainly in South Africa, but could be any other country within the same market boundary, e.g., AIB origin Europe.

Row 21

(7.30.14.1) Country/area

Select from:

Spain

(7.30.14.2) Sourcing method

Select from:

Retail supply contract with an electricity supplier (retail green electricity)

(7.30.14.3) Energy carrier

Select from:

Electricity

(7.30.14.4) Low-carbon technology type

Select from:

Renewable energy mix, please specify :Eligible Technologies acc. ZF Green Power Standard: 1. Wind, solar power, hydro, geothermal 2. Solid, liquid and gaseous forms of biomass from fuels 3. Ocean-based energy resources captured through tidal and wave technologies.

(7.30.14.5) Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

66821

(7.30.14.6) Tracking instrument used

Select from:

GO

(7.30.14.7) Country/area of origin (generation) of the low-carbon energy or energy attribute

Select from:

Spain

(7.30.14.8) Are you able to report the commissioning or re-powering year of the energy generation facility?

Select from:

No

(7.30.14.10) Comment

ZF purchased at 12 site(s) in the country green electricity. ZF provides data here on country level only. Within a country several sites may have sourced green electricity, therefor data could be the sum of different assets, technologies and are not tracked by site for external reporting here. Due to the mix of assets and technologies, the detailed commissioning date is not tracked and reported here. Moreover, the country of generation was mainly in Spain, but could be any other country within the same market boundary, e.g., AIB origin Europe.

Row 22

(7.30.14.1) Country/area

Select from:

Thailand

(7.30.14.2) Sourcing method

Select from:

Unbundled procurement of energy attribute certificates (EACs)

(7.30.14.3) Energy carrier

Select from:

Electricity

(7.30.14.4) Low-carbon technology type

Select from:

Renewable energy mix, please specify :Eligible Technologies acc. ZF Green Power Standard: 1. Wind, solar power, hydro, geothermal 2. Solid, liquid and gaseous forms of biomass from fuels 3. Ocean-based energy resources captured through tidal and wave technologies

(7.30.14.5) Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

873

(7.30.14.6) Tracking instrument used

Select from:

I-REC

(7.30.14.7) Country/area of origin (generation) of the low-carbon energy or energy attribute

Select from:

Thailand

(7.30.14.8) Are you able to report the commissioning or re-powering year of the energy generation facility?

Select from:

No

(7.30.14.10) Comment

ZF purchased at 1 site(s) in the country green electricity. ZF provides data here on country level only. Within a country several sites may have sourced green electricity, therefor data could be the sum of different assets, technologies and are not tracked by site for external reporting here. Due to the mix of assets and technologies, the detailed commissioning date is not tracked and reported here. Moreover, the country of generation was mainly in Thailand, but could be any other country within the same market boundary, e.g., AIB origin Europe.

Row 23

(7.30.14.1) Country/area

Select from:

Turkey

(7.30.14.2) Sourcing method

Select from:

- Unbundled procurement of energy attribute certificates (EACs)

(7.30.14.3) Energy carrier

Select from:

- Electricity

(7.30.14.4) Low-carbon technology type

Select from:

- Renewable energy mix, please specify :Eligible Technologies acc. ZF Green Power Standard: 1. Wind, solar power, hydro, geothermal 2. Solid, liquid and gaseous forms of biomass from fuels 3. Ocean-based energy resources captured through tidal and wave technologies.

(7.30.14.5) Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

265

(7.30.14.6) Tracking instrument used

Select from:

- I-REC

(7.30.14.7) Country/area of origin (generation) of the low-carbon energy or energy attribute

Select from:

- Turkey

(7.30.14.8) Are you able to report the commissioning or re-powering year of the energy generation facility?

Select from:

- No

(7.30.14.10) Comment

ZF purchased at 1 site(s) in the country green electricity. ZF provides data here on country level only. Within a country several sites may have sourced green electricity, therefore data could be the sum of different assets, technologies and are not tracked by site for external reporting here. Due to the mix of assets and technologies, the detailed commissioning date is not tracked and reported here. Moreover, the country of generation was mainly in Turkey, but could be any other country within the same market boundary, e.g., AIB origin Europe.

Row 24

(7.30.14.1) Country/area

Select from:

United Kingdom of Great Britain and Northern Ireland

(7.30.14.2) Sourcing method

Select from:

Retail supply contract with an electricity supplier (retail green electricity)

(7.30.14.3) Energy carrier

Select from:

Electricity

(7.30.14.4) Low-carbon technology type

Select from:

Renewable energy mix, please specify :Eligible Technologies acc. ZF Green Power Standard: 1. Wind, solar power, hydro, geothermal 2. Solid, liquid and gaseous forms of biomass from fuels 3. Ocean-based energy resources captured through tidal and wave technologies.

(7.30.14.5) Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

42603

(7.30.14.6) Tracking instrument used

Select from:

REGO

(7.30.14.7) Country/area of origin (generation) of the low-carbon energy or energy attribute

Select from:

United Kingdom of Great Britain and Northern Ireland

(7.30.14.8) Are you able to report the commissioning or re-powering year of the energy generation facility?

Select from:

No

(7.30.14.10) Comment

ZF purchased at 9 site(s) in the country green electricity. ZF provides data here on country level only. Within a country several sites may have sourced green electricity, therefore data could be the sum of different assets, technologies and are not tracked by site for external reporting here. Due to the mix of assets and technologies, the detailed commissioning date is not tracked and reported here. Moreover, the country of generation was mainly in UK, but could be any other country within the same market boundary, e.g., AIB origin Europe.

Row 25

(7.30.14.1) Country/area

Select from:

United States of America

(7.30.14.2) Sourcing method

Select from:

Physical power purchase agreement (physical PPA) with a grid-connected generator

(7.30.14.3) Energy carrier

Select from:

Electricity

(7.30.14.4) Low-carbon technology type

Select from:

Renewable energy mix, please specify :Eligible Technologies acc. ZF Green Power Standard: 1. Wind, solar power, hydro, geothermal 2. Solid, liquid and gaseous forms of biomass from fuels 3. Ocean-based energy resources captured through tidal and wave technologies.

(7.30.14.5) Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

20245

(7.30.14.6) Tracking instrument used

Select from:

US-REC

(7.30.14.7) Country/area of origin (generation) of the low-carbon energy or energy attribute

Select from:

United States of America

(7.30.14.8) Are you able to report the commissioning or re-powering year of the energy generation facility?

Select from:

No

(7.30.14.10) Comment

ZF purchased at 11 site(s) in the country green electricity. ZF provides data here on country level only. Within a country several sites may have sourced green electricity, therefor data could be the sum of different assets, technologies and are not tracked by site for external reporting here. Due to the mix of assets and technologies, the detailed commissioning date is not tracked and reported here. Moreover, the country of generation was mainly in US, but could be any other country within the same market boundary, e.g., AIB origin Europe.

Row 27

(7.30.14.1) Country/area

Select from:

Viet Nam

(7.30.14.2) Sourcing method

Select from:

Unbundled procurement of energy attribute certificates (EACs)

(7.30.14.3) Energy carrier

Select from:

Electricity

(7.30.14.4) Low-carbon technology type

Select from:

Renewable energy mix, please specify :Eligible Technologies acc. ZF Green Power Standard: 1. Wind, solar power, hydro, geothermal 2. Solid, liquid and gaseous forms of biomass from fuels 3. Ocean-based energy resources captured through tidal and wave technologies.

(7.30.14.5) Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

500

(7.30.14.6) Tracking instrument used

Select from:

I-REC

(7.30.14.7) Country/area of origin (generation) of the low-carbon energy or energy attribute

Select from:

Viet Nam

(7.30.14.8) Are you able to report the commissioning or re-powering year of the energy generation facility?

Select from:

No

(7.30.14.10) Comment

ZF purchased at 1 site(s) in the country green electricity. ZF provides data here on country level only. Within a country several sites may have sourced green electricity, therefor data could be the sum of different assets, technologies and are not tracked by site for external reporting here. Due to the mix of assets and technologies, the detailed commissioning date is not tracked and reported here. Moreover, the country of generation was mainly in Viet Nam, but could be any other country within the same market boundary, e.g., AIB origin Europe.

Row 28

(7.30.14.1) Country/area

Select from:

Portugal

(7.30.14.2) Sourcing method

Select from:

Retail supply contract with an electricity supplier (retail green electricity)

(7.30.14.3) Energy carrier

Select from:

Electricity

(7.30.14.4) Low-carbon technology type

Select from:

Hydropower (capacity unknown)

(7.30.14.5) Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

10704

(7.30.14.6) Tracking instrument used

Select from:

GO

(7.30.14.7) Country/area of origin (generation) of the low-carbon energy or energy attribute

Select from:

Portugal

(7.30.14.8) Are you able to report the commissioning or re-powering year of the energy generation facility?

Select from:

Yes

(7.30.14.9) Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

1954

(7.30.14.10) Comment

ZF purchased at 3 site(s) in the country green electricity. ZF provides data here on country level only. Within a country several sites may have sourced green electricity, therefor data could be the sum of different assets, technologies and are not tracked by site for external reporting here. Due to the mix of assets and technologies, the detailed commissioning date is not tracked and reported here. Moreover, the country of generation was mainly in Portugal, but could be any other country within the same market boundary, e.g., AIB origin Europe.

[Add row]

(7.30.16) Provide a breakdown by country/area of your electricity/heat/steam/cooling consumption in the reporting year.

Argentina

(7.30.16.1) Consumption of purchased electricity (MWh)

4743

(7.30.16.2) Consumption of self-generated electricity (MWh)

17

(7.30.16.4) Consumption of purchased heat, steam, and cooling (MWh)

0

(7.30.16.5) Consumption of self-generated heat, steam, and cooling (MWh)

0

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

4760.00

Australia

(7.30.16.1) Consumption of purchased electricity (MWh)

305

(7.30.16.2) Consumption of self-generated electricity (MWh)

0

(7.30.16.4) Consumption of purchased heat, steam, and cooling (MWh)

0

(7.30.16.5) Consumption of self-generated heat, steam, and cooling (MWh)

0

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

305.00

Austria

(7.30.16.1) Consumption of purchased electricity (MWh)

25093

(7.30.16.2) Consumption of self-generated electricity (MWh)

0

(7.30.16.4) Consumption of purchased heat, steam, and cooling (MWh)

5637

(7.30.16.5) Consumption of self-generated heat, steam, and cooling (MWh)

0

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

30730.00

Belgium

(7.30.16.1) Consumption of purchased electricity (MWh)

29440

(7.30.16.2) Consumption of self-generated electricity (MWh)

0

(7.30.16.4) Consumption of purchased heat, steam, and cooling (MWh)

0

(7.30.16.5) Consumption of self-generated heat, steam, and cooling (MWh)

0

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

29440.00

Brazil

(7.30.16.1) Consumption of purchased electricity (MWh)

168613

(7.30.16.2) Consumption of self-generated electricity (MWh)

0

(7.30.16.4) Consumption of purchased heat, steam, and cooling (MWh)

0

(7.30.16.5) Consumption of self-generated heat, steam, and cooling (MWh)

0

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

168613.00

Canada

(7.30.16.1) Consumption of purchased electricity (MWh)

20400

(7.30.16.2) Consumption of self-generated electricity (MWh)

0

(7.30.16.4) Consumption of purchased heat, steam, and cooling (MWh)

0

(7.30.16.5) Consumption of self-generated heat, steam, and cooling (MWh)

0

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

20400.00

China

(7.30.16.1) Consumption of purchased electricity (MWh)

340634

(7.30.16.2) Consumption of self-generated electricity (MWh)

0

(7.30.16.4) Consumption of purchased heat, steam, and cooling (MWh)

6861

(7.30.16.5) Consumption of self-generated heat, steam, and cooling (MWh)

0

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

347495.00

Czechia

(7.30.16.1) Consumption of purchased electricity (MWh)

47347

(7.30.16.2) Consumption of self-generated electricity (MWh)

263

(7.30.16.4) Consumption of purchased heat, steam, and cooling (MWh)

6596

(7.30.16.5) Consumption of self-generated heat, steam, and cooling (MWh)

0

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

54206.00

Denmark

(7.30.16.1) Consumption of purchased electricity (MWh)

120

(7.30.16.2) Consumption of self-generated electricity (MWh)

0

(7.30.16.4) Consumption of purchased heat, steam, and cooling (MWh)

300

(7.30.16.5) Consumption of self-generated heat, steam, and cooling (MWh)

0

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

420.00

France

(7.30.16.1) Consumption of purchased electricity (MWh)

25357

(7.30.16.2) Consumption of self-generated electricity (MWh)

141

(7.30.16.4) Consumption of purchased heat, steam, and cooling (MWh)

0

(7.30.16.5) Consumption of self-generated heat, steam, and cooling (MWh)

589

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

26087.00

Germany

(7.30.16.1) Consumption of purchased electricity (MWh)

968592

(7.30.16.2) Consumption of self-generated electricity (MWh)

54509

(7.30.16.4) Consumption of purchased heat, steam, and cooling (MWh)

125078

(7.30.16.5) Consumption of self-generated heat, steam, and cooling (MWh)

44098

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

1192277.00

Hungary

(7.30.16.1) Consumption of purchased electricity (MWh)

24399

(7.30.16.2) Consumption of self-generated electricity (MWh)

0

(7.30.16.4) Consumption of purchased heat, steam, and cooling (MWh)

0

(7.30.16.5) Consumption of self-generated heat, steam, and cooling (MWh)

0

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

24399.00

India

(7.30.16.1) Consumption of purchased electricity (MWh)

118151

(7.30.16.2) Consumption of self-generated electricity (MWh)

4530

(7.30.16.4) Consumption of purchased heat, steam, and cooling (MWh)

0

(7.30.16.5) Consumption of self-generated heat, steam, and cooling (MWh)

0

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

122681.00

Italy

(7.30.16.1) Consumption of purchased electricity (MWh)

26468

(7.30.16.2) Consumption of self-generated electricity (MWh)

369

(7.30.16.4) Consumption of purchased heat, steam, and cooling (MWh)

0

(7.30.16.5) Consumption of self-generated heat, steam, and cooling (MWh)

0

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

26837.00

Japan

(7.30.16.1) Consumption of purchased electricity (MWh)

2737

(7.30.16.2) Consumption of self-generated electricity (MWh)

0

(7.30.16.4) Consumption of purchased heat, steam, and cooling (MWh)

0

(7.30.16.5) Consumption of self-generated heat, steam, and cooling (MWh)

0

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

2737.00

Malaysia

(7.30.16.1) Consumption of purchased electricity (MWh)

2526

(7.30.16.2) Consumption of self-generated electricity (MWh)

0

(7.30.16.4) Consumption of purchased heat, steam, and cooling (MWh)

0

(7.30.16.5) Consumption of self-generated heat, steam, and cooling (MWh)

0

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

2526.00

Mexico

(7.30.16.1) Consumption of purchased electricity (MWh)

218893

(7.30.16.2) Consumption of self-generated electricity (MWh)

577

(7.30.16.4) Consumption of purchased heat, steam, and cooling (MWh)

0

(7.30.16.5) Consumption of self-generated heat, steam, and cooling (MWh)

0

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

219470.00

Netherlands

(7.30.16.1) Consumption of purchased electricity (MWh)

459

(7.30.16.2) Consumption of self-generated electricity (MWh)

0

(7.30.16.4) Consumption of purchased heat, steam, and cooling (MWh)

0

(7.30.16.5) Consumption of self-generated heat, steam, and cooling (MWh)

0

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

459.00

Poland

(7.30.16.1) Consumption of purchased electricity (MWh)

68625

(7.30.16.2) Consumption of self-generated electricity (MWh)

6585

(7.30.16.4) Consumption of purchased heat, steam, and cooling (MWh)

4834

(7.30.16.5) Consumption of self-generated heat, steam, and cooling (MWh)

5725

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

85769.00

Portugal

(7.30.16.1) Consumption of purchased electricity (MWh)

9751

(7.30.16.2) Consumption of self-generated electricity (MWh)

406

(7.30.16.4) Consumption of purchased heat, steam, and cooling (MWh)

0

(7.30.16.5) Consumption of self-generated heat, steam, and cooling (MWh)

0

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

10157.00

Republic of Korea

(7.30.16.1) Consumption of purchased electricity (MWh)

20919

(7.30.16.2) Consumption of self-generated electricity (MWh)

0

(7.30.16.4) Consumption of purchased heat, steam, and cooling (MWh)

0

(7.30.16.5) Consumption of self-generated heat, steam, and cooling (MWh)

0

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

20919.00

Romania

(7.30.16.1) Consumption of purchased electricity (MWh)

25785

(7.30.16.2) Consumption of self-generated electricity (MWh)

0

(7.30.16.4) Consumption of purchased heat, steam, and cooling (MWh)

0

(7.30.16.5) Consumption of self-generated heat, steam, and cooling (MWh)

0

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

25785.00

Serbia

(7.30.16.1) Consumption of purchased electricity (MWh)

17640

(7.30.16.2) Consumption of self-generated electricity (MWh)

(7.30.16.4) Consumption of purchased heat, steam, and cooling (MWh)

0

(7.30.16.5) Consumption of self-generated heat, steam, and cooling (MWh)

0

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

17720.00

Singapore**(7.30.16.1) Consumption of purchased electricity (MWh)**

226

(7.30.16.2) Consumption of self-generated electricity (MWh)

0

(7.30.16.4) Consumption of purchased heat, steam, and cooling (MWh)

0

(7.30.16.5) Consumption of self-generated heat, steam, and cooling (MWh)

0

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

226.00

Slovakia

(7.30.16.1) Consumption of purchased electricity (MWh)

71320

(7.30.16.2) Consumption of self-generated electricity (MWh)

0

(7.30.16.4) Consumption of purchased heat, steam, and cooling (MWh)

1345

(7.30.16.5) Consumption of self-generated heat, steam, and cooling (MWh)

0

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

72665.00

South Africa

(7.30.16.1) Consumption of purchased electricity (MWh)

2717

(7.30.16.2) Consumption of self-generated electricity (MWh)

652

(7.30.16.4) Consumption of purchased heat, steam, and cooling (MWh)

0

(7.30.16.5) Consumption of self-generated heat, steam, and cooling (MWh)

0

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

3369.00

Spain

(7.30.16.1) Consumption of purchased electricity (MWh)

64017

(7.30.16.2) Consumption of self-generated electricity (MWh)

0

(7.30.16.4) Consumption of purchased heat, steam, and cooling (MWh)

0

(7.30.16.5) Consumption of self-generated heat, steam, and cooling (MWh)

0

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

64017.00

Switzerland

(7.30.16.1) Consumption of purchased electricity (MWh)

(7.30.16.2) Consumption of self-generated electricity (MWh)

0

(7.30.16.4) Consumption of purchased heat, steam, and cooling (MWh)

0

(7.30.16.5) Consumption of self-generated heat, steam, and cooling (MWh)

0

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

155.00

Taiwan, China**(7.30.16.1) Consumption of purchased electricity (MWh)**

591

(7.30.16.2) Consumption of self-generated electricity (MWh)

0

(7.30.16.4) Consumption of purchased heat, steam, and cooling (MWh)

0

(7.30.16.5) Consumption of self-generated heat, steam, and cooling (MWh)

0

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

591.00

Thailand

(7.30.16.1) Consumption of purchased electricity (MWh)

3379

(7.30.16.2) Consumption of self-generated electricity (MWh)

502

(7.30.16.4) Consumption of purchased heat, steam, and cooling (MWh)

0

(7.30.16.5) Consumption of self-generated heat, steam, and cooling (MWh)

0

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

3881.00

Turkey

(7.30.16.1) Consumption of purchased electricity (MWh)

26359

(7.30.16.2) Consumption of self-generated electricity (MWh)

0

(7.30.16.4) Consumption of purchased heat, steam, and cooling (MWh)

0

(7.30.16.5) Consumption of self-generated heat, steam, and cooling (MWh)

0

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

26359.00

United Arab Emirates

(7.30.16.1) Consumption of purchased electricity (MWh)

141

(7.30.16.2) Consumption of self-generated electricity (MWh)

0

(7.30.16.4) Consumption of purchased heat, steam, and cooling (MWh)

0

(7.30.16.5) Consumption of self-generated heat, steam, and cooling (MWh)

0

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

141.00

United Kingdom of Great Britain and Northern Ireland

(7.30.16.1) Consumption of purchased electricity (MWh)

41959

(7.30.16.2) Consumption of self-generated electricity (MWh)

16

(7.30.16.4) Consumption of purchased heat, steam, and cooling (MWh)

0

(7.30.16.5) Consumption of self-generated heat, steam, and cooling (MWh)

0

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

41975.00

United States of America

(7.30.16.1) Consumption of purchased electricity (MWh)

334133

(7.30.16.2) Consumption of self-generated electricity (MWh)

0

(7.30.16.4) Consumption of purchased heat, steam, and cooling (MWh)

0

(7.30.16.5) Consumption of self-generated heat, steam, and cooling (MWh)

0

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

334133.00

Viet Nam

(7.30.16.1) Consumption of purchased electricity (MWh)

870

(7.30.16.2) Consumption of self-generated electricity (MWh)

0

(7.30.16.4) Consumption of purchased heat, steam, and cooling (MWh)

0

(7.30.16.5) Consumption of self-generated heat, steam, and cooling (MWh)

0

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

870.00

[Fixed row]

(7.45) Describe your gross global combined Scope 1 and 2 emissions for the reporting year in metric tons CO2e per unit currency total revenue and provide any additional intensity metrics that are appropriate to your business operations.

Row 1

(7.45.1) Intensity figure

0.00002256

(7.45.2) Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO2e)

1052000

(7.45.3) Metric denominator

Select from:

unit total revenue

(7.45.4) Metric denominator: Unit total

46627000000

(7.45.5) Scope 2 figure used

Select from:

Market-based

(7.45.6) % change from previous year

15

(7.45.7) Direction of change

Select from:

Decreased

(7.45.8) Reasons for change

Select all that apply

- Change in renewable energy consumption
- Other emissions reduction activities
- Change in revenue

(7.45.9) Please explain

The intensity of GHG emissions results directly from the energy intensity and footprint of each country in which energy is purchased and used. In addition, the production footprint is strongly influenced by customer needs, national production and purchasing requirements (market-based). In 2023, the gas and steam turbine plant at the Saarbrücken site (Germany) was sold. This led to a reduction in Scope 1 emissions and an increase in Scope 2 emissions, as this energy needs to be purchased externally. Decrease of 15% results out of energy efficiency initiatives as well as increasing sales figure which is also influenced by inflation impacts.
[Add row]

(7.52) Provide any additional climate-related metrics relevant to your business.

Row 1

(7.52.1) Description

Select from:

- Waste

(7.52.2) Metric value

613557

(7.52.3) Metric numerator

waste in tons

(7.52.4) Metric denominator (intensity metric only)

not applicable, absolute number

(7.52.5) % change from previous year

5.6

(7.52.6) Direction of change

Select from:

Increased

(7.52.7) Please explain

ZF's environmental management system is aimed at continuously reducing the amount of waste generated. The target for all ZF locations is to reduce the waste for disposal volume by 1% annually relative to sales. The base year for the target is 2019. Reducing hazardous waste is also a goal in waste management. For this purpose, the Group is adapting processes, optimizing procedures and replacing hazardous substances used in operations. The disposal of hazardous waste by ZF is organized locally and movement across national borders is only permitted in the absence of local disposal options, taking into account the Basel Convention. In 2023, the total amount of waste increased by 5.6%. The specific amount of waste for disposal (tons per million sales) was again lower in 2023 than in the previous year, and meeting the annual reduction target. The recycling rate was 90%. In 2023, the company was involved in 61 projects for the remediation of contamination dating back at least a decade. Projects were carried out jointly with the relevant local authorities and cost more than 6.9 million (2022: 10.2 million).

[Add row]

(7.53) Did you have an emissions target that was active in the reporting year?

Select all that apply

Absolute target

Intensity target

(7.53.1) Provide details of your absolute emissions targets and progress made against those targets.

Row 1

(7.53.1.1) Target reference number

Select from:

- Abs 1

(7.53.1.2) Is this a science-based target?

Select from:

- Yes, and this target has been approved by the Science Based Targets initiative

(7.53.1.3) Science Based Targets initiative official validation letter

ZFFR-GER-001-OFF__Validation Certificate_SBTI.pdf

(7.53.1.4) Target ambition

Select from:

- 1.5°C aligned

(7.53.1.5) Date target was set

12/31/2021

(7.53.1.6) Target coverage

Select from:

- Organization-wide

(7.53.1.7) Greenhouse gases covered by target

Select all that apply

- Methane (CH₄)
- Nitrous oxide (N₂O)
- Carbon dioxide (CO₂)
- Sulphur hexafluoride (SF₆)
- Nitrogen trifluoride (NF₃)

- Perfluorocarbons (PFCs)
- Hydrofluorocarbons (HFCs)

(7.53.1.8) Scopes

Select all that apply

- Scope 1
- Scope 2

(7.53.1.9) Scope 2 accounting method

Select from:

- Market-based

(7.53.1.11) End date of base year

12/30/2019

(7.53.1.12) Base year Scope 1 emissions covered by target (metric tons CO2e)

406000

(7.53.1.13) Base year Scope 2 emissions covered by target (metric tons CO2e)

1371000

(7.53.1.31) Base year total Scope 3 emissions covered by target (metric tons CO2e)

0.000

(7.53.1.32) Total base year emissions covered by target in all selected Scopes (metric tons CO2e)

1777000.000

(7.53.1.33) Base year Scope 1 emissions covered by target as % of total base year emissions in Scope 1

100

(7.53.1.34) Base year Scope 2 emissions covered by target as % of total base year emissions in Scope 2

100

(7.53.1.53) Base year emissions covered by target in all selected Scopes as % of total base year emissions in all selected Scopes

100

(7.53.1.54) End date of target

12/30/2030

(7.53.1.55) Targeted reduction from base year (%)

80

(7.53.1.56) Total emissions at end date of target covered by target in all selected Scopes (metric tons CO2e)

355400.000

(7.53.1.57) Scope 1 emissions in reporting year covered by target (metric tons CO2e)

247000

(7.53.1.58) Scope 2 emissions in reporting year covered by target (metric tons CO2e)

805000

(7.53.1.77) Total emissions in reporting year covered by target in all selected scopes (metric tons CO2e)

1052000.000

(7.53.1.78) Land-related emissions covered by target

Select from:

No, it does not cover any land-related emissions (e.g. non-FLAG SBT)

(7.53.1.79) % of target achieved relative to base year

51.00

(7.53.1.80) Target status in reporting year

Select from:

Underway

(7.53.1.82) Explain target coverage and identify any exclusions

Climate neutrality by 2040 is part of ZF Strategy "Next Generation Mobility" and therefore relevant for the whole ZF Group worldwide. As for Scope 1 and Scope 2 emissions, the target covers ZF Group own business worldwide, where ZF has operational control.

(7.53.1.83) Target objective

The objective of the target is to support overall decarbonisation target and contribute to emission reduction. ZF commits to reduce absolute Scope 1 & 2 GHG emissions 80% by 2030 from a 2019 base year. This absolute reduction target, which was approved by SBTi in Q1 / 2022, is an element of ZF Climate Neutrality Strategy. The Greenhouse Gas Protocol (GHG) sets an international standard to categorize direct and indirect sources of emissions. Climate neutral means that all processes, products and services will not increase the CO₂e load in the atmosphere. Scopes 1 and 2 can be directly influenced by ZF, as Scope 1 includes direct emissions resulting from the combustion of fossil fuel in ZF's own production and Scope 2 involves emissions from purchased energy, e.g., electricity. ZF conducts its ZF Climate Ambition Initiative for implementation of climate protection strategy in all company processes considering ESG requirements. In this context scope and recalculation processes were reviewed to meet future criteria on auditability.

(7.53.1.84) Plan for achieving target, and progress made to the end of the reporting year

The climate strategy focuses on reduction and substitution. Energy efficiency and avoidance of energy consumption are the given priorities. A secondary focus is the transformation of energy consumption from fossil fuels to renewable sources, or a corresponding technology switch. Energy Efficiency Program The Group includes all production, administrative and research locations in its efficiency programs. A cross-functional team, under the leadership of the domain function Operations and

with the participation of real estate management and EHS, works on increasing energy efficiency. The task force manages a corresponding program and reports to divisional Production Management and the Group. Target achievement and individual projects are monitored and controlled through KPIs within the environmental and energy management system in conformity with ISO 14001 and ISO 50001. Overall, around 1000 projects (2022: 800) were implemented or initiated in 2023, which led to more than 166 GWh in energy savings (2022: 121 GWh). This corresponds to the electricity consumption of 40500 average households and an avoidance of 66700 tons of CO₂e emissions. ZF Green Power Roadmap In early 2021, the Green Power target was set: By 2030, 100% of the required electricity is to be procured from renewable sources. Together with the energy purchasing department, the ZF Green Power Guidance Document has been developed that defines what ZF accepts as “green power”. ZF focuses on technical green energy solutions that ensure real additionality. Particular attention is paid to the generation of electricity by wind turbines using ZF technologies. Activities according to this Green Power Roadmap started and led to increase the share of green power up to 28% in 2022, which contributed to emission reduction in 2023.

(7.53.1.85) Target derived using a sectoral decarbonization approach

Select from:

No

Row 2

(7.53.1.1) Target reference number

Select from:

Abs 2

(7.53.1.2) Is this a science-based target?

Select from:

Yes, we consider this a science-based target, and we have committed to seek validation of this target by the Science Based Targets initiative in the next two years

(7.53.1.4) Target ambition

Select from:

1.5°C aligned

(7.53.1.5) Date target was set

12/31/2021

(7.53.1.6) Target coverage

Select from:

- Organization-wide

(7.53.1.7) Greenhouse gases covered by target

Select all that apply

- Methane (CH4)
- Nitrous oxide (N2O)
- Carbon dioxide (CO2)
- Perfluorocarbons (PFCs)
- Hydrofluorocarbons (HFCs)
- Sulphur hexafluoride (SF6)
- Nitrogen trifluoride (NF3)

(7.53.1.8) Scopes

Select all that apply

- Scope 1
- Scope 2

(7.53.1.9) Scope 2 accounting method

Select from:

- Market-based

(7.53.1.11) End date of base year

12/30/2019

(7.53.1.12) Base year Scope 1 emissions covered by target (metric tons CO2e)

406000.0

(7.53.1.13) Base year Scope 2 emissions covered by target (metric tons CO2e)

1371000.0

(7.53.1.31) Base year total Scope 3 emissions covered by target (metric tons CO2e)

0.000

(7.53.1.32) Total base year emissions covered by target in all selected Scopes (metric tons CO2e)

1777000.000

(7.53.1.33) Base year Scope 1 emissions covered by target as % of total base year emissions in Scope 1

100.0

(7.53.1.34) Base year Scope 2 emissions covered by target as % of total base year emissions in Scope 2

100.0

(7.53.1.53) Base year emissions covered by target in all selected Scopes as % of total base year emissions in all selected Scopes

100.0

(7.53.1.54) End date of target

12/30/2040

(7.53.1.55) Targeted reduction from base year (%)

95

(7.53.1.56) Total emissions at end date of target covered by target in all selected Scopes (metric tons CO2e)

88850.000

(7.53.1.57) Scope 1 emissions in reporting year covered by target (metric tons CO2e)

247000

(7.53.1.58) Scope 2 emissions in reporting year covered by target (metric tons CO2e)

805000

(7.53.1.77) Total emissions in reporting year covered by target in all selected scopes (metric tons CO2e)

1052000.000

(7.53.1.78) Land-related emissions covered by target

Select from:

No, it does not cover any land-related emissions (e.g. non-FLAG SBT)

(7.53.1.79) % of target achieved relative to base year

42.95

(7.53.1.80) Target status in reporting year

Select from:

Underway

(7.53.1.82) Explain target coverage and identify any exclusions

Climate neutrality by 2040 is part of ZF Strategy "Next Generation Mobility" and therefore relevant for the whole ZF Group worldwide. As for Scope 1 and Scope 2 emissions, the target covers ZF Group own business worldwide, where ZF has operational control.

(7.53.1.83) Target objective

The objective of the target is to support overall decarbonisation target and contribute to emission reduction. ZF committed to reduce absolute Scope 1 & 2 GHG emissions to net-zero by 2040. The Greenhouse Gas Protocol (GHG) sets an international standard to categorize direct and indirect sources of emissions. Climate neutral means that all processes, products and services will not increase the CO₂e load in the atmosphere. Scopes 1 and 2 can be directly influenced by ZF, as Scope 1 includes direct emissions resulting from the combustion of fossil fuel in ZF's own production and Scope 2 involves emissions from purchased energy, e.g., electricity. ZF conducts its ZF Climate Ambition Initiative for implementation of climate protection strategy in all company processes considering ESG requirements. In this context scope and recalculation processes were reviewed to meet future criteria on auditability.

(7.53.1.84) Plan for achieving target, and progress made to the end of the reporting year

The climate strategy focuses on reduction and substitution. Energy efficiency and avoidance of energy consumption are the given priorities. A secondary focus is the transformation of energy consumption from fossil fuels to renewable sources, or a corresponding technology switch. Energy Efficiency Program The Group includes all production, administrative and research locations in its efficiency programs. A cross-functional team, under the leadership of the domain function Operations and with the participation of real estate management and EHS, works on increasing energy efficiency. The task force manages a corresponding program and reports to divisional Production Management and the Group. Target achievement and individual projects are monitored and controlled through KPIs within the environmental and energy management system in conformity with ISO 14001 and ISO 50001 Overall, around 1,000 projects (2022: 800) were implemented or initiated in 2023, which led to more than 166 GWh in energy savings (2022: 121 GWh). This corresponds to the electricity consumption of 40,500 average households and an avoidance of 66,700 tons of CO₂e emissions. ZF Green Power Roadmap In early 2021, the Green Power target was set: By 2030, 100% of the required electricity is to be procured from renewable sources. Together with the energy purchasing department, the ZF Green Power Guidance Document has been developed that defines what ZF accepts as "green power". ZF focuses on technical green energy solutions that ensure real additionality. Particular attention is paid to the generation of electricity by wind turbines using ZF technologies. Activities according to this Green Power Roadmap started and led to increase the share of green power up to 28% in 2022, which contributed to emission reduction in 2023.

(7.53.1.85) Target derived using a sectoral decarbonization approach

Select from:

No

[Add row]

(7.53.2) Provide details of your emissions intensity targets and progress made against those targets.

Row 1

(7.53.2.1) Target reference number

Select from:

Int 1

(7.53.2.2) Is this a science-based target?

Select from:

Yes, and this target has been approved by the Science Based Targets initiative

(7.53.2.3) Science Based Targets initiative official validation letter

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(7.53.2.4) Target ambition

Select from:

2°C aligned

(7.53.2.5) Date target was set

12/31/2021

(7.53.2.6) Target coverage

Select from:

Organization-wide

(7.53.2.7) Greenhouse gases covered by target

Select all that apply

Carbon dioxide (CO₂)

Methane (CH₄)

Nitrous oxide (N₂O)

(7.53.2.8) Scopes

Select all that apply

- Scope 3

(7.53.2.10) Scope 3 categories

Select all that apply

- Category 15: Investments
- Category 2: Capital goods
- Category 6: Business travel
- Category 7: Employee commuting
- Category 1: Purchased goods and services
- Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2)
- Category 10: Processing of sold products
- Category 5: Waste generated in operations
- Category 12: End-of-life treatment of sold products
- Category 4: Upstream transportation and distribution
- Category 9: Downstream transportation and distribution

(7.53.2.11) Intensity metric

Select from:

- Metric tons CO2e per unit revenue

(7.53.2.12) End date of base year

12/30/2019

(7.53.2.15) Intensity figure in base year for Scope 3, Category 1: Purchased goods and services (metric tons CO2e per unit of activity)

0.000594

(7.53.2.16) Intensity figure in base year for Scope 3, Category 2: Capital goods (metric tons CO2e per unit of activity)

0.000041

(7.53.2.17) Intensity figure in base year for Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) (metric tons CO2e per unit of activity)

0.000006

(7.53.2.18) Intensity figure in base year for Scope 3, Category 4: Upstream transportation and distribution (metric tons CO2e per unit of activity)

0.000031

(7.53.2.19) Intensity figure in base year for Scope 3, Category 5: Waste generated in operations (metric tons CO2e per unit of activity)

0.000004

(7.53.2.20) Intensity figure in base year for Scope 3, Category 6: Business travel (metric tons CO2e per unit of activity)

0.000003

(7.53.2.21) Intensity figure in base year for Scope 3, Category 7: Employee commuting (metric tons CO2e per unit of activity)

0.000004

(7.53.2.23) Intensity figure in base year for Scope 3, Category 9: Downstream transportation and distribution (metric tons CO2e per unit of activity)

0.000011

(7.53.2.24) Intensity figure in base year for Scope 3, Category 10: Processing of sold products (metric tons CO2e per unit of activity)

0.000002

(7.53.2.26) Intensity figure in base year for Scope 3, Category 12: End-of-life treatment of sold products (metric tons CO2e per unit of activity)

0.000002

(7.53.2.29) Intensity figure in base year for Scope 3, Category 15: Investments (metric tons CO2e per unit of activity)

0.000001

(7.53.2.32) Intensity figure in base year for total Scope 3 (metric tons CO2e per unit of activity)

0.0006990000

(7.53.2.33) Intensity figure in base year for all selected Scopes (metric tons CO2e per unit of activity)

0.0006990000

(7.53.2.36) % of total base year emissions in Scope 3, Category 1: Purchased goods and services covered by this Scope 3, Category 1: Purchased goods and services intensity figure

100

(7.53.2.37) % of total base year emissions in Scope 3, Category 2: Capital goods covered by this Scope 3, Category 2: Capital goods intensity figure

100

(7.53.2.38) % of total base year emissions in Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) covered by this Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) intensity figure

100

(7.53.2.39) % of total base year emissions in Scope 3, Category 4: Upstream transportation and distribution covered by this Scope 3, Category 4: Upstream transportation and distribution intensity figure

100

(7.53.2.40) % of total base year emissions in Scope 3, Category 5: Waste generated in operations covered by this Scope 3, Category 5: Waste generated in operations intensity figure

100

(7.53.2.41) % of total base year emissions in Scope 3, Category 6: Business travel covered by this Scope 3, Category 6: Business travel intensity figure

100

(7.53.2.42) % of total base year emissions in Scope 3, Category 7: Employee commuting covered by this Scope 3, Category 7: Employee commuting intensity figure

100

(7.53.2.44) % of total base year emissions in Scope 3, Category 9: Downstream transportation and distribution covered by this Scope 3, Category 9: Downstream transportation and distribution intensity figure

100

(7.53.2.45) % of total base year emissions in Scope 3, Category 10: Processing of sold products covered by this Scope 3, Category 10: Processing of sold products intensity figure

100

(7.53.2.47) % of total base year emissions in Scope 3, Category 12: End-of-life treatment of sold products covered by this Scope 3, Category 12: End-of-life treatment of sold products intensity figure

100

(7.53.2.50) % of total base year emissions in Scope 3, Category 15: Investments covered by this Scope 3, Category 15: Investments intensity figure

100

(7.53.2.53) % of total base year emissions in Scope 3 (in all Scope 3 categories) covered by this total Scope 3 intensity figure

100

(7.53.2.54) % of total base year emissions in all selected Scopes covered by this intensity figure

100

(7.53.2.55) End date of target

12/30/2030

(7.53.2.56) Targeted reduction from base year (%)

40

(7.53.2.57) Intensity figure at end date of target for all selected Scopes (metric tons CO2e per unit of activity)

0.0004194000

(7.53.2.59) % change anticipated in absolute Scope 3 emissions

-13.5

(7.53.2.62) Intensity figure in reporting year for Scope 3, Category 1: Purchased goods and services (metric tons CO2e per unit of activity)

0.000325

(7.53.2.63) Intensity figure in reporting year for Scope 3, Category 2: Capital goods (metric tons CO2e per unit of activity)

0.000033

(7.53.2.64) Intensity figure in reporting year for Scope 3, Category 3: Fuel- and energy-related activities (metric tons CO2e per unit of activity)

0.000006

(7.53.2.65) Intensity figure in reporting year for Scope 3, Category 4: Upstream transportation and distribution (metric tons CO2e per unit of activity)

0.000023

(7.53.2.66) Intensity figure in reporting year for Scope 3, Category 5: Waste generated in operations (metric tons CO2e per unit of activity)

0.000003

(7.53.2.67) Intensity figure in reporting year for Scope 3, Category 6: Business travel (metric tons CO2e per unit of activity)

0.000001

(7.53.2.68) Intensity figure in reporting year for Scope 3, Category 7: Employee commuting (metric tons CO2e per unit of activity)

0.000003

(7.53.2.70) Intensity figure in reporting year for Scope 3, Category 9: Downstream transportation and distribution (metric tons CO2e per unit of activity)

0.000009

(7.53.2.71) Intensity figure in reporting year for Scope 3, Category 10: Processing of sold products (metric tons CO2e per unit of activity)

0.000001

(7.53.2.73) Intensity figure in reporting year for Scope 3, Category 12: End-of-life treatment of sold products (metric tons CO2e per unit of activity)

0.000003

(7.53.2.76) Intensity figure in reporting year for Scope 3, Category 15: Investments (metric tons CO2e per unit of activity)

1e-7

(7.53.2.79) Intensity figure in reporting year for total Scope 3 (metric tons CO2e per unit of activity)

0.0004071000

(7.53.2.80) Intensity figure in reporting year for all selected Scopes (metric tons CO2e per unit of activity)

0.0004071000

(7.53.2.81) Land-related emissions covered by target

Select from:

No, it does not cover any land-related emissions (e.g. non-FLAG SBT)

(7.53.2.82) % of target achieved relative to base year

(7.53.2.83) Target status in reporting year

Select from:

 Achieved**(7.53.2.85) Explain target coverage and identify any exclusions**

ZF commits to reduce Scope 3 (upstream & downstream) GHG emissions 40% per Million Euro sales by 2030 from a 2019 base year. This target includes Scope 3 "upstream" and "downstream" categories. This intensity reduction target, which was announced 2021 and validated by SBTi in Q1 / 2022, is an element of ZF Climate Neutrality Strategy. The Greenhouse Gas Protocol (GHG) sets an international standard to categorize direct and indirect sources of emissions. Climate neutral means that all processes, products and services will not increase the CO₂e load in the atmosphere. Scope 3 accounts for indirect emissions generated by purchased goods (Scope 3 "upstream") and emissions generated by ZF products in the utilization phase (Scope 3 "downstream") and can therefore not be directly influenced by the Group. The categories with high materiality are Category 1: Purchased goods and services. Category 11: Use of sold products is excluded from the SBTi validated target, because of limited influence of ZF Group. Further three categories are excluded, because there are not relevant for ZF: Category 8: Upstream Leased Assets, Category 13: Downstream Leased Assets and Category 14: Franchises. Other categories (Category 2, 3, 4, 5, 6, 7, 9, 10, 12) are of low share (

(7.53.2.86) Target objective

The objective of the target is to support overall decarbonisation target and contribute to emission reduction. ZF committed to reduce absolute Scope 1 & 2 GHG emissions to net-zero by 2040. The Greenhouse Gas Protocol (GHG) sets an international standard to categorize direct and indirect sources of emissions. Climate neutral means that all processes, products and services will not increase the CO₂e load in the atmosphere. Scopes 1 and 2 can be directly influenced by ZF, as Scope 1 includes direct emissions resulting from the combustion of fossil fuel in ZF's own production and Scope 2 involves emissions from purchased energy, e.g., electricity. Climate neutrality by 2040 is part of ZF Strategy "Next Generation Mobility". ZF conducts its ZF Climate Ambition Initiative for implementation of climate protection strategy in all company processes considering ESG requirements. In this context scope and recalculation processes were reviewed to meet future criteria on auditability. This led to change in carbon accounting of one power plant and inclusion of sites from former WABCO into scope. Therefore, reporting year 2023 numbers stated here are including former WABCO site. Base year 2019 numbers are not including WABCO revenue due to lack of comparable data for metric dominator (revenue).

(7.53.2.88) Target derived using a sectoral decarbonization approach

Select from:

 No**(7.53.2.89) List the emissions reduction initiatives which contributed most to achieving this target**

- *Green electricity in supply chain: In 2023, ZF carried out pilot projects for the decarbonization of purchased parts across the Group. The aim is to gain practical experience in implementing the decarbonization levers defined by ZF and to compare the theoretically calculated potentials with the actual impacts and costs. A successful example is the conversion of a forged part produced in India to EAF steel produced with green electricity, which reduces the product carbon footprint (PCF) of the delivered part by 37%. An important lever is increasing the use of green electricity in the supply chain. ZF therefore expanded the existing decarbonization campaign in the year under review. The target of achieving 100% renewable energies by 2025 was included in the bid conditions for production material suppliers. So far, suppliers have pledged to achieve the same renewable energies target for more than 60% of the purchasing volume.*
- *Portfolio shift*

Revenue growth

[Add row]

(7.54) Did you have any other climate-related targets that were active in the reporting year?

Select all that apply

- Targets to increase or maintain low-carbon energy consumption or production
- Net-zero targets
- Other climate-related targets

(7.54.1) Provide details of your targets to increase or maintain low-carbon energy consumption or production.

Row 1

(7.54.1.1) Target reference number

Select from:

- Low 1

(7.54.1.2) Date target was set

12/31/2021

(7.54.1.3) Target coverage

Select from:

- Organization-wide

(7.54.1.4) Target type: energy carrier

Select from:

Electricity

(7.54.1.5) Target type: activity

Select from:

Consumption

(7.54.1.6) Target type: energy source

Select from:

Renewable energy source(s) only

(7.54.1.7) End date of base year

12/30/2019

(7.54.1.8) Consumption or production of selected energy carrier in base year (MWh)

2559000

(7.54.1.9) % share of low-carbon or renewable energy in base year

10

(7.54.1.10) End date of target

12/30/2025

(7.54.1.11) % share of low-carbon or renewable energy at end date of target

100

(7.54.1.12) % share of low-carbon or renewable energy in reporting year

28

(7.54.1.13) % of target achieved relative to base year

20.00

(7.54.1.14) Target status in reporting year

Select from:

Underway

(7.54.1.16) Is this target part of an emissions target?

Yes, the transformation to renewable energy sources is part of overarching ZF Climate Neutrality Strategy. To achieve decarbonization in operations (Scope 12), ZF focuses on two main levers: energy efficiency and the transformation towards green electricity. The overall emission reduction target has been set as follows: by 2030 Scope 1 and Scope 2 emissions to have reduced by 80 percent, as compared to 2019. The target will be achieved with contributions from the energy efficiency projects and an increased share of renewable power of 100 percent by 2025.

(7.54.1.17) Is this target part of an overarching initiative?

Select all that apply

Science Based Targets initiative

(7.54.1.18) Science Based Targets initiative official validation letter

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(7.54.1.19) Explain target coverage and identify any exclusions

This is a ZF Group target, including all production, administrative and research facilities. Target coverage according SBTi Validation process (operational control)

(7.54.1.20) Target objective

The objective of the target is to support overall decarbonisation target and contribute to emission reduction

(7.54.1.21) Plan for achieving target, and progress made to the end of the reporting year

ZF Green Power Roadmap In early 2021, the Green Power target was set and adjusted in 2023: By 2025 (5 years earlier than originally planned), 100% of the required electricity is to be procured from renewable sources. Together with the energy purchasing department, the ZF Green Power Guidance Document has been developed that defines what ZF accepts as “green power”. ZF focuses on technical green energy solutions that ensure real additionality. Particular attention is paid to the generation of electricity by wind turbines using ZF technologies. In 2023 renewables accounted for 28% of the total electricity (2022: 23%; 2021: 16%) – under guaranteed certified green power contracts. This improvement is a result of the initiatives and contract amendments within the ZF Green Power Roadmap. The amount of self-generated electricity from renewable sources doubled to 12,500 MWh (2022: 5,729 MWh).

[Add row]

(7.54.2) Provide details of any other climate-related targets, including methane reduction targets.

Row 1

(7.54.2.1) Target reference number

Select from:

Oth 1

(7.54.2.2) Date target was set

12/31/2022

(7.54.2.3) Target coverage

Select from:

Organization-wide

(7.54.2.4) Target type: absolute or intensity

Select from:

Intensity

(7.54.2.5) Target type: category & Metric (target numerator if reporting an intensity target)

Energy consumption or efficiency

MWh

(7.54.2.6) Target denominator (intensity targets only)

Select from:

unit revenue

(7.54.2.7) End date of base year

12/30/2022

(7.54.2.8) Figure or percentage in base year

98

(7.54.2.9) End date of target

12/30/2023

(7.54.2.10) Figure or percentage at end of date of target

95

(7.54.2.11) Figure or percentage in reporting year

87

(7.54.2.12) % of target achieved relative to base year

366.666666667

(7.54.2.13) Target status in reporting year

Select from:

Achieved

(7.54.2.15) Is this target part of an emissions target?

Yes, the Energy Efficiency target is part of overarching ZF Climate Neutrality Strategy. To achieve decarbonization in operations (Scope 12), ZF focuses on two main levers: energy efficiency and the transformation towards green energy. The Group includes all production, administrative and research facilities in its efficiency programs. The overall emission reduction target has been set as follows: by 2030 Scope 1 and Scope 2 emissions to have reduced by 80 percent, as compared to 2019. The target will be achieved with contributions from the energy efficiency projects and an increased share of renewable power.

(7.54.2.16) Is this target part of an overarching initiative?

Select all that apply

Science Based targets initiative - approved other

(7.54.2.17) Science Based Targets initiative official validation letter

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(7.54.2.18) Please explain target coverage and identify any exclusions

Target coverage according SBTi Validation process (operational control). The Group includes all production, administrative and research locations in its efficiency programs.

(7.54.2.19) Target objective

The objective of the target is to support overall decarbonisation target and contribute to emission reduction. In the course of ZF's Sustainability Ambition Project and the further development of its climate strategy, all subgoals contributing to the reduction of CO2e emissions were adjusted and updated. To achieve decarbonization of its locations, ZF focuses on two main levers: energy efficiency and the switch to green energy. ZF includes all production, administrative and research locations in its efficiency programs. For the year under review ZF increased the energy efficiency target on group level to 3%.

(7.54.2.21) List the actions which contributed most to achieving this target

Energy Efficiency Program - A cross-functional team, under the leadership of the domain function Operations and with the participation of real estate management and EHS, works on increasing energy efficiency. The team manages a corresponding program and reports to divisional Production Management and the Group. Target achievement and individual projects are monitored and controlled through KPIs within the environmental and energy management system in conformity with ISO 14001 and ISO 50001. Overall, a total of approx. 1000 projects (2022: 800; 2021: 555) has been implemented or initiated, which led to more than 166 GWh in energy savings (2022: 121 GWh; 2021: 86.4 GWh). This corresponds to the electricity consumption of 40,500 average households and the avoidance of 66,700 tons of CO₂e emissions. As part of the ZF Energy Basics Program, each location is expected to establish and maintain standards to improve employee awareness and to promote behavioural changes as well as standards for demand or peak-load management. For each aspect, a guidance document has been added to the ZF EHS management system. In the field of compressed air, a joint campaign implemented by Spare Parts Procurement, Machine Inventory and EHS to standardize technology resulted in an energy-optimized compressed air management scheme. To further reduce energy consumption for heat generation, ZF continues to recover heat from industrial and washing processes.

Row 3

(7.54.2.1) Target reference number

Select from:

Oth 2

(7.54.2.2) Date target was set

12/30/2022

(7.54.2.3) Target coverage

Select from:

Organization-wide

(7.54.2.4) Target type: absolute or intensity

Select from:

Absolute

(7.54.2.5) Target type: category & Metric (target numerator if reporting an intensity target)

Energy productivity

Other, energy productivity, please specify :Increase Green Electricity Spend Coverage with ZF's direct suppliers for Production Material to 100% by 2025

(7.54.2.7) End date of base year

12/30/2021

(7.54.2.8) Figure or percentage in base year

28.0

(7.54.2.9) End date of target

12/30/2025

(7.54.2.10) Figure or percentage at end of date of target

100

(7.54.2.11) Figure or percentage in reporting year

41

(7.54.2.12) % of target achieved relative to base year

18.0555555556

(7.54.2.13) Target status in reporting year

Select from:

Underway

(7.54.2.15) Is this target part of an emissions target?

Yes, this target is part of the overarching ZF Climate Neutrality Strategy and a main lever to achieve ZF Scope 3 target, validated by SBTi. Supply chain sustainability program for development to enable suppliers is in place. To drive forward the topic of climate neutrality in the supply chain, ZF communicated quantified expectations for essential carbon reduction levers. These include, among other things, the use of renewable energies and secondary raw materials. In addition, so-called decarbonization dialogues were initiated with important suppliers of production and non-production materials. A significant outcome of this dialogue has been the identification of measures that will be implemented through joint projects and materialize over the coming years. At the ZF supplier summit in November 2022, we communicated decarbonization expectations, which are part of ZF's new bid conditions. They are followed by specific measures to be achieved by the supplier base in 2023. A fundamental expectation is the goal of "100% Green Electricity for all new sourcing decisions by 2025". Therefore, we focused on receiving green electricity roadmaps from suppliers and introduced supplier product carbon footprints (PCF) in sourcing decisions. Other bid conditions comprise goals for recycled content, energy efficiency and further material-specific requirements.

(7.54.2.16) Is this target part of an overarching initiative?

Select all that apply

Science Based targets initiative - approved other

(7.54.2.17) Science Based Targets initiative official validation letter

ZFFR-GER-001-OFF__Validation Certificate_SBTI.pdf

(7.54.2.18) Please explain target coverage and identify any exclusions

The target considers production materials (PM) only. By focusing on production material suppliers, ZF can address a substantial portion of its indirect emissions and work towards reducing its overall carbon footprint. Non-production materials (NPM) are often one-time-buys and the overall impact and levers are low. Therefore, NPM are not prioritized yet (Share NPM 90%).

(7.54.2.19) Target objective

Sustainability management in the supply chain plays a decisive role for ZF. This applies both to environmental issues such as reducing greenhouse gas emissions and to social issues such as respect for human rights. For this reason, ZF pursues ambitious targets for the company itself and for suppliers and implemented numerous sustainability measures in the year under review. To be able to evaluate the sustainability performance of suppliers, the company has replaced the ZF Sustainability Criterion with the ZF Sustainability Score. This fully digital solution requires compliance with minimum requirements and measures sustainability performance using three key values: the green electricity share in 2025, the result of the NQC sustainability questionnaire and the acceptance of the ZF Business Partner Principles.

(7.54.2.20) Plan for achieving target, and progress made to the end of the reporting year

As green electricity is the most relevant lever to achieving decarbonization of the supply chain, we developed the “ZF Supplier Guide and FAQ on Green Electricity”. It contains definitions and ZF’s expectations as well as different procurement options to obtain green electricity (GE). The guide is available for all suppliers in ZF’s Supplier Business Portal. It has also been attached to the digital GE roadmap survey that ZF conducted during 2022, collecting feedback of more than 1.200 suppliers, which will be asked to update their GE roadmaps on a yearly basis. Furthermore, ZF intensified supplier training on green electricity.
[Add row]

(7.54.3) Provide details of your net-zero target(s).

Row 1

(7.54.3.1) Target reference number

Select from:

NZ1

(7.54.3.2) Date target was set

12/31/2021

(7.54.3.3) Target Coverage

Select from:

Organization-wide

(7.54.3.4) Targets linked to this net zero target

Select all that apply

Abs1

Abs2

Int1

Low1

(7.54.3.5) End date of target for achieving net zero

(7.54.3.6) Is this a science-based target?

Select from:

- Yes, we consider this a science-based target, and we have committed to seek validation of this target by the Science Based Targets initiative in the next two years

(7.54.3.8) Scopes

Select all that apply

- Scope 1
- Scope 2
- Scope 3

(7.54.3.9) Greenhouse gases covered by target

Select all that apply

- Carbon dioxide (CO₂)
- Methane (CH₄)
- Nitrous oxide (N₂O)

(7.54.3.10) Explain target coverage and identify any exclusions

This target includes Scope 3 "upstream" and "downstream" categories. Three categories are excluded, because there are not relevant for ZF: Category 8: Upstream Leased Assets, Category 13: Downstream Leased Assets and Category 14: Franchises.

(7.54.3.11) Target objective

Our ambition is to achieve net zero emissions in all three scopes by 2040. The ZF Group's Next Generation Mobility strategy aims at ensuring clean, safe, comfortable and affordable mobility. Developing and establishing sustainable products is an integral part of this strategy. In 2022, ZF integrated decarbonization in the Groups overall strategy and made a commitment to climate protection and nature conservation, people and lasting values under on common motto: Acting now.

(7.54.3.12) Do you intend to neutralize any residual emissions with permanent carbon removals at the end of the target?

Select from:

Unsure

(7.54.3.13) Do you plan to mitigate emissions beyond your value chain?

Select from:

No, we do not plan to mitigate emissions beyond our value chain

(7.54.3.17) Target status in reporting year

Select from:

Underway

(7.54.3.19) Process for reviewing target

The Sustainability Steering Board is the highest steering committee. It consists of representatives of the senior management from the divisions, regions and functions of ZF and has the following tasks: Supporting the Board of Management in monitoring relevant sustainability and corporate social responsibility aspects Regularly reviewing the effectiveness of the sustainability strategy as well as the agreed targets and measures Ensuring that the sustainability strategy is anchored in relevant processes and structures of the company Checking at regular intervals if key topics are up to date
[Add row]

(7.55) Did you have emissions reduction initiatives that were active within the reporting year? Note that this can include those in the planning and/or implementation phases.

Select from:

Yes

(7.55.1) Identify the total number of initiatives at each stage of development, and for those in the implementation stages, the estimated CO2e savings.

	Number of initiatives	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Under investigation	550	`Numeric input
To be implemented	130	9800
Implementation commenced	130	10400
Implemented	1000	66700
Not to be implemented	57	`Numeric input

[Fixed row]

(7.55.2) Provide details on the initiatives implemented in the reporting year in the table below.

Row 1

(7.55.2.1) Initiative category & Initiative type

Energy efficiency in buildings

Other, please specify :mix of several/ main levers: Building envelope, heat recovery, HVAC, hydraulic balance, lighting, metering, motors & pumps

(7.55.2.2) Estimated annual CO2e savings (metric tonnes CO2e)

20000

(7.55.2.3) Scope(s) or Scope 3 category(ies) where emissions savings occur

Select all that apply

Scope 1

Scope 2 (location-based)

Scope 2 (market-based)

(7.55.2.4) Voluntary/Mandatory

Select from:

Mandatory

(7.55.2.5) Annual monetary savings (unit currency – as specified in C0.4)

7140000

(7.55.2.6) Investment required (unit currency – as specified in C0.4)

11900000

(7.55.2.7) Payback period

Select from:

1-3 years

(7.55.2.8) Estimated lifetime of the initiative

Select from:

6-10 years

(7.55.2.9) Comment

Data are a summarization of 358 projects which are classified as “building”-related efficiency measures.

Row 2

(7.55.2.1) Initiative category & Initiative type

Energy efficiency in production processes

Other, please specify :mix of several/ main levers: compressed air, exchange of electrical cabinets

(7.55.2.2) Estimated annual CO2e savings (metric tonnes CO2e)

17400

(7.55.2.3) Scope(s) or Scope 3 category(ies) where emissions savings occur

Select all that apply

- Scope 1
- Scope 2 (location-based)
- Scope 2 (market-based)

(7.55.2.4) Voluntary/Mandatory

Select from:

- Mandatory

(7.55.2.5) Annual monetary savings (unit currency – as specified in C0.4)

4872000

(7.55.2.6) Investment required (unit currency – as specified in C0.4)

6042000

(7.55.2.7) Payback period

Select from:

- 1-3 years

(7.55.2.8) Estimated lifetime of the initiative

Select from:

6-10 years

(7.55.2.9) Comment

Data are a summarization of 226 projects which are classified as “process”-related efficiency measures.

Row 3

(7.55.2.1) Initiative category & Initiative type

Energy efficiency in production processes

Other, please specify :Energy efficiency (others)

(7.55.2.2) Estimated annual CO2e savings (metric tonnes CO2e)

29300

(7.55.2.3) Scope(s) or Scope 3 category(ies) where emissions savings occur

Select all that apply

Scope 1

Scope 2 (location-based)

Scope 2 (market-based)

(7.55.2.4) Voluntary/Mandatory

Select from:

Mandatory

(7.55.2.5) Annual monetary savings (unit currency – as specified in C0.4)

5950000

(7.55.2.6) Investment required (unit currency – as specified in C0.4)

9087000

(7.55.2.7) Payback period

Select from:

1-3 years

(7.55.2.8) Estimated lifetime of the initiative

Select from:

6-10 years

(7.55.2.9) Comment

Data are a summarization of 427 projects which are not only classified as “building or production”-related efficiency measures, because they have effects on both and/ or further categories.

[Add row]

(7.55.3) What methods do you use to drive investment in emissions reduction activities?

Row 1

(7.55.3.1) Method

Select from:

Other :The ZF WAY

(7.55.3.2) Comment

THE ZF WAY In more than one hundred years of company history, ZF has developed a unique corporate culture. It is based on the entrepreneurial spirit of its founders and has always been highly innovation oriented. We refer to this culture as the ZF Way. It shows both the origin of the company and the direction of its

continuous development. The ZF Way offers orientation and a clear direction in the midst of an industry transformation that is more dynamic and, in certain areas, more fundamental than ever before. The ZF Way is based on three pillars: 1. ZF strategy: "Next Generation Mobility" ZF's mission is to enable clean, safe, comfortable and affordable mobility for everyone, everywhere. The resulting Next Generation Mobility strategy is a guideline for how the company intends to master future challenges, respond to industry developments and face a constantly changing environment. In this connection, targets and KPIs are continuously updated to meet changing requirements. 2. ZF Way principles The ZF Way principles illustrate how ZF shapes cooperation and leadership. Every employee should be able to identify with these principles and put them to use in their everyday work. These principles also provide the framework for a successful implementation of the corporate strategy. The equally ranked five principles are: • Passion • Anticipation • Diversity • Empowerment • Accountability 3. Operating model The operating model is based on three pillars: the divisions, functions and regions. It defines how ZF serves its customers. For this purpose, it summarizes processes, structures and directives. At the same time, the operating model serves as a framework for global cooperation characterized by the ZF Way principles. More information on the ZF Way is available at www.zf.com

Row 3

(7.55.3.1) Method

Select from:

Dedicated budget for low-carbon product R&D

(7.55.3.2) Comment

Our objective: new mobility Despite COVID-19-related restrictions, the Group successfully pursued the projects planned for the implementation of the Next Generation Mobility corporate strategy in 2021. To this end, the Group invests in the future sectors of new vehicle functions, software, artificial intelligence and efficient, electrified drive systems in particular. We have defined four enablers for our path to the implementation of our technology strategy: - Vehicle Systems & Functions - Data handling & Analytics - Efficient energy conversion - Advanced Base Technology Within these four technology enablers there are 19 key technologies (focus topics) that we are pursuing in global research and development. R&D expenditure remains high In the fiscal year 2023, we invested 3,543 million (2022: 3,425 million) in research and development. This corresponds to a sales share of 7.6% (2022: 7.8%) R&D expenditure is defined as research and development costs according to the statement of profit and loss plus capitalized development costs, less their depreciation. ZF has set ambitious climate targets, that is why we have updated our corporate product strategy, even though ZF products were already meeting many of the criteria. As a result, ZF will no longer invest in R&D of component parts for combustion engine-powered drive systems.

Row 4

(7.55.3.1) Method

Select from:

Compliance with regulatory requirements/standards

(7.55.3.2) Comment

An indispensable component of ZF's success is correct, responsible, and sustainable business management as well as the adherence to all statutory requirements in the countries in which ZF operates.

Row 5

(7.55.3.1) Method

Select from:

Employee engagement

(7.55.3.2) Comment

Communications Campaign "Acting now." with clear tone from the top to increase the awareness for climate protection and sustainable development in all areas of the company. Examples of further awareness and engagement initiatives and programs:•GreenBox@ZF - New products and services for a sustainable future: Support and empower employees to develop innovative ideas in a structured way• ZF Excellence Award Category "Sustainability"•Trainings •Dedicated Sustainability Leads in all divisions and the most material corporate domain functions.•ZF idea management enables every employee to indicate ideas of improvement regarding climate change as improvement in energy efficiency and CO2 emission reduction. When the idea was implemented, it will be awarded.

Row 6

(7.55.3.1) Method

Select from:

Lower return on investment (ROI) specification

(7.55.3.2) Comment

*Extended return periods for all efficiency measures to achieve energy efficiency targets.
[Add row]*

(7.74) Do you classify any of your existing goods and/or services as low-carbon products?

Select from:

Yes

(7.74.1) Provide details of your products and/or services that you classify as low-carbon products.

Row 1

(7.74.1.1) Level of aggregation

Select from:

Group of products or services

(7.74.1.2) Taxonomy used to classify product(s) or service(s) as low-carbon

Select from:

Green Bond Principles (ICMA)

(7.74.1.3) Type of product(s) or service(s)

Power

Other, please specify :Renewable energy & clean transportation

(7.74.1.4) Description of product(s) or service(s)

Renewable Energy and clean transportation: ZF technology in wind turbine gear units (renewable energy) and pure battery-electric vehicles (clean transportation)

(7.74.1.5) Have you estimated the avoided emissions of this low-carbon product(s) or service(s)

Select from:

Yes

(7.74.1.6) Methodology used to calculate avoided emissions

Select from:

The Avoided Emissions Framework (AEF)

(7.74.1.7) Life cycle stage(s) covered for the low-carbon product(s) or services(s)

Select from:

Use stage

(7.74.1.8) Functional unit used

Renewable Energy and clean transportation: ZF technology in wind turbine gear units (renewable energy) and pure battery-electric vehicles (clean transportation)

See ZF Green Finance Report 2024:

https://www.zf.com/mobile/en/company/investor_relations/sustainable_finance/sustainable_finance.html#sfreports_acc_493021_0

(7.74.1.9) Reference product/service or baseline scenario used

Renewable Energy: Wind turbine with world emission factor of 371.8 gCO₂/kWh according to the International Energy Agency's (IEA) Policy and Sustainable Development Scenario. Clean Transportation: WLTP used for consumption data (well-to-wheel). Fuel emission factor (diesel) assumed for internal combustion engine (ICE) with 2.5 kg CO₂ per liter. Electricity factor for battery electric vehicles (BEV) used with 371.8 g CO₂ per kWh derived from IEA. See ZF Green Finance Report 2024.

(7.74.1.10) Life cycle stage(s) covered for the reference product/service or baseline scenario

Select from:

Use stage

(7.74.1.11) Estimated avoided emissions (metric tons CO₂e per functional unit) compared to reference product/service or baseline scenario

16637655

(7.74.1.12) Explain your calculation of avoided emissions, including any assumptions

Renewable Energy: With respect to the development, manufacture, and distribution of wind turbine gear units, three indicators are considered: the number of wind turbines covered, annual renewable energy generated and estimate of annual GHG avoided/reduced during use. In 2023, ZF covered approximately 3,167 wind

turbine gear units and contributed to an installed capacity of approximately 14.006 MW, considering the wind turbine gear units respective power classes. As the actual capacity of a wind turbine is particularly dependent on the location and weather conditions (e.g., wind speed, solar irradiation), the installed capacity was adjusted by a technical efficiency factor of 35%, leading to an annual renewable energy generated of 42,942,396MWh. Using a world emission factor of 371.8g CO2 per kWh, derived from the International Energy Agency (IEA)s Policy and Sustainable Development Scenario, ZF estimates to have avoided 15,965,983t CO2. Clean Transportation: With respect to the development, manufacture, and distribution of products of pure battery electric vehicles, ZF committed to report on the estimate of annual GHG emissions avoided/reduced during use as impact indicator. ZF's electric vehicle business delivers to passenger cars, commercial vehicles, and material handling systems, on which the calculation of the estimate of annual GHG emissions avoided/reduced during the use phase of the battery electric vehicle was based on. ZF refers to the VDA lifetime distance of the respective vehicle classes in the WLTP driving cycle for passenger cars/VECTO driving cycle for commercial vehicles and customer product specification for material handling systems and assumes that the ZF equipped vehicles (BEV, no hybrids) in 2023 replace internal combustion engines (ICE) vehicles. Both vehicle types generate well-to-wheel emissions, stemming from the use phase of the respective vehicles of their lifetime. For ICE vehicles they originate from fuel combustion, while for BEVs from charging the battery. Following the guidelines of the GHG Protocol Standard, the emission were calculated based on a weight-based approach. In 2023, ZF estimates to have avoided 671,682 t CO2. 15,965,983 and 671,682 sum up to the estimated avoided 16,637,655 t CO2. Percentage of revenue generated from low-carbon products is rounded. See ZF Green Finance Report 2024: https://www.zf.com/mobile/en/company/investor_relations/sustainable_finance/sustainable_finance.html#sfreports_acc_493021_0

(7.74.1.13) Revenue generated from low-carbon product(s) or service(s) as % of total revenue in the reporting year

3

[Add row]

(7.79) Has your organization canceled any project-based carbon credits within the reporting year?

Select from:

No

C9. Environmental performance - Water security

(9.1) Are there any exclusions from your disclosure of water-related data?

Select from:

No

(9.2) Across all your operations, what proportion of the following water aspects are regularly measured and monitored?

Water withdrawals – total volumes

(9.2.1) % of sites/facilities/operations

Select from:

76-99

(9.2.2) Frequency of measurement

Select from:

Quarterly

(9.2.3) Method of measurement

water meter, Invoice

(9.2.4) Please explain

There are only a few small service locations/ office branches that have flat-rate rental contracts and therefore cannot break down water data separately. Production sites are obliged to have a site-entrance meter installed. Figures are measured at least 4 times a year due to internal reporting obligations. But the frequency is most of the time higher at the locations.

Water withdrawals – volumes by source

(9.2.1) % of sites/facilities/operations

Select from:

76-99

(9.2.2) Frequency of measurement

Select from:

Quarterly

(9.2.3) Method of measurement

water meter, Invoice

(9.2.4) Please explain

There are only a few small service locations/ office branches that have flat-rate rental contracts and therefore cannot break down water data separately. Production sites are obliged to have a site-entrance meter installed. Figures are measured at least 4 times a year due to internal reporting obligations. But the frequency is most of the time higher at the locations.

Water withdrawals quality

(9.2.1) % of sites/facilities/operations

Select from:

76-99

(9.2.2) Frequency of measurement

Select from:

Quarterly

(9.2.3) Method of measurement

(9.2.4) Please explain

The methods that are common and (legally) accepted for the parameters to be measured.

Water discharges – total volumes

(9.2.1) % of sites/facilities/operations

Select from:

76-99

(9.2.2) Frequency of measurement

Select from:

Quarterly

(9.2.3) Method of measurement

water meter, invoice, water balance

(9.2.4) Please explain

There are only a few small service locations/office branches that have flat-rate rental contracts and therefore cannot break down water data separately. Figures are measured at least 4 times a year due to internal reporting obligations. But the frequency is most of the time higher at the locations.

Water discharges – volumes by destination

(9.2.1) % of sites/facilities/operations

Select from:

76-99

(9.2.2) Frequency of measurement

Select from:

Quarterly

(9.2.3) Method of measurement

water meter, invoice, water balance

(9.2.4) Please explain

There are only a few small service locations/office branches that have flat-rate rental contracts and therefore cannot break down water data separately. Figures are measured at least 4 times a year due to internal reporting obligations. But the frequency is most of the time higher at the locations.

Water discharges – volumes by treatment method

(9.2.1) % of sites/facilities/operations

Select from:

76-99

(9.2.2) Frequency of measurement

Select from:

Quarterly

(9.2.3) Method of measurement

water meter, water balance

(9.2.4) Please explain

All sites have a permit for their wastewater-discharge (treatment method depends on wastewater-type and legal requirements). They measure the volume of treated wastewater on-site for documentation and because of different legal requirements. The data are not aggregated on group-level.

Water discharge quality – by standard effluent parameters

(9.2.1) % of sites/facilities/operations

Select from:

76-99

(9.2.2) Frequency of measurement

Select from:

Unknown

(9.2.3) Method of measurement

testing method chosen according to legal requirement. partially measured by analytics, not applicable for all locations

(9.2.4) Please explain

All sites which have a permit for discharge of wastewater measure its effluents regularly according to the respective legal requirements (water discharge permit). The data are not aggregated on group-level.

Water discharge quality – emissions to water (nitrates, phosphates, pesticides, and/or other priority substances)

(9.2.1) % of sites/facilities/operations

Select from:

76-99

(9.2.2) Frequency of measurement

Select from:

Unknown

(9.2.3) Method of measurement

testing method chosen according to legal requirement

(9.2.4) Please explain

Discharge parameters are measured regularly and limits are approved by the respective authorities. According to the measured parameter ZF is not a major water polluter. The data are not aggregated on group-level.

Water discharge quality – temperature

(9.2.1) % of sites/facilities/operations

Select from:

51-75

(9.2.2) Frequency of measurement

Select from:

Unknown

(9.2.3) Method of measurement

testing method chosen according to legal requirement, e.g. measuring of input and output temperature

(9.2.4) Please explain

All sites which have a permit for direct discharge of wastewater into a receiving water in connection with a temperature limit, measure and document the quantity and temperature. The data are not aggregated on group-level.

Water consumption – total volume

(9.2.1) % of sites/facilities/operations

Select from:

76-99

(9.2.2) Frequency of measurement

Select from:

Quarterly

(9.2.3) Method of measurement

calculated (data from Invoice, water meter, waterbalance)

(9.2.4) Please explain

There are only a few small service locations that have flat-rate rental contracts and therefore cannot break down water data separately. Figures are measured at least 4 times a year due to internal reporting obligations. But the frequency is most of the time higher at the locations.

Water recycled/reused

(9.2.1) % of sites/facilities/operations

Select from:

1-25

(9.2.2) Frequency of measurement

Select from:

Quarterly

(9.2.3) Method of measurement

water meter, water balance, mathematical approach

(9.2.4) Please explain

All locations with facilities for water recycling / water reuse measure, monitor and report water volumes. Figures are measured at least 4 times a year due to internal reporting obligations. But the frequency is most of the time higher at the locations.

The provision of fully-functioning, safely managed WASH services to all workers

(9.2.1) % of sites/facilities/operations

Select from:

100%

(9.2.2) Frequency of measurement

Select from:

Continuously

(9.2.3) Method of measurement

acc. to risk assesment and legal requirements, internal audits. ZF ensures that hygienic requirements are continuously fulfilled in all our locations.

(9.2.4) Please explain

*All sites offer WASH services for workers, ensured by obligatory risk assessment on a regular basis. The data are not aggregated on group-level.
[Fixed row]*

(9.2.2) What are the total volumes of water withdrawn, discharged, and consumed across all your operations, how do they compare to the previous reporting year, and how are they forecasted to change?

Total withdrawals

(9.2.2.1) Volume (megaliters/year)

9721

(9.2.2.2) Comparison with previous reporting year

Select from:

Higher

(9.2.2.3) Primary reason for comparison with previous reporting year

Select from:

Increase/decrease in business activity

(9.2.2.4) Five-year forecast

Select from:

Lower

(9.2.2.5) Primary reason for forecast

Select from:

Increase/decrease in efficiency

(9.2.2.6) Please explain

corporate water target aims for improving water efficiency

Total discharges

(9.2.2.1) Volume (megaliters/year)

8424

(9.2.2.2) Comparison with previous reporting year

Select from:

Higher

(9.2.2.3) Primary reason for comparison with previous reporting year

Select from:

Increase/decrease in business activity

(9.2.2.4) Five-year forecast

Select from:

Lower

(9.2.2.5) Primary reason for forecast

Select from:

Increase/decrease in efficiency

(9.2.2.6) Please explain

corporate water target aims for improving water efficiency

Total consumption

(9.2.2.1) Volume (megaliters/year)

1297

(9.2.2.2) Comparison with previous reporting year

Select from:

Lower

(9.2.2.3) Primary reason for comparison with previous reporting year

Select from:

Increase/decrease in efficiency

(9.2.2.4) Five-year forecast

Select from:

Lower

(9.2.2.5) Primary reason for forecast

Select from:

Increase/decrease in efficiency

(9.2.2.6) Please explain

corporate water target aims for improving water efficiency
[Fixed row]

(9.2.4) Indicate whether water is withdrawn from areas with water stress, provide the volume, how it compares with the previous reporting year, and how it is forecasted to change.

(9.2.4.1) Withdrawals are from areas with water stress

Select from:

Yes

(9.2.4.2) Volume withdrawn from areas with water stress (megaliters)

79

(9.2.4.3) Comparison with previous reporting year

Select from:

Lower

(9.2.4.4) Primary reason for comparison with previous reporting year

Select from:

- Facility closure

(9.2.4.5) Five-year forecast

Select from:

- Much higher

(9.2.4.6) Primary reason for forecast

Select from:

- Change in accounting methodology

(9.2.4.7) % of total withdrawals that are withdrawn from areas with water stress

0.81

(9.2.4.8) Identification tool

Select all that apply

- WWF Water Risk Filter

(9.2.4.9) Please explain

All locations must be re-assessed with the new ESRS-disclosure requirements taken into consideration. This will mostly lead to an increased amount of affected locations that are considered as located in areas with water stress. (Comment: one facility sold reported as "facility closure")

[Fixed row]

(9.2.7) Provide total water withdrawal data by source.

Fresh surface water, including rainwater, water from wetlands, rivers, and lakes

(9.2.7.1) Relevance

Select from:

Relevant

(9.2.7.2) Volume (megaliters/year)

5175

(9.2.7.3) Comparison with previous reporting year

Select from:

Lower

(9.2.7.4) Primary reason for comparison with previous reporting year

Select from:

Increase/decrease in efficiency

(9.2.7.5) Please explain

ZF has the target to reduce water withdrawal by 1% annually relative to sales for all locations. For production sites in areas of water-stress, the goal is to reduce water withdrawal by 2% annually relative to sales. ZF aims to constantly improve water efficiency.

Brackish surface water/Seawater

(9.2.7.1) Relevance

Select from:

Not relevant

(9.2.7.5) Please explain

ZF does not use brackish surface water/seawater for water withdrawal.

Groundwater – renewable

(9.2.7.1) Relevance

Select from:

Relevant

(9.2.7.2) Volume (megaliters/year)

937

(9.2.7.3) Comparison with previous reporting year

Select from:

Higher

(9.2.7.4) Primary reason for comparison with previous reporting year

Select from:

Facility expansion

(9.2.7.5) Please explain

Some new locations use (renewable) groundwater as its main water source.

Groundwater – non-renewable

(9.2.7.1) Relevance

Select from:

Not relevant

(9.2.7.5) Please explain

ZF does not rely on non-renewable groundwater for water withdrawal.

Produced/Entrained water

(9.2.7.1) Relevance

Select from:

Not relevant

(9.2.7.5) Please explain

ZF does not rely on produced/entrained water for water withdrawal.

Third party sources

(9.2.7.1) Relevance

Select from:

Relevant

(9.2.7.2) Volume (megaliters/year)

3609

(9.2.7.3) Comparison with previous reporting year

Select from:

Lower

(9.2.7.4) Primary reason for comparison with previous reporting year

Select from:

Increase/decrease in efficiency

(9.2.7.5) Please explain

ZF has the target to reduce water withdrawal by 1% annually relative to sales for all locations. For production sites in areas of water-stress, the goal is to reduce water withdrawal by 2% annually relative to sales. ZF aims to constantly improve water efficiency.
[Fixed row]

(9.2.8) Provide total water discharge data by destination.

Fresh surface water

(9.2.8.1) Relevance

Select from:

Relevant

(9.2.8.2) Volume (megaliters/year)

4869

(9.2.8.3) Comparison with previous reporting year

Select from:

Higher

(9.2.8.4) Primary reason for comparison with previous reporting year

Select from:

Increase/decrease in efficiency

(9.2.8.5) Please explain

ZF targets to decrease water discharge and to increase water efficiency.

Brackish surface water/seawater

(9.2.8.1) Relevance

Select from:

Not relevant

(9.2.8.5) Please explain

Brackish surface water/seawater does not represent a water discharge destination for ZF.

Groundwater

(9.2.8.1) Relevance

Select from:

Not relevant

(9.2.8.5) Please explain

Groundwater does not represent a water discharge destination for ZF.

Third-party destinations

(9.2.8.1) Relevance

Select from:

Relevant

(9.2.8.2) Volume (megaliters/year)

3555

(9.2.8.3) Comparison with previous reporting year

Select from:

Higher

(9.2.8.4) Primary reason for comparison with previous reporting year

Select from:

Increase/decrease in efficiency

(9.2.8.5) Please explain

*ZF targets to decrease water discharge and to increase water efficiency.
[Fixed row]*

(9.2.9) Within your direct operations, indicate the highest level(s) to which you treat your discharge.

Tertiary treatment

(9.2.9.1) Relevance of treatment level to discharge

Select from:

Relevant but volume unknown

(9.2.9.6) Please explain

Wastewater at ZF is usually discharged into the public sewer system after treatment at local wastewater plants. Breakdown of tertiary, secondary and primary treatment are collected on site level and not consolidated on group level. Wastewater loads are managed at local level, with relevant deviations from legal requirements and permits being reviewed at Group level through audits and management reviews.

Secondary treatment

(9.2.9.1) Relevance of treatment level to discharge

Select from:

Relevant but volume unknown

(9.2.9.6) Please explain

Wastewater at ZF is usually discharged into the public sewer system after treatment at local wastewater plants. Breakdown of tertiary, secondary and primary treatment are collected on site level and not consolidated on group level. Wastewater loads are managed at local level, with relevant deviations from legal requirements and permits being reviewed at Group level through audits and management reviews.

Primary treatment only

(9.2.9.1) Relevance of treatment level to discharge

Select from:

Relevant but volume unknown

(9.2.9.6) Please explain

Wastewater at ZF is usually discharged into the public sewer system after treatment at local wastewater plants. Breakdown of tertiary, secondary and primary treatment are collected on site level and not consolidated on group level. Wastewater loads are managed at local level, with relevant deviations from legal requirements and permits being reviewed at Group level through audits and management reviews.

Discharge to the natural environment without treatment

(9.2.9.1) Relevance of treatment level to discharge

Select from:

Relevant but volume unknown

(9.2.9.6) Please explain

Direct drainage into surface water only occurs at a few locations where public infrastructure is lacking or where ZF is allowed to use the corresponding surface water for cooling purposes. In these cases, water is treated using state-of-the-art technology and is drained directly with the approval of the authorities. Threshold values are monitored by ZF and the authorities.

Discharge to a third party without treatment

(9.2.9.1) Relevance of treatment level to discharge

Select from:

Relevant but volume unknown

(9.2.9.6) Please explain

Wastewater at ZF is usually discharged into the public sewer system after treatment at local wastewater plants. Breakdown of tertiary, secondary and primary treatment are collected on site level and not consolidated on group level. Wastewater loads are managed at local level, with relevant deviations from legal requirements and permits being reviewed at Group level through audits and management reviews. ZF relies for some activities on cooling water. Cooling water is not contaminated by industrial processes and does not need further treatment before discharge. We allocate cooling water to "Discharge to a third party without treatment".

Other

(9.2.9.1) Relevance of treatment level to discharge

Select from:

Not relevant

(9.2.9.6) Please explain

*Other water discharging activities are not applicable for ZF operations.
[Fixed row]*

(9.2.10) Provide details of your organization's emissions of nitrates, phosphates, pesticides, and other priority substances to water in the reporting year.

(9.2.10.1) Emissions to water in the reporting year (metric tons)

0

(9.2.10.2) Categories of substances included

Select all that apply

Nitrates

Phosphates

(9.2.10.4) Please explain

ZF is not yet reporting emissions to water on a corporate level, but on local level where legally required. ZF is conducting an analysis of water-related requirements of the Corporate Sustainability Reporting Directive (CSRD). The assessment includes an indication of emissions to water of priority substances, which helps us to understand, manage and reduce emissions of nitrates, phosphates and other priority substances. The outcome of the analysis may determine future corporate disclosure of relevant emissions to water. Given the ongoing assessment, we set the emissions to water in the reporting year to "0" metric tons.

[Fixed row]

(9.3) In your direct operations and upstream value chain, what is the number of facilities where you have identified substantive water-related dependencies, impacts, risks, and opportunities?

Direct operations

(9.3.1) Identification of facilities in the value chain stage

Select from:

No, we have not assessed this value chain stage for facilities with water-related dependencies, impacts, risks, and opportunities, but we are planning to do so in the next 2 years

(9.3.4) Please explain

For ZF, water withdrawal for production at all ZF locations is a major environmental issue since the use of freshwater is increasingly restricted due to climate change, for instance. This is another reason why the company is committed to installing water-saving equipment that exceeds statutory requirements. The revised ZF Circularity Framework focuses on closing water circuits, for example in cooling systems. Some of ZF's production locations, e.g., in Brazil, Mexico, India and China, are in areas with significant water scarcity or with significant water shortage. Permits for water withdrawal for production purposes are occasionally restricted. This may result in a need for increased investment or expenses to cover the technical modernization of production equipment. In 2020, ZF assessed all locations for their water risk. An updated assessment of all locations is currently being prepared. Completion is planned for 2024 in order to take into account definitions and specifications of CSRD reporting. For production sites in areas of water-stress, the goal is to reduce water withdrawal by 2% annually relative to sales. For all other

locations, a 1% reduction is being targeted on an annual basis. The base year for both targets is 2019. All water sources will be considered when assessing target achievement. Progress is monitored and managed in line with ZF's environmental management system at individual locations and at Group level.

Upstream value chain

(9.3.1) Identification of facilities in the value chain stage

Select from:

No, we have not assessed this value chain stage for facilities with water-related dependencies, impacts, risks, and opportunities, but we are planning to do so in the next 2 years

(9.3.4) Please explain

By conducting a qualitative (in 2022) and quantitative scenario analysis (ongoing), we improve our understanding of climate-related risks & opportunities impact on the entire value chain. Initial results: Physical: - Supply chain: Increasing climate hazards can lead to asset damages (AD) and business interruptions (BI) at our 12,000 suppliers (for production materials) and can negatively affect transport routes (e.g. floodings of streets). Yet, we see that those interruptions often occur very regionally and temporarily, so that alternative suppliers or routes can be found in our global network.

[Fixed row]

(9.5) Provide a figure for your organization's total water withdrawal efficiency.

(9.5.1) Revenue (currency)

46628

(9.5.2) Total water withdrawal efficiency

4.80

(9.5.3) Anticipated forward trend

ZF has the target to reduce water withdrawal by 1% annually relative to sales for all locations. For production sites in areas of water-stress, the goal is to reduce water withdrawal by 2% annually relative to sales. Given that ZF aims to constantly improve water efficiency, we expect a positive trend (revenue in million EUR).

[Fixed row]

(9.13) Do any of your products contain substances classified as hazardous by a regulatory authority?

	Products contain hazardous substances
	Select from: <input checked="" type="checkbox"/> Yes

[Fixed row]

(9.13.1) What percentage of your company's revenue is associated with products containing substances classified as hazardous by a regulatory authority?

Row 1

(9.13.1.1) Regulatory classification of hazardous substances

Select from:

- Candidate List of Substances of Very High Concern for Authorisation above 0.1% by weight (EU Regulation)

(9.13.1.2) % of revenue associated with products containing substances in this list

Select from:

- Less than 10%

(9.13.1.3) Please explain

This is a rough estimation based on ongoing evaluation. In general, ZF aims to reduce and minimize hazardous substances in operations and products. Preventive technical measures in place at the locations ensure that hazardous substances cannot seep into the ground and endanger groundwater, even in the event of a release, for example resulting from an incident. There is a Group-wide reporting obligation in the eventuality of a release. Furthermore, ZF adopted the substance declarations and prohibitions of the Global Automotive Declarable Substance List (GADSL) which defines requirements for prohibited and/or declarable substances.
[Add row]

(9.14) Do you classify any of your current products and/or services as low water impact?

(9.14.1) Products and/or services classified as low water impact

Select from:

No, and we do not plan to address this within the next two years

(9.14.3) Primary reason for not classifying any of your current products and/or services as low water impact

Select from:

Judged to be unimportant, explanation provided

(9.14.4) Please explain

Within the ZF materiality analysis water use in production was identified as a field of action with relevance for ZF business, but with no severity with need for product classification.

[Fixed row]

(9.15) Do you have any water-related targets?

Select from:

Yes

(9.15.1) Indicate whether you have targets relating to water pollution, water withdrawals, WASH, or other water-related categories.

Water pollution

(9.15.1.1) Target set in this category

Select from:

No, and we do not plan to within the next two years

(9.15.1.2) Please explain

The pollution of the discharged wastewater is regulated via wastewater discharge permits and controlled by our on-site experts and by local authorities. ZF plants have wastewater treatment facilities installed, if necessary.

Water withdrawals

(9.15.1.1) Target set in this category

Select from:

Yes

Water, Sanitation, and Hygiene (WASH) services

(9.15.1.1) Target set in this category

Select from:

No, and we do not plan to within the next two years

(9.15.1.2) Please explain

All sites offer WASH services for workers, ensured by a mandatory risk assessment conducted on a regular basis.

Other

(9.15.1.1) Target set in this category

Select from:

- No, and we do not plan to within the next two years

(9.15.1.2) Please explain

No other water-related impacts have been identified for ZF which require target setting for mitigation and/or control.

[Fixed row]

(9.15.2) Provide details of your water-related targets and the progress made.

Row 1

(9.15.2.1) Target reference number

Select from:

- Target 1

(9.15.2.2) Target coverage

Select from:

- Other, please specify :ZF locations in areas where water scarcity determines public life

(9.15.2.3) Category of target & Quantitative metric

Water withdrawals

- Reduction in withdrawals per revenue

(9.15.2.4) Date target was set

12/30/2022

(9.15.2.5) End date of base year

12/30/2019

(9.15.2.6) Base year figure

88.6

(9.15.2.7) End date of target year

12/30/2025

(9.15.2.8) Target year figure

79.7

(9.15.2.9) Reporting year figure

88.9

(9.15.2.10) Target status in reporting year

Select from:

Underway

(9.15.2.11) % of target achieved relative to base year

-3

(9.15.2.12) Global environmental treaties/initiatives/ frameworks aligned with or supported by this target

Select all that apply

Sustainable Development Goal 6

(9.15.2.13) Explain target coverage and identify any exclusions

Target covers ZF locations which had been identified as located in water-stress areas according to the assessment conducted in 2020 by using the WWF water risk filter.

(9.15.2.14) Plan for achieving target, and progress made to the end of the reporting year

Target was not on track in reporting year due to construction work at one site for which a lot of water was being used for dust-control which was legally required. It is expected to be back on track regarding the target achievement after the construction work is finished.

(9.15.2.16) Further details of target

n/a

Row 2

(9.15.2.1) Target reference number

Select from:

Target 2

(9.15.2.2) Target coverage

Select from:

Organization-wide (direct operations only)

(9.15.2.3) Category of target & Quantitative metric

Water withdrawals

Reduction in withdrawals per revenue

(9.15.2.4) Date target was set

12/30/2022

(9.15.2.5) End date of base year

12/30/2019

(9.15.2.6) Base year figure

294

(9.15.2.7) End date of target year

12/30/2025

(9.15.2.8) Target year figure

279.3

(9.15.2.9) Reporting year figure

208

(9.15.2.10) Target status in reporting year

Select from:

Achieved

(9.15.2.11) % of target achieved relative to base year

585

(9.15.2.12) Global environmental treaties/initiatives/ frameworks aligned with or supported by this target

Select all that apply

Sustainable Development Goal 6

(9.15.2.13) Explain target coverage and identify any exclusions

Target scope represents overall water target for all ZF locations.

(9.15.2.15) Actions which contributed most to achieving or maintaining this target

Actions include e.g., tap water reduction, demand control, improvement of the water infrastructure (e.g., replacement of old water pipes)

(9.15.2.16) Further details of target

n/a

[Add row]

C11. Environmental performance - Biodiversity

(11.2) What actions has your organization taken in the reporting year to progress your biodiversity-related commitments?

(11.2.1) Actions taken in the reporting period to progress your biodiversity-related commitments

Select from:

- Yes, we are taking actions to progress our biodiversity-related commitments

(11.2.2) Type of action taken to progress biodiversity- related commitments

Select all that apply

- Education & awareness
 Law & policy

[Fixed row]

(11.3) Does your organization use biodiversity indicators to monitor performance across its activities?

	Does your organization use indicators to monitor biodiversity performance?
	Select from: <input checked="" type="checkbox"/> No, we do not use indicators, but plan to within the next two years

[Fixed row]

(11.4) Does your organization have activities located in or near to areas important for biodiversity in the reporting year?

Legally protected areas

(11.4.1) Indicate whether any of your organization's activities are located in or near to this type of area important for biodiversity

Select from:

Data not available

(11.4.2) Comment

In 2024 we started the investigation based on WWF Biodiversity Risk Filter; First step: focus on ZF sites globally with a Risk 3,4 (6.1 protected area and/ or 6.2 KBA). Investigation ongoing for sites identified with WWF Biodiversity Risk Filter with risk 3,4 (6.1 protected area and/ or 6.2 KBA).

UNESCO World Heritage sites

(11.4.1) Indicate whether any of your organization's activities are located in or near to this type of area important for biodiversity

Select from:

Data not available

(11.4.2) Comment

In 2024 we started the investigation based on WWF Biodiversity Risk Filter; First step: focus on ZF sites globally with a Risk 3,4 (6.1 protected area and/ or 6.2 KBA). Investigation ongoing for sites identified with WWF Biodiversity Risk Filter with risk 3,4 (6.1 protected area and/ or 6.2 KBA).

UNESCO Man and the Biosphere Reserves

(11.4.1) Indicate whether any of your organization's activities are located in or near to this type of area important for biodiversity

Select from:

Not assessed

(11.4.2) Comment

Not yet considered as relevant, as Integrated Biodiversity Assessment Tool IBAT currently includes natural World Heritage sites only, and no cultural World Heritage sites (yet).

Ramsar sites

(11.4.1) Indicate whether any of your organization's activities are located in or near to this type of area important for biodiversity

Select from:

Data not available

(11.4.2) Comment

In 2024 we started the investigation based on WWF Biodiversity Risk Filter; First step: focus on ZF sites globally with a Risk 3,4 (6.1 protected area and/ or 6.2 KBA). Investigation ongoing for sites identified with WWF Biodiversity Risk Filter with risk 3,4 (6.1 protected area and/ or 6.2 KBA).

Key Biodiversity Areas

(11.4.1) Indicate whether any of your organization's activities are located in or near to this type of area important for biodiversity

Select from:

Data not available

(11.4.2) Comment

In 2024 we started the investigation based on WWF Biodiversity Risk Filter; First step: focus on ZF sites globally with a Risk 3,4 (6.1 protected area and/ or 6.2 KBA). Investigation ongoing for sites identified with WWF Biodiversity Risk Filter with risk 3,4 (6.1 protected area and/ or 6.2 KBA).

Other areas important for biodiversity

(11.4.1) Indicate whether any of your organization's activities are located in or near to this type of area important for biodiversity

Select from:

Data not available

(11.4.2) Comment

Natura 2000: A European network of protected sites under the European Habitats and Birds Directives, aiming to protect the most valuable and threatened European habitats and species.

[Fixed row]

C13. Further information & sign off

(13.1) Indicate if any environmental information included in your CDP response (not already reported in 7.9.1/2/3, 8.9.1/2/3/4, and 9.3.2) is verified and/or assured by a third party?

	Other environmental information included in your CDP response is verified and/or assured by a third party
	Select from: <input checked="" type="checkbox"/> Third-party verification/assurance is currently in progress

[Fixed row]

(13.1.1) Which data points within your CDP response are verified and/or assured by a third party, and which standards were used?

Row 1

(13.1.1.1) Environmental issue for which data has been verified and/or assured

Select all that apply

Climate change

(13.1.1.2) Disclosure module and data verified and/or assured

Environmental performance – Climate change

Product footprint

(13.1.1.3) Verification/assurance standard

General standards

Other general verification standard, please specify :Cradle to Cradle Certified™ Product: Gold

(13.1.1.4) Further details of the third-party verification/assurance process

ZF has successfully achieved Cradle to Cradle Certified Gold for the product(s) under the name: Clutch Cover M, MZ, MFZ, MFZ2, G, GM, GMF, GMFZ, GMFZ2, HVB, HBX, XN, MF362, MF395, MF430. ZF received the German Sustainability Award 2023 in the automotive industry category. ZF was awarded for its commitment to sustainable recycling management, notably for the the remanufacturing site in Bielefeld, which specializes in the remanufacturing of powertrain modules for vehicle manufacturers and the global aftermarket. ZF has been using remanufacturing procedures for decades and for this purpose has established a global return system. Various parts such as clutch covers, clutch discs, torque converters, ConAct are remanufactured for industrial use. Remanufacturing reduces ZF's demand for raw materials by up to 90% while saving about 90% in energy compared to manufacturing a new product. Industrial remanufacturing is currently implemented at 15 ZF locations. The Bielefeld (Germany) location alone sorts and remanufactures around 50 tons of cores per day. In total, several thousand products of all kinds – from automatic transmissions to various types of mechatronics and hydraulic control units – are remanufactured every year. This does not only prevent many components from being scrapped too early. Their remanufacturing also extends the service life of many vehicles that have long since been phased out of volume production. Within ZF's sustainability strategy, the remanufactured ZF product portfolio shall be expanded in order to achieve a further reduction of product-related emissions. ZF's service strategy and the ZF Aftermarket portfolio consider various dimensions of the circular economy, such as product recycling, remanufacturing and CO2 equivalents when evaluating total cost of ownership and serviceability.

(13.1.1.5) Attach verification/assurance evidence/report (optional)

ZF_Fr_Clutc_Gold_CERT6318_2023-07-18_135558.pdf

Row 2

(13.1.1.1) Environmental issue for which data has been verified and/or assured

Select all that apply

Climate change

(13.1.1.2) Disclosure module and data verified and/or assured

Environmental performance – Climate change

Product footprint

(13.1.1.3) Verification/assurance standard

General standards

Other general verification standard, please specify :Cradle to Cradle Certified™ Product: Gold

(13.1.1.4) Further details of the third-party verification/assurance process

ZF Friedrichshafen AG has successfully achieved Cradle to Cradle Certified Gold for the product(s) under the name: Clutch disks with diameter 350 – 430 mm with and without predamper The following products or variations are excluded from the certification: products with glued parts. Cradle to Cradle Certified Products Regarding its products, the ZF Group has been using remanufacturing procedures for decades and for this purpose has established a global return system. Various parts such as clutch covers, clutch discs, torque converters, ConAct are remanufactured for industrial use. Remanufacturing reduces ZF's demand for raw materials by up to 90% while saving about 90% in energy compared to manufacturing a new product. Industrial remanufacturing is currently implemented at 15 ZF locations. The Bielefeld (Germany) location alone sorts and remanufactures around 50 tons of cores per day. In total, several thousand products of all kinds – from automatic transmissions to various types of mechatronics and hydraulic control units – are remanufactured every year. This does not only prevent many components from being scrapped too early. Their remanufacturing also extends the service life of many vehicles that have long since been phased out of volume production. Within the new ESG strategy, the remanufactured ZF product portfolio shall be expanded in order to achieve a further reduction of product-related emissions. ZF's service strategy and the ZF Aftermarket portfolio consider various dimensions of the circular economy, such as product recycling, remanufacturing and CO2 equivalents when evaluating total cost of ownership and serviceability.

(13.1.1.5) Attach verification/assurance evidence/report (optional)

ZF_Fr_Clutc_Gold_CERT7720_2024-07-30_22328.pdf

Row 3

(13.1.1.1) Environmental issue for which data has been verified and/or assured

Select all that apply

Climate change

(13.1.1.2) Disclosure module and data verified and/or assured

Environmental performance – Climate change

- Product footprint

(13.1.1.3) Verification/assurance standard

General standards

- Other general verification standard, please specify :Cradle to Cradle Certified™ Product: Silver

(13.1.1.4) Further details of the third-party verification/assurance process

ZF Friedrichshafen AG has successfully achieved Cradle to Cradle Certified Silver for the product(s) under the name: Clutch Cover MF430E Cradle to Cradle Certified Products Regarding its products, the ZF Group has been using remanufacturing procedures for decades and for this purpose has established a global return system. Various parts such as clutch covers, clutch discs, torque converters, ConAct are remanufactured for industrial use. Remanufacturing reduces ZF's demand for raw materials by up to 90% while saving about 90% in energy compared to manufacturing a new product. Industrial remanufacturing is currently implemented at 15 ZF locations. The Bielefeld (Germany) location alone sorts and remanufactures around 50 tons of cores per day. In total, several thousand products of all kinds – from automatic transmissions to various types of mechatronics and hydraulic control units – are remanufactured every year. This does not only prevent many components from being scrapped too early. Their remanufacturing also extends the service life of many vehicles that have long since been phased out of volume production. Within the new ESG strategy, the remanufactured ZF product portfolio shall be expanded in order to achieve a further reduction of product-related emissions. ZF's service strategy and the ZF Aftermarket portfolio consider various dimensions of the circular economy, such as product recycling, remanufacturing and CO2 equivalents when evaluating total cost of ownership and serviceability.

(13.1.1.5) Attach verification/assurance evidence/report (optional)

ZF_Fr_Clutc_Silve_CERT6419_2023-09-29_16110.pdf

Row 4

(13.1.1.1) Environmental issue for which data has been verified and/or assured

Select all that apply

- Climate change

(13.1.1.2) Disclosure module and data verified and/or assured

Environmental performance – Climate change

- Product footprint

(13.1.1.3) Verification/assurance standard

General standards

- Other general verification standard, please specify :Cradle to Cradle Certified™ Product: Silver

(13.1.1.4) Further details of the third-party verification/assurance process

ZF Friedrichshafen AG has successfully achieved Cradle to Cradle Certified Silver for the product(s) under the name: Dual Mass Flywheel for Commercial Vehicles Cradle to Cradle Certified Products Regarding its products, the ZF Group has been using remanufacturing procedures for decades and for this purpose has established a global return system. Various parts such as clutch covers, clutch discs, torque converters, ConAct are remanufactured for industrial use. Remanufacturing reduces ZF's demand for raw materials by up to 90% while saving about 90% in energy compared to manufacturing a new product. Industrial remanufacturing is currently implemented at 15 ZF locations. The Bielefeld (Germany) location alone sorts and remanufactures around 50 tons of cores per day. In total, several thousand products of all kinds – from automatic transmissions to various types of mechatronics and hydraulic control units – are remanufactured every year. This does not only prevent many components from being scrapped too early. Their remanufacturing also extends the service life of many vehicles that have long since been phased out of volume production. Within the new ESG strategy, the remanufactured ZF product portfolio shall be expanded in order to achieve a further reduction of product-related emissions. ZF's service strategy and the ZF Aftermarket portfolio consider various dimensions of the circular economy, such as product recycling, remanufacturing and CO2 equivalents when evaluating total cost of ownership and serviceability.

(13.1.1.5) Attach verification/assurance evidence/report (optional)

ZF_Fr_Dual_Silve_CERT6539_2024-02-29_19258.pdf

Row 5

(13.1.1.1) Environmental issue for which data has been verified and/or assured

Select all that apply

- Climate change

(13.1.1.2) Disclosure module and data verified and/or assured

Environmental performance – Climate change

- Product footprint

(13.1.1.3) Verification/assurance standard

General standards

- Sustainable Biomass Program (SBP)
- Other general verification standard, please specify :Cradle to Cradle Certified™ Product: Silver

(13.1.1.4) Further details of the third-party verification/assurance process

ZF Friedrichshafen AG has successfully achieved Cradle to Cradle Certified Silver for the product(s) under the name: Torque converter 8HP / 6HP Cradle to Cradle Certified Products Regarding its products, the ZF Group has been using remanufacturing procedures for decades and for this purpose has established a global return system. Various parts such as clutch covers, clutch discs, torque converters, ConAct are remanufactured for industrial use. Remanufacturing reduces ZF's demand for raw materials by up to 90% while saving about 90% in energy compared to manufacturing a new product. Industrial remanufacturing is currently implemented at 15 ZF locations. The Bielefeld (Germany) location alone sorts and remanufactures around 50 tons of cores per day. In total, several thousand products of all kinds – from automatic transmissions to various types of mechatronics and hydraulic control units – are remanufactured every year. This does not only prevent many components from being scrapped too early. Their remanufacturing also extends the service life of many vehicles that have long since been phased out of volume production. Within the new ESG strategy, the remanufactured ZF product portfolio shall be expanded in order to achieve a further reduction of product-related emissions. ZF's service strategy and the ZF Aftermarket portfolio consider various dimensions of the circular economy, such as product recycling, remanufacturing and CO2 equivalents when evaluating total cost of ownership and serviceability.

(13.1.1.5) Attach verification/assurance evidence/report (optional)

ZF_Fr_Torqu_Silve_CERT6529_2024-01-29_153430.pdf

Row 6

(13.1.1.1) Environmental issue for which data has been verified and/or assured

Select all that apply

- Climate change

(13.1.1.2) Disclosure module and data verified and/or assured

Environmental performance – Climate change

- Product footprint

(13.1.1.3) Verification/assurance standard

General standards

- Other general verification standard, please specify :Cradle to Cradle Certified™ Product: Bronze

(13.1.1.4) Further details of the third-party verification/assurance process

ZF Friedrichshafen AG has successfully achieved Cradle to Cradle Certified Bronze for the product(s) under the name: ConAct Cradle to Cradle Certified Products. Regarding its products, the ZF Group has been using remanufacturing procedures for decades and for this purpose has established a global return system. Various parts such as clutch covers, clutch discs, torque converters, ConAct are remanufactured for industrial use. Remanufacturing reduces ZF's demand for raw materials by up to 90% while saving about 90% in energy compared to manufacturing a new product. Industrial remanufacturing is currently implemented at 15 ZF locations. The Bielefeld (Germany) location alone sorts and remanufactures around 50 tons of cores per day. In total, several thousand products of all kinds – from automatic transmissions to various types of mechatronics and hydraulic control units – are remanufactured every year. This does not only prevent many components from being scrapped too early. Their remanufacturing also extends the service life of many vehicles that have long since been phased out of volume production. Within the new ESG strategy, the remanufactured ZF product portfolio shall be expanded in order to achieve a further reduction of product-related emissions. ZF's service strategy and the ZF Aftermarket portfolio consider various dimensions of the circular economy, such as product recycling, remanufacturing and CO2 equivalents when evaluating total cost of ownership and serviceability.

(13.1.1.5) Attach verification/assurance evidence/report (optional)

ZF_Fr_ConAc_Bronz_CERT6479_2023-11-16_145755.pdf
[Add row]

(13.2) Use this field to provide any additional information or context that you feel is relevant to your organization's response. Please note that this field is optional and is not scored.

	Additional information	Attachment (optional)
	<i>Further climate- and environment-related information can be found in ZF's Annual Report 2023.</i>	<i>ZF_AnnualReport23.pdf</i>

[Fixed row]

(13.3) Provide the following information for the person that has signed off (approved) your CDP response.

(13.3.1) Job title

Senior Vice President Sustainability & EHS

(13.3.2) Corresponding job category

Select from:

Chief Sustainability Officer (CSO)

[Fixed row]

(13.4) Please indicate your consent for CDP to share contact details with the Pacific Institute to support content for its Water Action Hub website.

Select from:

No

