

### C0. Introduction

#### C0.1

#### (C0.1) Give a general description and introduction to your organization.

#### COMPANY PROFILE

ZF is a global technology company. We supply mobility systems for passenger cars, commercial vehicles and industrial technology. In the four technology domains of Vehicle Motion Control, Integrated Safety, Automated Driving and Electric Mobility, ZF offers comprehensive product and software solutions for established vehicle manufacturers and newly emerging transport and mobility service providers.

Digitalization will continue to strongly influence the mobility sector. The paradigm shift caused by software will also change ZF. Therefore, digital networking and automation are key areas of system development at ZF on its path to become a software- and cloud-based company. ZF allows vehicles to see, think and act.

We see climate change as one of the greatest challenges of our time. To provide clean and sustainable mobility, which is also comfortable, safe and affordable, we develop innovative products for Next Generation Mobility. Accordingly, we invest a significant share of our sales in research and development – last year almost eight percent. The ZF Group is represented with 168 production locations in 32 countries. With some 164,900 employees worldwide, ZF reported sales of €43.8 billion in fiscal year 2022.

#### CORPORATE STRUCTURE

ZF Friedrichshafen AG 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.

In order to manage 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 for the business activities 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.

On January 1, 2022, ZF announced the launch of its new commercial vehicle division: Commercial Vehicle Solutions. The new division pools expertise in the commercial vehicle industry and will significantly promote solutions for safe, sustainable and digitalized transport.

Activities in the area of industrial applications are pooled in the Industrial Technology Division and include market segments such as construction and agricultural machinery, wind power, marine propulsion, rail drives, special drives and test systems.

The Aftermarket Division makes our OEM expertise available to the aftermarket, drawing on a global service network of more than 15,000 workshop partners.

#### CORPORATE STRATEGY

Our Next Generation Mobility strategy continues to provide the right framework for our actions. In a difficult environment, it provided important orientation. Our strategic focus is on technology transformation, sustainability and digitalization.

Sustainability is an integral part of this strategy. Central to the implementation of the ZF sustainability strategy "Acting now. Sustainability@ZF" is the goal-oriented cooperation within the Group and with external partners.

In addition to its commitment to the principles of the UN Global Compact, ZF is committed to the Sustainable Development Goals (SDG) of the United Nations. Goal 17, which calls for partnership to achieve the 2030 agenda, underlines the importance of cooperation to meet the complex and diverse challenges of the future.

As a founding member of the First Movers Coalition in the World Economic Forum (WEF), ZF aims to jumpstart the demand for zero-emission technologies and to help these technologies achieve wide-scale market penetration faster. In this way, ZF is supporting the goal of achieving climate neutrality along the value chain by 2040.

To shape human rights due diligence beyond legal obligations, ZF is involved in associations and initiatives, such as the industry dialogue for Business and Human Rights, comprising stakeholders from the automotive industry and civil society.

To efficiently enforce requirements and values in the automotive supply chain, ZF became a member of the Responsible Supply Chain Initiative e.V. (RSCI) last year to advance the development of suitable mechanisms and tools. This collective action helps those involved to progress in a targeted and efficient manner.

# C0.2

(C0.2) State the start and end date of the year for which you are reporting data and indicate whether you will be providing emissions data for past reporting years.

#### Reporting year

Start date

January 1 2022

End date December 31 2022

Indicate if you are providing emissions data for past reporting years

Yes

Select the number of past reporting years you will be providing Scope 1 emissions data for 2 years

Select the number of past reporting years you will be providing Scope 2 emissions data for 2 years

Select the number of past reporting years you will be providing Scope 3 emissions data for 2 years

# C0.3

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(C0.3) Select the countries/areas in which you oper
Argentina
Australia
Austria
Belgium
Brazil
Canada
China
Czechia
Denmark
France
Germany
Hungary
India
Italy
Japan
Malaysia
Mexico
Netherlands
Poland
Portugal
Republic of Korea
Romania
Serbia
Singapore
Slovakia
South Africa
Spain
Switzerland
Taiwan, China
Thailand
Turkey
United Arab Emirates
United Kingdom of Great Britain and Northern Ireland
United States of America
Viet Nam

# C0.4

(C0.4) Select the currency used for all financial information disclosed throughout your response. EUR

# C0.5

(C0.5) Select the option that describes the reporting boundary for which climate-related impacts on your business are being reported. Note that this option should align with your chosen approach for consolidating your GHG inventory. Operational control

CDP

# C0.8

(C0.8) Does your organization have an ISIN code or another unique identifier (e.g., Ticker, CUSIP, etc.)?

Indicate whether you are able to provide a unique identifier for your organization	Provide your unique identifier	
Yes, an ISIN code	DE000A14J7G6	

# C1. Governance

# C1.1

(C1.1) Is there board-level oversight of climate-related issues within your organization? Yes

# C1.1a

# (C1.1a) Identify the position(s) (do not include any names) of the individual(s) on the board with responsibility for climate-related issues.

Position	Responsibilities for climate-related issues
of individual or committee	
Chief Executive Officer (CEO)	The 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.
Other C- Suite Officer	Chief Human Resources Officer 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.
Chief Financial Officer (CFO)	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.
Director on board	Supervisory Board The Supervisory Board continuously monitors the work of the Board of Management and provides advice to the management. The Supervisory Board also supports the strategic advancement of the company. Focus areas of the Supervisory Board include ZF's actions on sustainability and climate. For example, the Supervisory Board decided in 2022 to link the reduction of Scope 1 and Scope 2 emissions as an indicator for the long-term incentive of ZF's Roard of Management and senior management from 2023 onwards.

# C1.1b

#### (C1.1b) Provide further details on the board's oversight of climate-related issues.

Frequency with which	Governance	Scope of	Please explain
climate-related issues	mechanisms into	board-	
are a scheduled	which climate-related	level	
agenda item	issues are integrated	oversight	t la

Frequency with which	Governance	Scope of	Please explain
climate-related issues	mechanisms into	board-	
are a scheduled	which climate-related	level	
agenda item	issues are integrated	oversight	
Scheduled - some	Reviewing and guiding	<not< td=""><td>Board of Management</td></not<>	Board of Management
meetings	annual budgets Overseeing major capital expenditures Overseeing acquisitions, mergers, and divestitures Reviewing innovation/R&D priorities Overseeing and guiding employee incentives Reviewing and guiding	Applicabl e>	ZF's Board of Management deals with climate-related topics on a regular basis. ZF incorporated climate action in the Group's strategy "Next Generation Mobility". Commitment to climate neutrality is an integral part of the company strategy. Climate neutrality in all three emission scopes by 2040 represents one of four key performance indicators in ZF's "Next Generation Mobility" strategy. Moreover, climate action is integrated into the strategic and operative planning of the Group.
	strategy Overseeing and guiding the development of a transition plan Monitoring the implementation of a transition plan Overseeing and guiding scenario analysis Overseeing the setting		
	of corporate targets Monitoring progress towards corporate targets		
	Overseeing and guiding public policy engagement Overseeing value chain		
	Reviewing and guiding the risk management process		
Scheduled – an meetings	neviewing and guiding annual budgets Overseeing major capital expenditures Reviewing and guiding strategy Overseeing and guiding the development of a transition plan Monitoring the implementation of a transition plan Overseeing and guiding scenario analysis Monitoring progress towards corporate targets Overseeing value chain engagement Reviewing and guiding the risk management process Other, please specify (Monitoring investments on divisional level) Reviewing and guiding	<not< td=""><td>In coordinating sustainability topics within the company, the sustainability department is supported by a cross-divisional and cross-functional committee. Comprised of the sustainability leads of all divisions and the most material corporate domain functions, this group meets on a bi-weekly basis. Through the sustainability department the committee regularly reports into senior management up to the Board of Management. The tasks of the sustainability department include: • Developing and implementing an appropriate sustainability strategy and monitoring progress for the ZF Group. In this endeavour, it assists the Board of Management in fulfilling its responsibility for oversight of relevant sustainability and corporate social responsibility aspects of the company. • Regularly reviewing the materiality matrix. • Drawing up an annual review of ZF's sustainability strategy. • Anchoring the top issues in the sustainability program as well as in the respective departmental strategy and management. • Regularly reviewing the appropriateness and effectiveness of ZF's strategy, targets and measures. • Providing regular progress reports on target achievements or related measures. • Monitoring external trends and requirements and recommending additional actions in response. • Within the context of risk management, identifying, assessing and managing risks associated with sustainability issues. • Reviewing and approving the annual Sustainability Report. • Coordinating the internal and external communication of sustainability – stakeholder dialogue.</td></not<>	In coordinating sustainability topics within the company, the sustainability department is supported by a cross-divisional and cross-functional committee. Comprised of the sustainability leads of all divisions and the most material corporate domain functions, this group meets on a bi-weekly basis. Through the sustainability department the committee regularly reports into senior management up to the Board of Management. The tasks of the sustainability department include: • Developing and implementing an appropriate sustainability strategy and monitoring progress for the ZF Group. In this endeavour, it assists the Board of Management in fulfilling its responsibility for oversight of relevant sustainability and corporate social responsibility aspects of the company. • Regularly reviewing the materiality matrix. • Drawing up an annual review of ZF's sustainability strategy. • Anchoring the top issues in the sustainability program as well as in the respective departmental strategy and management. • Regularly reviewing the appropriateness and effectiveness of ZF's strategy, targets and measures. • Providing regular progress reports on target achievements or related measures. • Monitoring external trends and requirements and recommending additional actions in response. • Within the context of risk management, identifying, assessing and managing risks associated with sustainability issues. • Reviewing and approving the annual Sustainability Report. • Coordinating the internal and external communication of sustainability – stakeholder dialogue.
meetings	annual budgets Overseeing major capital expenditures Reviewing and guiding strategy Overseeing and guiding the development of a transition plan Monitoring the implementation of a transition plan Overseeing and guiding scenario analysis Overseeing the setting of corporate targets Monitoring progress towards corporate targets	Applicabl 6>	The Production Executive Group (PEG) is led by the member of ZF's Board of Management responsible for ZF's Operations. Climate-related topics of the PEG include ZF's energy efficiency program.

# C1.1d

#### (C1.1d) Does your organization have at least one board member with competence on climate-related issues?

	Board member(s) have competence on climate- related issues	Criteria used to assess competence of board member(s) on climate-related issues	Primary reason for no board-level competence on climate-related issues	Explain why your organization does not have at least one board member with competence on climate-related issues and any plans to address board-level competence in the future
Rov 1	Yes	ZF's CEO and CHRO have competence on climate-related issues. The CEO is an active member of two initiatives within the World Economic Forum (WEF). The CEO is a founding member of the WEF's First Movers Coalition and a member of the WEF's Alliance of CEO Climate Leaders. ZF's Chief Human Resources Officer (CHRO) holds responsibility within the Board of Management for sustainability and climate-related issues. ZF's CHRO assumes responsibility for Human Resources, Sustainability, Legal Affairs, and Compliance. Under CHRO's leadership over the last years, a comprehensive sustainability strategy and ZF's climate ambition was developed. The target of climate neutrality by 2040 was included in the Group's strategy.	<not applicable=""></not>	<not applicable=""></not>

# C1.2

#### (C1.2) Provide the highest management-level position(s) or committee(s) with responsibility for climate-related issues.

#### Position or committee

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

Climate-related responsibilities of this position Managing annual budgets for climate mitigation activities Providing climate-related employee incentives Developing a climate transition plan Implementing a climate transition plan Integrating climate-related issues into the strategy Conducting climate-related scenario analysis Setting climate-related corporate targets Monitoring progress against climate-related corporate targets Managing public policy engagement that may impact the climate Managing value chain engagement on climate-related issues Assessing climate-related risks and opportunities

#### Coverage of responsibilities

<Not Applicable>

#### **Reporting line**

Other, please specify (Member of the Board of Management)

#### Frequency of reporting to the board on climate-related issues via this reporting line

More frequently than guarterly

#### Please explain

The Chief Human Resources Officer (CHRO) holds responsibility within the Board of Management on climate-related issues. ZF's CHRO assumes responsibility for Human Resources, Sustainability, Legal Affairs, and Compliance. Under CHRO's leadership over the last years, a comprehensive sustainability strategy and ZF's climate ambition was developed. The target of climate neutrality by 2040 was included in ZF's "Next Generation Mobility" strategy.

Position or committee Sustainability committee

#### Climate-related responsibilities of this position

Managing annual budgets for climate mitigation activities Developing a climate transition plan Implementing a climate transition plan Integrating climate-related issues into the strategy Conducting climate-related scenario analysis Setting climate-related corporate targets Monitoring progress against climate-related corporate targets Managing value chain engagement on climate-related issues Assessing climate-related risks and opportunities Managing climate-related risks and opportunities

#### Coverage of responsibilities

<Not Applicable>

# Reporting line

Corporate Sustainability/CSR reporting line

Frequency of reporting to the board on climate-related issues via this reporting line

More frequently than quarterly

## Please explain

The Sustainability Department reports to the member of the Board of Management in charge of Human Resources, Sustainability, Legal Affairs and Compliance. The Sustainability Department is responsible for the development of the group-wide sustainability strategy and for non-financial reporting. The department also assumes the responsibility for ZF's climate strategy. In the coordination of sustainability topics within the company, the Sustainability Department is supported by a cross-functional sustainability steering committee.

This steering committee will be replaced by the Sustainability Steering Board in 2023. It will be responsible for driving the strategic development within ZF and the following tasks:

- Supporting the Board of Management in monitoring relevant sustainability and corporate social responsibility aspects
- Regular reviews of the effectiveness of the sustainability strategy and of agreed targets and measures
- Ensuring that the sustainability strategy is anchored in relevant processes and structures of the company
- Regular reviews of key topics
- In addition, a Sustainability Council is established in 2023 to implement the sustainability and climate strategy in core processes and business activities. Here, mainly the Sustainability Leads of the corporate organization and the divisions will drive the implementation of the strategy and monitor progress.

#### Position or committee

Safety, Health, Environment and Quality committee

#### Climate-related responsibilities of this position

#### Managing annual budgets for climate mitigation activities

Managing major capital and/or operational expenditures related to low-carbon products or services (including R&D)

Developing a climate transition plan

Implementing a climate transition plan

- Conducting climate-related scenario analysis
- Setting climate-related corporate targets
- Monitoring progress against climate-related corporate targets
- Assessing climate-related risks and opportunities

Managing climate-related risks and opportunities

#### Coverage of responsibilities

<Not Applicable>

#### **Reporting line**

Other, please specify (Environment, Health, & Safety and Operations)

## Frequency of reporting to the board on climate-related issues via this reporting line

More frequently than quarterly

#### Please explain

Conserving natural resources and reducing the ecological footprint of the company are fundamental principles of ZF's environmental strategy. ZF's environmental policy includes essential areas of activity such as climate protection, the environmental impact of production, eco-friendly product design and the improvement of environmental performance. The policy is binding for all locations and comprises specific targets for water, emissions, and waste reduction. The global ZF environmental organization covers all divisions, regions, and individual locations. The Corporate Environmental Protection Officer is responsible at Group level, with senior environmental protection officers appointed at divisional level. At plant level, environmental, health and safety officers work on securing environmental protection day by day. ZF has implemented group-wide integrated Environment, Health, & Safety (EHS) standards in its EHS management system, which contain detailed stipulations for strengthening relevant processes throughout the company. A core element of ZF's EHS management system is the evaluation and minimization of potential risks. All locations regularly conduct assessments of environmental aspects and risks for their respective facilities and processes.

# C1.3

#### (C1.3) Do you provide incentives for the management of climate-related issues, including the attainment of targets?

Provide incentives for	Comment
the management of	
climate-related issues	
Yes	In 2022, 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.
	ZF has the strategic ambition to become climate-neutral in all three emission scopes by 2040. 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. To support target
	achievement, ZF links Scope 1 and 2 emission reductions to the long-term incentive.
	Provide incentives for the management of climate-related issues Yes

#### C1.3a

#### (C1.3a) Provide further details on the incentives provided for the management of climate-related issues (do not include the names of individuals).

# Entitled to incentive

Board/Executive board

Type of incentive Monetary reward

# Incentive(s)

Bonus - % of salary Other, please specify (Long-term incentive )

#### Performance indicator(s)

Achievement of climate transition plan KPI Progress towards a climate-related target Achievement of a climate-related target Reduction in absolute emissions

#### Incentive plan(s) this incentive is linked to

Long-Term Incentive Plan

#### Further details of incentive(s)

In 2022, 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.

ZF has the strategic ambition to become climate-neutral in all three emission scopes by 2040. 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. To support target achievement, ZF links Scope 1 and 2 emission reductions to the long-term incentive.

# Explain how this incentive contributes to the implementation of your organization's climate commitments and/or climate transition plan

By linking 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, we contribute to target achievement of our climate ambition to become climate neutral by 2040.

Entitled to incentive

All employees

Type of incentive Non-monetary reward

Incentive(s)

Internal company award Public recognition

#### Performance indicator(s)

Other (please specify) (ZF Excellence Award, category Sustainability)

#### Incentive plan(s) this incentive is linked to

This position does not have an incentive plan

#### Further details of incentive(s)

The ZF Excellence Award is an annual ZF wide project competition, reaching across all geographies and organizational entities of ZF. ZF awards the ZF Excellence Award for the category sustainability for employees' initiatives that have contributed to climate and nature, people or sustainable management. The winners have the opportunity to present their projects to ZF's Top Management and to all ZF employees.

#### Explain how this incentive contributes to the implementation of your organization's climate commitments and/or climate transition plan

Innovative ideas in the field of sustainability awarded by the ZF Excellence Award have the potential to contribute towards the target achievement of ZF's climate ambition. Moreover, the ZF Excellence Award increases employee engagement and contributes to a company culture where action on climate and sustainability assumes a major significance.

## C2. Risks and opportunities

# C2.1

(C2.1) Does your organization have a process for identifying, assessing, and responding to climate-related risks and opportunities? Yes

# C2.1a

#### (C2.1a) How does your organization define short-, medium- and long-term time horizons?

	From	То	Comment
	(years)	(years)	
Short- term	1	3	Definition is based on the time horizon of operational financial planning (current year, next year, 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); Moderate (> 50 mEUR and < 200 mEUR); Significant (> 200 mEUR).
Medium- term	3	7	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.
Long- term	7	15	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.

# C2.1b

#### (C2.1b) How does your organization define substantive financial or strategic impact on your business?

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  $\geq$  25% and an impact  $\geq$  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 ( $\geq$  20 mEUR and <50 mEUR); Moderate ( $\geq$  50 mEUR and < 200 mEUR); Significant ( $\geq$  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", "Health, Life and Limb", "Legal/Compliance Relevance", "Impact on Reputation", "Strategic Impact".

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).

## C2.2

#### (C2.2) Describe your process(es) for identifying, assessing and responding to climate-related risks and opportunities.

Value chain stage(s) covered Direct operations Upstream Downstream

Risk management process Integrated into multi-disciplinary company-wide risk management process

Frequency of assessment More than once a year

Time horizon(s) covered

Short-term Medium-term Long-term

#### Description of process

We run a decentral Enterprise Risk Management (ERM) approach to ensure that risks are managed where they occur. Our risk management process is standardized via a centrally governed ERM Policy that applies to all employees of ZF Friedrichshafen AG and all of its directly and indirectly controlled subsidiaries (collectively, the "ZF Group"). We define risks as deviation from our planning and include opportunities in the ERM approach if they have a direct material link to a risk.

Divisions, Global Domain Functions and Regions apply the ERM process adhering to the policy guardrails and considering specificities of the different risk categories to cover. The ZF Risk Catalog comprises all risk categories that need to be managed. Every newly identified risk has to be allocated to a risk category. ESG risks have been considered in the ZF Risk Catalog in a structured way. This also includes climate related risks.

Due to the increased and strategic importance, ZF has started a comprehensive scenario analysis in line with the TCFD requirements to identify and evaluate climaterelated risks and opportunities throughout the value chain, i.e., considering upstream activities (e.g., supplier risks), own activities and downstream activities (e.g., product risks). Risk responses are derived for implementation to enable ZF Group to prevent risks to occur and react accordingly to reduce the impacts as far as possible, once a risk realizes.

Corporate Risk & Resilience Management is the central Governance & Assurance instance for risk management, while the Global Domain Functions (GDF) act as "Risk Category Owners", that govern the specific risk management approaches, such as Sustainability, Environmental, Health and Safety, IT, Legal, Production etc. GRC Managers are responsible touchpoints in Divisions, GDFs and Regions to ensure proper implementation and performance of the risk management process.

We document, monitor, and manage risks using a common tool as single source of truth. Relating to time projection of the risk landscape, we take into account both operational (upcoming 3 years) and strategic (7 and more years ahead) risks.

At least every three months and additionally ad hoc, if required, the Divisions, GDFs and Regions identify, assess, and report operational risks with a short term (1-3 years) time-horizon. Due to the current very dynamic situation, we assess strategic risks, that have a medium and long-term impact on ZF (3-7 years and more) also on quarterly basis.

Risks are assessed via a standardized approach enabling both quantified (one-point and three-point distributions) and qualitative (using a qualitative impact matrix) evaluation methods.

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. Those risks are 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); Moderate (> 50 mEUR and < 200 mEUR); Significant (> 200 mEUR).

For qualitatively assessing impacts we offer a qualitative impact matrix which is commonly used by ERM, ICS, Compliance and Corporate Audit to evaluate risks, control issues, compliance cases and audit findings. There the qualitative impact clusters minor, Iow, moderate, and significant are described along the impact categories "Business/Financial Impact", "Health, Life and Limb", "Legal/Compliance Relevance", "Impact on Reputation", "Strategic Impact".

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Based on the risk assessment, we strive to reduce or completely avert risks by means of appropriate countermeasures and to seize associated opportunities. For each individual risk, the responsible Risk Owner is requested to define and initiate treatment measures. The Board of Management and the Risk Committee review the opportunity and risk situation on ZF Group level at least on quarterly basis. Corporate Risk & Resilience Management is tasked with continuously tracking the development of the risk situation of ZF Group and the status of the risk treatment measures initiated. Upon need, "Ad hoc Risk Committee meetings" are scheduled to manage spontaneously upcoming top risks in a timely appropriate manner.

The ERM is implemented as part of an integrated Governance, Risk and Compliance (GRC) approach, which aims to align the activities and foster cooperation of the core governance functions for Enterprise Risk Management (ERM), Internal Control System (ICS), Compliance and Internal Audit. The Corporate Risk Report is an integral part of the GRC Report that is provided to the BoM and the Audit Committee of the SB.

We regularly aggregate the overall risk landscape in order to compare it with our risk bearing capacity. Our ERM approach is based on common standards, like e.g., ISO 22301 and COSO. Upon year end close the Enterprise Risk Management System is audited on compliance with the standard IDW PS 340 by the Financial System Auditor.

#### C2.2a

CDP

#### (C2.2a) Which risk types are considered in your organization's climate-related risk assessments?

	Relevance & inclusion	Please explain	
Current regulation	Relevant, always included	e.g. air pollution limits, increase operational costs for alignment of facilities considered in risk assessment of ZF Groups EHS management system acc. ISO 14001/ ISO 50001/ ISO 18001 Conducted a first scenario analysis for ZF Group in 2022 following the TCFD recommendations to identify transitional climate-related risks and opportunities. The implications of this analysis are currently being evaluated.	
Emerging regulation	Image: group of the section		
Technology	Relevant, always included	e.g. reduced demand for goods/ services of certain technologies Periodically adaption of ZF strategy, strategy activation process and product development process. Cascading down from board level, the contents of ZF strategy are circulated to all levels in the corporate hierarchy. Conducted a first scenario analysis for ZF Group in 2022 following the TCFD recommendations to identify transitional climate-related risks and opportunities. The implications of this analysis are currently being evaluated.	
Legal	Relevant, always included	e.g. fuel/ energy taxes and regulations, increase operational costs considered in risk assessment of ZF EHS management system acc. ISO 14001/ ISO 50001/ ISO 18001 and product development process. Conducted a first scenario analysis for ZF Group in 2022 following the TCFD recommendations to identify transitional climate-related risks and opportunities. The implications of this analysis are currently being evaluated.	
Market	Relevant, always included	e.g. expansion of customers reporting requirements of non-financial data, increase operational costs considered in risk assessment of ZF EHS management system acc. ISO 14001/ ISO 50001/ ISO 18001 Conducted a first scenario analysis for ZF Group in 2022 following the TCFD recommendations to identify transitional climate-related risks and opportunities. The implications of this analysis are currently being evaluated.	
Reputation	Relevant, always included	e.g. transformation of automotive industry considered in risk assessment of ZF EHS management system acc. ISO 14001/ ISO 50001/ ISO 18001	
Acute physical	Relevant, always included	e.g. floods and droughts considered in risk assessment of ZF EHS management system acc. ISO 14001/ ISO 50001/ ISO 18001 Conducted a first scenario analysis for ZF Group in 2022 following the TCFD recommendations to identify transitional climate-related risks and opportunities. The implications of this analysis are currently being evaluated.	
Chronic physical	Relevant, always included	e.g. induced changes in natural resources considered in risk assessment of ZF EHS management system acc. ISO 14001/ ISO 50001/ ISO 18001 Conducted a first scenario analysis for ZF Group in 2022 following the TCFD recommendations to identify transitional climate-related risks and opportunities. The implications of this analysis are currently being evaluated.	

## C2.3

(C2.3) Have you identified any inherent climate-related risks with the potential to have a substantive financial or strategic impact on your business? Yes

#### C2.3a

(C2.3a) Provide details of risks identified with the potential to have a substantive financial or strategic impact on your business.

Identifier Risk 1

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Acute physical	Other, please specify (Flood)

#### Primary potential financial impact

Decreased revenues due to reduced production capacity

Climate risk type mapped to traditional financial services industry risk classification

<Not Applicable>

#### Company-specific description

Certain types of extreme weather events have increased significantly worldwide in frequency, intensity, and duration. This can be also observed across several locations of ZF. The most prominent example is our Ahrweiler plant in the German Ahrtal valley, which was severely affected by a flood disaster in July 2021. All our assembly facilities were destroyed. Moreover, a site of ZF's marine business in Florida, US, got hit by a hurricane in fall 2022. In August 2022, the Korean peninsula experienced the most severe flooding for the last 100 years – all employees of our site in Changwon had been requested to work from home for their safety and due to damage of the infrastructure.

In order to assess those physical risks, ZF follows the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) and conducted a first scenario analysis for ZF Group in 2022. Natural hazards are a company-wide risk, but they heavily depend on regional and local conditions. Therefore, based on various materiality criteria, 24 sites out of approx. 200 ZF locations (thereof 168 production locations) have been preselected for deeper analysis in a 2.7°C global warming scenario in 2050. The materiality criteria included, but were not limited to, relevance for the ZF business model (i.e. internal and external sales for 2021, site value, usage as headquarter) and coverage of regions already affected by hazards today. Latter was derived from global systems, that are used in-house to obtain and track real-time risk information about global safety-related events such as natural disasters.

First results of the scenario analysis indicate flooding events as key hazard for ZF in terms of production and business interruption risk, affecting both inbound and outbound logistics and intercompany transactions. This is especially true for certain ZF sites in China and Poland where the geographical location is widely exposed to this risk. The greatest risk is found in the Yangtze river delta area, where risks from flood could increase by more than 10% until 2050. In addition to decreased sales due to disrupted production and reduced capacities, flooding events may also destroy a certain percentage of our fixed assets, i.e. damage on our building, machinery and inventories which

would lead to an increase in repair costs and capital expenditure. Also, our employees could be hindered to get to their workplace due to destroyed infrastructure in the site's surrounding.

#### Time horizon Long-term

Likelihood

About as likely as not

Magnitude of impact Medium-high

#### Are you able to provide a potential financial impact figure? Yes, an estimated range

Potential financial impact figure (currency)

<Not Applicable>

Potential financial impact figure – minimum (currency)

# Potential financial impact figure – maximum (currency) 50000000

#### Explanation of financial impact figure

While a precise evaluation of the net financial impact of any climate-related disruption to our manufacturing and supply processes is not possible, ZF is aware that even a little decline in our production capabilities due to extreme weather events would result in a substantial negative impact on our figures. A first physical climate risk scenario analysis following the TCFD recommendations showed that in a 2.7°C scenario ZF could face a gross sales loss of 500 mEUR in 2050, mainly due to flooding events at one specific site in China. The figure constitutes a gross business interruption risk, not considering existing adaptation or protection measures (e.g., flood protection walls) that might already be in place. Potential asset damage is not included. The calculation is based on the assumption that the risk does either not impact our operations at the location at all (impact 1 EUR) or substantially impacts our operations and causes sales losses due to the (partially or entirely) reduced production capacity over a period of approx. 3 months (equals estimated average duration of business interruption for the site due to a 100-year flood).

#### Cost of response to risk

18500000

#### Description of response and explanation of cost calculation

Situation: ZF responses to and mitigates climate-related risks from extreme weather events by setting science-based carbon reduction targets and implementing groupwide 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 800 energy efficiency projects were implemented or initiated in 2022, which led to more than 121 GWh in energy savings, avoiding ca. 46,600 tons of CO2e emissions. In 2022, associated investment for the implementation of the ~800 energy efficiency projects accounted for €18.5 million.

In addition, ZF invests in the expansion of low-carbon energy consumption. Renewables made up 23% of our total electricity in 2022, under guaranteed certified green power contracts. Following our ZF Green Power Roadmap, purchased electricity shall be procured from purely renewable sources by 2030. The amount of self-generated electricity from renewable sources increased to 5,729 MWh due to new photovoltaic power plants installed in 2022 on several sites e.g., in South Africa, Germany, Great Britain and Poland.

Those investments strongly support the ZF vision to sustain a low-carbon, sustainable business model.

#### Comment

no further comments

Identifier Bisk 2

# Where in the value chain does the risk driver occur?

Downstream

#### Risk type & Primary climate-related risk driver

Market

Changing customer behavior

# Primary potential financial impact

Decreased revenues due to reduced demand for products and services

# Climate risk type mapped to traditional financial services industry risk classification

<Not Applicable>

# Company-specific description

# Development of Passenger Cars Market

The increasing awareness for sustainability and climate aspects and new and stricter regulations on exhaust gas and consumption values of vehicles in the EU, the US and Asia lead to changes in consumer behaviour. 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, especially 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 2022. The vehicle production in 2022 was still -13% below the 2017 record level. ZF expects a fundamental upheaval in the mobility sector.

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 focussed divisions account for ca. 74% of total ZF Group sales of 43,8 bnEUR. Thereof roughly 55% are still realized with components and products 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.

ZF has a clear view and strategy how to response to this risk. We clearly committed ourselves to the 1.5°C global warming pathway and are already accelerating the switch to electrified powertrains. As announced in 2020, ZF will no longer develop new driveline components for pure combustion engine vehicles. We are convinced, that our Next Generation Mobility strategy – aiming to provide clean, safe, comfortable and affordable mobility for everyone and everywhere to fit people's current and future

lifestyles – gives the right direction for our actions, including our tackling of climate-related risks. Our planning is based on an ambitious electrification scenario and distinct global production volume scenarios for light vehicles and light commercial vehicles <6t. 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 investments and R&D expenditures accordingly. The high share is driven by the main markets EU, North America and China and anticipates vehicle bans in the EU, the US and China in 2035.

Time horizon Medium-term

Likelihood

About as likely as not

Magnitude of impact Medium-high

#### Are you able to provide a potential financial impact figure? Yes, an estimated range

Potential financial impact figure (currency) <Not Applicable>

#### Potential financial impact figure – minimum (currency) 178000000

Potential financial impact figure – maximum (currency) 357000000

#### Explanation of financial impact figure

In 2022, ZF Group sales accounted for roughly 43.8 bnEUR. The passenger cars segment makes up about 74% of ZF Group sales, with an anticipated decreasing share over the next years. A significant share thereof - about 55% - 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 <6t. 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, and around one third Internal Combustion Engine vehicles (ICE) or mild-hybrids (MHEV).

Yet, should the market transform even faster than expected, a conceivable annual 1-2% decline in ICE sales would result in a sales loss of 178 mEUR (43,8 bnEUR x 74% x 55% x 1%) to 357 mEUR (43,8 bnEUR x 74% x 55% x 2%). We assume that we would not be able to compensate the decline with our market share for our electrified product portfolio or drivetrain-independent products in such a scenario. Those scenarios constitute a gross risk, not considering existing and future steering measures and orders (e.g., share of planned passenger car sales already secured via customer orders). Note: Rounding lead to deviations.

#### Cost of response to risk

3425000000

#### Description of response and explanation of cost calculation

Situation: ZF responds to the risk of changing customer behaviour in the passenger car market by investing significantly into research and development (R&D). R&D expenditure is defined as research and development costs in accordance with the statement of profit or loss, plus capitalized development costs, less their depreciation. Task: R&D efforts and output focus on 4+1 technology fields, which are not limited to the passenger car segment, nor on the automotive business solely: vehicle system & functions (e.g., electrical/electronic architectures), data handling & analytics (e.g., artificial intelligence), efficient energy conversion (e.g., new semiconductor technologies), advanced base technology (e.g., powerful central computers).

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 nearly 90% by 2035. We assume a global increase of pure BEV share in 2030 reaching just below 50%, mainly driven by Europe and China. We see highly aggressive OEM roadmaps and ramp-up of pure BEV platforms as well as a earlier phase-outs of ICE-based vehicles as key driver here. Thus, we work continuously on the volume production implementation of the e-Drive platform for electrified drives. It contains not only components and the associated software platform, but also a total system solution. In addition, the pre-developed software platform plays a central role for e-mobility solutions. This can shorten development times and generate a high maturity level already in early project phases as well as provide maximum cost efficiency for our customers. Result: ZF is proud of 2,812 invention disclosures, 2,066 patent applications and 12 innovation projects that transferred to volume production development in 2022. In 2022, ZF invested 3.4 bnEUR in research and development, which corresponds to a sales share of 7.8%.

### Comment

no further comment

# Identifier

Risk 3

## Where in the value chain does the risk driver occur? Downstream

Risk type & Primary climate-related risk driver

Market

Changing customer behavior

#### Primary potential financial impact

Decreased revenues due to reduced demand for products and services

#### Climate risk type mapped to traditional financial services industry risk classification <Not Applicable>

#### Company-specific description

#### Commercial Vehicles Market

End-users in Transport and Logistics Industry (e.g. fleets, logistic and parcel providers, bus operators) are increasingly demanding zero-emission vehicles at competitive prices – driven by public pressure and customer expectation. Given that there are various zero-emission technologies emerging (e.g. Battery Electric, H2 Fuel-Cell, H2 combustion, E-Fuels) and are likely to co-exist, commercial vehicle (CV) original equipment manufacturers (OEMs) are under pressure to develop and offer various new technologies, while at the same time continuing to maintain their Internal Combustion Engine (ICE) portfolio until technology phase-out. This leads to increasing demand towards the supplier industry to develop zero-emission technologies and system-solutions that help CV OEMs to shorten their time to market and save development costs. ZFs Commercial Vehicle Division (CVS) drives this transformation by offering not only electrified powertrains but an entire ecosystem of components and systems to support the electrification.

The resource-planning for R&D, production and sales for CVs >6t (busses & trucks) is based on ambitious e-Mobility forecasts. We expect a strong electrification of the CV

sector and a gently but steadily increase of global CV production over the next years. ZF plans with ca. 40% EV-based CVs >6t (battery-electric, fuel cell electric) in 2030, increasing to about 60% in 2035. In 2022, ca. 40% of the CVS sales referred to ICE. This share will reduce over the planning horizon to ca. 30% in line with a constant ramp up of electric vehicles. This assumption also takes into account that our transmission portfolio will be continuously needed for some zero emission technologies. A decline of the current ICE sales share could be faced, if the markets change towards an even faster electrification penetration compared to our assumptions (scenario -1-2% sales decline). In this case, it is even more crucial for CVS to have a strong position in systems and components that support alternative drivetrains and zero-emission vehicles (ZEV), in order to compensate declining ICE sales with additional revenues from the electrification portfolio. E.g. the CV ZEV penetration incl. H2 ICE is considered valuable for the continuing sales of our highly efficient ICE components. Due to increasing ZEV truck targets including funding and further extension of Zero Emission Zones, we expect a low digit H2 ICE share in 2030.

**Time horizon** 

Medium-term

Likelihood About as likely as not

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure? Yes, an estimated range

Potential financial impact figure (currency) <Not Applicable>

Potential financial impact figure – minimum (currency) 30000000

Potential financial impact figure – maximum (currency) 60000000

#### Explanation of financial impact figure

In 2022, the division Commercial Vehicle Solutions (CVS) contributed around 17% to ZF Group sales of 43.8 bnEUR, accounting for roughly 7.51 bnEUR. Thereof, ca. 40% refer to pure ICE 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 30 mEUR (7.5 bnEUR x 40% x 1%) to 60 mEUR (7.5 bnEUR x 40% x 2%). Those figures constitute gross risks, not considering existing and future counter measures or orders already received.

#### Cost of response to risk

0

#### Description of response and explanation of cost calculation

Situation: ZF responds to the risk of changing customer behaviour in the commercial vehicle market by investing significantly into research and development (R&D). In 2022, ZF invested 3.4 bnEUR in R&D. R&D expenditure is defined as R&D costs in accordance with the statement of profit or loss, plus capitalized development costs, less their depreciation.

Task: The required transformation of ZFs CV segment was kick-offed in early 1990s already, when first tests with an electric central drive with CV OEMs took place. During the last 30 years several electric drive solutions for buses and trucks have been successfully launched, e.g. TraXon or CeTrax. We expect the duration of transformation (full switch to electrified CVs) to vary between the regions. ZF plans with ca. two thirds EV-based CVs >6t (battery-electric, fuel cell electric vehicles) by 2035 in Europe, with continuing ramp-up until the 2040s.

Action: With the formation of the new Commercial Vehicle Solutions (CVS) Division as of Jan. 2022 and the integration of the CVS product portfolio, ZF can unlock new innovation potential for the CV and transport sector. CVS developed an innovative modular platform for electric drives whose components can be used in almost all truck, bus and niche applications. The company also presented a locally emission-free drive solution for semitrailers with an electrically driven axle, believing in the potential - combined with combustion engine tractors – to recover braking energy and providing tractive force support, thus helping to save emissions. Initial studies show potential for reducing CO2 emissions of an ICE Truck & eTrailer combination by up to 16% in short-distance operations and up to 7% in freeway driving. For long-distance trucks, ZF expects a greater penetration of fleets with fuel cell systems. To this end, ZF plans to consistently expand its existing drive system know-how towards the fuel cell system. Result: About one fifth (~20%) of ZF Group's R&D expenditure is apportioned to our CVS division. Thereof, about one fourth (~25% - represents cost of response to risk) 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 supporting ICE, H2 combustion or e-Fuel applications, and our e-mobility solutions supporting Battery-Electric, Fuel-Cell Vehicle concepts.

#### Comment

Note: The cost of response to risk (25% R&D share to EV-drivetrains for the CV-sector) refers to pure and distinct electric vehicle (EV) R&D activities within the CVS division. ZF pools all competences and activities in the area of electrified powertrain technology in a separate Electrified Powertrain pass car division, developing cross-segment and cross divisional components for the transformation towards e-mobility in pass car and commercial vehicle (CV).

The automotive industry faces a fundamental upheaval. The increasing awareness for sustainability, environmental and climate aspects and further tightening of CO2 and emission targets in major regions, leads to changing market requirements. This is true for both the passenger car and the commercial vehicle segment. We expect a strong electrification of the CV market, yet time delayed and with a broader range of technologies compared to the passenger car sector. ZF is aware that a good competitive position in products that continue to be required in alternative powertrains in the CV segment will ensure better access to future growth potentials. Our Next Generation Mobility Strategy is also valid for the CV sector: providing clean, safe, comfortable and affordable mobility. Thus, ZF drives innovation for the CV and transport sector both in ICE, non-drivetrain related and electrified areas.

C2.4

(C2.4) Have you identified any climate-related opportunities with the potential to have a substantive financial or strategic impact on your business? Yes

#### C2.4a

(C2.4a) Provide details of opportunities identified with the potential to have a substantive financial or strategic impact on your business.

Identifier

#### Opp1

#### Where in the value chain does the opportunity occur?

Downstream

Opportunity type

Products and services

#### Primary climate-related opportunity driver

Development and/or expansion of low emission goods and services

#### Primary potential financial impact

Increased revenues resulting from increased demand for products and services

#### Company-specific description

#### ZF Wind Power Business

ZF has 40 years of experience in gearboxes for wind turbines (renewable energy) and 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 for wind turbines and consequently, an increase in revenues for ZF. For the growing wind power market, ZF Wind Power is positioned as a key player to transform global energy systems over the next decades to come.

#### Time horizon

Medium-term

Likelihood Likelv

Magnitude of impact Medium

Are you able to provide a potential financial impact figure? Yes, an estimated range

Potential financial impact figure (currency) <Not Applicable>

Potential financial impact figure – minimum (currency) 100000000

Potential financial impact figure – maximum (currency) 160000000

#### Explanation of financial impact figure

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.

#### Cost to realize opportunity 115000000

115000000

#### Strategy to realize opportunity and explanation of cost calculation

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 2022 alone, ZF has invested €38 million in R&D. From 2019 to 2022 ZF's R&D expenditure in its wind power business amounted to €115 million (€26 million in 2019 + €27 million in 2020 + €24 million in 2021 + €38 million in 2022). See also ZF Green Finance Report 2023, p. 10:

https://www.zf.com/master/media/corporate/m\_zf\_com/company/bonds\_relations\_/sustainable\_finance/zf\_green\_finance\_reports/ZF\_Green\_Finance\_Report\_2023.pdf. 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. The test bench will validate complete driveline systems for onshore and offshore applications. The functional behaviour of the main bearings, the gearbox, and the generator is tested under real conditions. Commissioned in 2022, the end-of-line test rig for ZF Wind Power will be delivered in the fall of 2023. The tests form the basis for further ZF innovations in wind power to actively drive forward the development of renewable energies and its wind power business.

#### Comment

See also ZF Green Finance Report 2023:

https://www.zf.com/master/media/corporate/m\_zf\_com/company/bonds\_relations\_/sustainable\_finance/zf\_green\_finance\_reports/ZF\_Green\_Finance\_Report\_2023.pdf.

#### Identifier Opp2

Where in the value chain does the opportunity occur? Direct operations

Opportunity type Resource efficiency

lesource eniciency

Primary climate-related opportunity driver Use of more efficient production and distribution processes

Primary potential financial impact Reduced indirect (operating) costs

#### Company-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. 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.

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. 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 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

These measures, in conjunction with the EHS and Energy Management System, considerably improve energy efficiency worldwide. By the end of 2022, 93 locations gained certification according to the international energy management standard ISO 50001.

Time horizon Medium-term

Likelihood Likelv

Magnitude of impact

Medium

#### Are you able to provide a potential financial impact figure? Yes, an estimated range

#### Potential financial impact figure (currency)

<Not Applicable>

Potential financial impact figure - minimum (currency) 10000000

Potential financial impact figure - maximum (currency) 16000000

#### Explanation of financial impact figure

ZF has implemented or initiated about 800 projects in 2022 which led to more than 121 GWh in energy savings. This corresponds to the electricity consumption of 30,000 average households, an avoidance of 46,600 tons of CO2e emissions and to annual savings of € 10 million. The savings result from e.g., reductions in energy and maintenance cost

For the future by 2030, we expect as a minimum similar savings as in previous years (€ 10 million). However, due to raised ambition level, the overview of identified and managed projects in our project roadmap and due to increase of energy costs, the maximum impact figure is expected to be higher, up to about € 16 million (similar calculation approach as with € 10 million). We expect such a higher impact figure due to expected rising energy costs and increasing CO2 prices/taxes. For 2023, the ambition level of energy efficiency was increased to reduce energy consumption per sales by 3% (while average annual target until 2030 is -2%).

#### Cost to realize opportunity

25000000

### Strategy to realize opportunity and explanation of cost calculation

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. Result: As a result, ZF has implemented or initiated about 800 projects in 2022 which led to more than 121 GWh in energy savings. This corresponds to the electricity consumption of 30,000 average households, an avoidance of 46,600 tons of CO2e emissions and to annual savings of € 10 million. To realize the opportunity, we expect yearly investments in the range of € 20 - 30 million by 2030. In 2022, the total investment for the implementation of energy efficiency projects was € 18.5 million. In upcoming years, we expect that more invest is needed to achieve similar savings as in the past.

#### Comment

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.

# Identifier

Opp3

#### Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Products and services

#### Primary climate-related opportunity driver

Development of new products or services through R&D and innovation

#### Primary potential financial impact Increased access to capital

#### Company-specific description

ZF considers green financial instruments as business opportunity for an increased access to capital. In the context of the EU strategy for financing sustainable growth (sustainable finance), regulators, financial institutions and credit rating agencies are calling for greater transparency and Environment, Social, Governance (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. The EU taxonomy enables ZF to use new financing opportunities for projects that contribute to lower emissions and a more climate-friendly economy. The framework takes the Sustainable Development Goals into account and follows the ICMA Green Bond Principles and the LMA Green Loan Principles. ZF will further develop the GFF in accordance with evolving market standards, the establishment of the EU taxonomy and the European green bond standard. Transparent information about the allocated proceeds and the climate effects of the financed projects is communicated in the annual Green Finance Report. The results of these developments are also visible in the financing structure where sustainable financing instruments become an important part of the overall financing mix. ZF was the first automotive supplier in Germany to issue green bonds under the Dept Issuance Program (DIP) in 2021. Green bonds, e.g., offer opportunities looking at potential internal requirements from investors or banks in fulfilling their EU taxonomy alignment target as they are considered 100% green. Besides, ZF also implemented an ESG-concept in its Revolving Credit Facility (RCF). It includes reducing CO2e emissions in all three scopes of greenhouse gas emissions to achieve climate neutrality by 2040. ZF's ambition level is anchored in the SBTi validated intermediate targets. 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. The proceeds from the green bonds are used to finance or re-finance ZF's green project portfolio (as of fiscal year 2022: development, production, and sale of products for battery electric vehicles (clean transportation) and gearboxes for wind turbines (renewable energy)).

Time horizon

Short-term

Likelihood

Virtually certain

Magnitude of impact Medium

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency) 20000000

Potential financial impact figure – minimum (currency) <Not Applicable>

Potential financial impact figure – maximum (currency) <Not Applicable>

#### Explanation of financial impact figure

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 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.

#### Cost to realize opportunity

0

#### Strategy to realize opportunity and explanation of cost calculation

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.

Result: In setting up sustainable financing instruments, the majority of cost arises from internal resources. In addition, ZF mandated ESG coordinators for specific financing transactions. Costs for internal resources are not specified further. Comparing a conventional transaction vs. a sustainable one, the additional external costs are minor.

#### Comment

For more details on ZF's green bonds, please refer to ZF Green Finance Report 2023 for the fiscal year 2022: https://www.zf.com/master/media/corporate/m\_zf\_com/company/bonds\_relations\_/sustainable\_finance/zf\_green\_finance\_reports/ZF\_Green\_Finance\_Report\_2023.pdf

#### C3. Business Strategy

C3.1

(C3.1) Does your organization's strategy include a climate transition plan that aligns with a 1.5°C world?

Row 1

#### Climate transition plan

Yes, we have a climate transition plan which aligns with a 1.5  $^{\circ}\text{C}$  world

Publicly available climate transition plan

Yes

#### Mechanism by which feedback is collected from shareholders on your climate transition plan

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

#### Description of feedback mechanism

Climate action is of strategic importance to ZF. Commitment to climate neutrality presents an integral part of ZF's company strategy "Next Generation Mobility". ZF shareholders confirmed this company strategy and are regularly involved on ZF's climate ambition.

Within ZF's "Next Generation Mobility" strategy, climate neutrality by 2040 in all three emission scopes represents one of four key performance indicators. To operationalize climate neutrality, 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% by 2030 and its Scope 3 emissions by 40% relative to sales by 2030. This climate ambition is integrated into ZF's strategic and operative planning. Moreover, ZF shareholders are involved in the release of ZF's annual report. The annual report incorporates ZF's sustainability report and includes climate-related aspects.

Frequency of feedback collection

Annually

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

SBTi\_Validation\_Certificate\_ZF.pdf ZF\_AnnualReport for 2022.pdf ZF\_Green\_Finance\_Report\_2023.pdf

Explain why your organization does not have a climate transition plan that aligns with a 1.5°C world and any plans to develop one in the future <Not Applicable>

#### Explain why climate-related risks and opportunities have not influenced your strategy <Not Applicable>

# C3.2

#### (C3.2) Does your organization use climate-related scenario analysis to inform its strategy?

		Use of climate-related scenario analysis to inform strategy	Primary reason why your organization does not use climate- related scenario analysis to inform its strategy	Explain why your organization does not use climate-related scenario analysis to inform its strategy and any plans to use it in the future
ľ	Row I	Yes, qualitative, but we plan to add quantitative in the next two years	<not applicable=""></not>	<not applicable=""></not>

# C3.2a

#### (C3.2a) Provide details of your organization's use of climate-related scenario analysis.

Climate-related scenario		Scenario analysis coverage	Temperature alignment of scenario	Parameters, assumptions, analytical choices		
Transition scenarios	IEA NZE 2050	NZE 2050 Company-wide <not applicable=""></not>		conducted a qualitative scenario analysis (in early 2022) to identify transitional climate-related risks and opportunities, quantitative scenario analysis is ongoing to quantify these risks and opportunities     expression of the most ambitious path of decarbonisation envisioned in the IEA scenarios, keeping the world under 1.5° of warming     increasing demand for low carbon products/ raw materials such as green steel or aluminium     strong decarbonization of the transport/ automotive sector with regards to the penetration of electric vehicles (EVs)     strong increase of renewable energy generation/electrification, high increase in wind power capacities offshore and onshore     varying growth rates of carbon prices in different regions     data available for suitable analysis horizons, namely 2030 and 2050     exogenous demographic and GDP development		
Transition scenarios	IEA STEPS (previously IEA NPS)	Company-wide	<not applicable=""></not>	<ul> <li>conducted a qualitative scenario analysis (in 2022) to identify transitional climate-related risks and opportunities, quantitative scenario analysis is ongoing to quantify these risks and opportunities</li> <li>alignment with the currently stated climate policies</li> <li>significant decarbonization of the transport/ automotive sector with regards to the penetration of EVs, less than NZE 2050</li> <li>significant increase of renewable energy generation/ electrification, increase in wind power capacities offshore and onshore, both less than NZE 2050</li> <li>moderate growth rates of carbon prices in different regions</li> <li>exogenous demographic and GDP development</li> </ul>		
Physical clim scenarios	nate RCP 4.5	Company-wide	<not applicable=""></not>	<ul> <li>- conducted a qualitative scenario analysis (in 2022) to identify physical climate-related risks, quantitative scenario analysis on site-level is ongoing to quantify these risks</li> <li>- latest science in accordance with the IPCC</li> <li>- includes the SSP (Shared Socioeconomic Pathways) concept of the IPCC</li> <li>- alignment with the emission levels assumed in the IEA stated policies scenario</li> <li>- severe implications by extreme weather events and at the same time a very likely scenario</li> </ul>		

# C3.2b

(C3.2b) Provide details of the focal questions your organization seeks to address by using climate-related scenario analysis, and summarize the results with respect to these questions.

#### Row 1

#### Focal questions

- What material climate-related risks and opportunities arise for ZF in different climate scenarios?
- How can ZF manage the identified risks and opportunities accordingly? How good is ZF's organisational resilience against the effects of climate change?
- How does ZF ensure that all aspects (physical and transitional) are adequately considered in the choice of climate scenarios?
- Do we have to adapt our business model, our strategy or our financial planning to mitigate transitional climate-related risks?
- Do we have to physically adapt our operations to prepare for physical climate-related risks?
- How can we seize the climate-related opportunities presented by the market?

#### Results of the climate-related scenario analysis with respect to the focal questions

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:

Transitional:

- Supply Chain: Significant price increases of carbon-intensive raw materials due to rising CO2 prices, esp. in Net Zero World (NZW) scenario, as well as high demand for metals could lead to increased procurement costs for ZF

- Production: Prod. costs might rise due to rising CO2 prices, esp. in EU & North America, yet ZFs energy costs have a limited volume compared to raw materials. Ca. 800 energy efficiency projects were implemented in 2022, avoiding ca. 46,600 tons of CO2e emissions. ZF also greatly invests in ramp-up of renewables, making up 23% of our electricity in 2022. New photovoltaic power plants were installed on several sites, e.g. in South Africa or Great Britain.

- Markets:

Pass.Cars: Because of higher total volume of sold passenger cars the Stated Policies Scenario (STEPS) presents larger market opportunity for ZF as compared to NZE scenario

Comm. Vehicles: Because of higher total volume of transportation the STEPS presents larger market opportunity for ZF as compared to NZE scenario Industrial Technology: NZE presents an opportunity for the sales of wind power applications as capacities significantly increase in NZE scenario. ZFs Wind Power intends to generate about 1.6 bnEUR sales in 2027.

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 for 2021, site value) and coverage of regions already affected by hazards today.

- A more profound site-analysis will measure and validate the financial net effects of these risks.

How ZF benefits from scenario analysis results:

- IEA assumptions reg. volume and drivetrain developments are used as input for our e-forecasts (basis for strategic planning)
- Initial transitional results shall challenge and subsequently confirm ZFs overall strategy, e.g. reg. drivetrain split and wind power market, and ZF's Green Steel Strategy - Initial physical results support Production Resilience and prioritization of Corp. Security activities
- Consistent climate data basis strengthen Supply Chain Resilience & Supplier Risk Mgmt

# C3.3

(C3.3) Describe where and how climate-related risks and opportunities have influenced your strategy.

	Have climate- related risks and opportunities influenced your strategy in this area?	Description of influence
Products and	Yes	For ZF as a technology company, climate-related risks and opportunities have a significant influence on the company's strategic direction.
services		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.

	Have climate-	Description of influence
	and	
	opportunities	
	influenced your strategy in this	
	area?	
Supply	Yes	ZF also focuses on the supply chain in order to realize its strategic goal of climate neutrality in all three emission scopes by 2040.
and/or value chain		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: For the existing supplier base, ZF carried out an initial risk assessment and prioritization of direct suppliers for production and non-production materials based on country and product-specific risks as well as the annual purchasing volume. This assessment covers around 2,000 suppliers or about 90% of the procurement volume. It helped us to identify suppliers with a potential risk of violating sustainability standards. To achieve transparency and obtain the required information, we therefore request that these suppliers complete the Self-Assessment Questionnaire (SAQ) via NQC Ltd. In addition to the annual risk assessment, ZF has approved a concrete decarbonisation roadmap. To fulfil our responsibility with regard to Scope 3 emissions in line with ZF's climate neutrality strategy, we want to reduce Scope 3 GHG emissions by 40% per million euro sales by 2030 (Base: 2019). All new and existing suppliers are required to endorse ZF Business Partners Principles (BPP) which represent values that are indispensable to ZF. Compliance with national and international laws and regulations at all locations worldwide is the minimum requirement. In 2022 we started revision of BPP for more social and climate related topics. Acceptance of this document is mandatory for new awards to existing suppliers and for the registration of new suppliers.
		Result: The rollout of the SAQ via the global NQC platform targeted 1.800 production material suppliers and was completed in 2022. ZF achieved a coverage of 82%. The supplier engagement is ongoing, and our aim is to receive the questionnaire from all further suppliers. This result will help us to create transparency and identify suppliers with potential risk violating sustainability standards. At the same time, subcontractors gain impression of the Group sustainability expectations.
Investment in R&D	Yes	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 and specific product-related emissions.
		Task: The specific target 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 product carbon footprints.
		Action: For target achievement, ZF pursues three major product development initiatives. First, 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. Second, ZF takes care to select technologies and materials that produce as few emissions as possible in our upstream supply chain, but also promote the use of recycled and renewable materials. One immediate focus for reducing product-related emissions is the increased use of materials with higher recycled content. In order to enable this usability, ZF has established the "Green Material Project", that focuses on the assessment and testing of materials that provide a better CO2e performance with increased recycling content, alterative manufacturing processes and alternate materials. Third, 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.
		about 12% compared to 2021 (€3.060 billion).
Operations	Yes	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: 2-F is represented with Tob production locations in 32 countries. To achieve decarbonization of its locations, 2-F locuses 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 2022, 93 locations gained certification according to the international energy management standard ISO 50001. Moreover, renewables accounted for 23% of the total electricity in 2023.

# C3.4

#### (C3.4) Describe where and how climate-related risks and opportunities have influenced your financial planning.

	Financial planning elements that have been	Description of influence
	influenced	
Rov 1	V Revenues Direct costs Indirect costs	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.
	Capital expenditures Access to capital	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.
	Cupital	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. As a consequence, ZF extended its sustainable finance portfolio and issued two green bonds in 2021. The 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, the Supervisory Board decided together with the Board of Management in 2022 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.
		Result: With our approach to implement ZF's climate ambition, 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.

# C3.5

# (C3.5) 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	Indicate the level at which you identify the alignment of your spending/revenue with a sustainable finance taxonomy
Row 1	No, but we plan to in the next two years	<not applicable=""></not>

# C4. Targets and performance

# C4.1

(C4.1) Did you have an emissions target that was active in the reporting year? Absolute target

Intensity target

# C4.1a

#### (C4.1a) Provide details of your absolute emissions target(s) and progress made against those targets.

Target reference number

Abs 1

#### Is this a science-based target?

Yes, and this target has been approved by the Science Based Targets initiative

# Target ambition

1.5°C aligned

Year target was set 2021

Target coverage Company-wide

Scope(s) Scope 1

Scope 2

Scope 2 accounting method Market-based

Scope 3 category(ies) <Not Applicable>

Base year 2019

Base year Scope 1 emissions covered by target (metric tons CO2e) 406000

Base year Scope 2 emissions covered by target (metric tons CO2e) 1371000

Base year Scope 3, Category 1: Purchased goods and services emissions covered by target (metric tons CO2e) <Not Applicable>

Base year Scope 3, Category 2: Capital goods emissions covered by target (metric tons CO2e) <Not Applicable>

Base year Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) emissions covered by target (metric tons CO2e) <Not Applicable>

Base year Scope 3, Category 4: Upstream transportation and distribution emissions covered by target (metric tons CO2e) <Not Applicable>

Base year Scope 3, Category 5: Waste generated in operations emissions covered by target (metric tons CO2e) <Not Applicable>

Base year Scope 3, Category 6: Business travel emissions covered by target (metric tons CO2e) <Not Applicable>

Base year Scope 3, Category 7: Employee commuting emissions covered by target (metric tons CO2e) <Not Applicable>

Base year Scope 3, Category 8: Upstream leased assets emissions covered by target (metric tons CO2e) <Not Applicable>

Base year Scope 3, Category 9: Downstream transportation and distribution emissions covered by target (metric tons CO2e) <Not Applicable>

Base year Scope 3, Category 10: Processing of sold products emissions covered by target (metric tons CO2e) <Not Applicable>

Base year Scope 3, Category 11: Use of sold products emissions covered by target (metric tons CO2e) <Not Applicable>

Base year Scope 3, Category 12: End-of-life treatment of sold products emissions covered by target (metric tons CO2e) <Not Applicable>

Base year Scope 3, Category 13: Downstream leased assets emissions covered by target (metric tons CO2e) <Not Applicable>

Base year Scope 3, Category 14: Franchises emissions covered by target (metric tons CO2e) <Not Applicable>

Base year Scope 3, Category 15: Investments emissions covered by target (metric tons CO2e) <Not Applicable>

Base year Scope 3, Other (upstream) emissions covered by target (metric tons CO2e) <Not Applicable>

Base year Scope 3, Other (downstream) emissions covered by target (metric tons CO2e) <Not Applicable>

Base year total Scope 3 emissions covered by target (metric tons CO2e) <Not Applicable>

Total base year emissions covered by target in all selected Scopes (metric tons CO2e) 1777000

Base year Scope 1 emissions covered by target as % of total base year emissions in Scope 1 100

Base year Scope 2 emissions covered by target as % of total base year emissions in Scope 2  $100\,$ 

Base year Scope 3, Category 1: Purchased goods and services emissions covered by target as % of total base year emissions in Scope 3, Category 1: Purchased goods and services (metric tons CO2e) </br><br/><Not Applicable>

Base year Scope 3, Category 2: Capital goods emissions covered by target as % of total base year emissions in Scope 3, Category 2: Capital goods (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) emissions covered by target as % of total base year emissions in Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) (metric tons CO2e)

Base year Scope 3, Category 4: Upstream transportation and distribution covered by target as % of total base year emissions in Scope 3, Category 4: Upstream transportation and distribution (metric tons CO2e) <Not Applicable>

Base year Scope 3, Category 5: Waste generated in operations emissions covered by target as % of total base year emissions in Scope 3, Category 5: Waste generated in operations (metric tons CO2e) </br><br/><Not Applicable>

Base year Scope 3, Category 6: Business travel emissions covered by target as % of total base year emissions in Scope 3, Category 6: Business travel (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Category 7: Employee commuting covered by target as % of total base year emissions in Scope 3, Category 7: Employee commuting (metric tons CO2e) <Not Applicable>

Base year Scope 3, Category 8: Upstream leased assets emissions covered by target as % of total base year emissions in Scope 3, Category 8: Upstream leased assets (metric tons CO2e) <Not Applicable>

Base year Scope 3, Category 9: Downstream transportation and distribution emissions covered by target as % of total base year emissions in Scope 3, Category 9: Downstream transportation and distribution (metric tons CO2e)

Base year Scope 3, Category 10: Processing of sold products emissions covered by target as % of total base year emissions in Scope 3, Category 10: Processing of sold products (metric tons CO2e) <Not Applicable>

Base year Scope 3, Category 11: Use of sold products emissions covered by target as % of total base year emissions in Scope 3, Category 11: Use of sold products (metric tons CO2e) <Not Applicable>

Base year Scope 3, Category 12: End-of-life treatment of sold products emissions covered by target as % of total base year emissions in Scope 3, Category 12: End-of-life treatment of sold products (metric tons CO2e) </br><Not Applicable>

Base year Scope 3, Category 13: Downstream leased assets emissions covered by target as % of total base year emissions in Scope 3, Category 13: Downstream leased assets (metric tons CO2e) </br>

Base year Scope 3, Category 14: Franchises emissions covered by target as % of total base year emissions in Scope 3, Category 14: Franchises (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Category 15: Investments emissions covered by target as % of total base year emissions in Scope 3, Category 15: Investments (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Other (upstream) emissions covered by target as % of total base year emissions in Scope 3, Other (upstream) (metric tons CO2e) <Not Applicable>

Base year Scope 3, Other (downstream) emissions covered by target as % of total base year emissions in Scope 3, Other (downstream) (metric tons CO2e) <Not Applicable>

Base year total Scope 3 emissions covered by target as % of total base year emissions in Scope 3 (in all Scope 3 categories) <Not Applicable>

Base year emissions covered by target in all selected Scopes as % of total base year emissions in all selected Scopes 100

Target year 2030

Targeted reduction from base year (%) 80

Total emissions in target year covered by target in all selected Scopes (metric tons CO2e) [auto-calculated] 355400

Scope 1 emissions in reporting year covered by target (metric tons CO2e) 391000

Scope 2 emissions in reporting year covered by target (metric tons CO2e) 776000

Scope 3, Category 1: Purchased goods and services emissions in reporting year covered by target (metric tons CO2e) <Not Applicable>

Scope 3, Category 2: Capital goods emissions in reporting year covered by target (metric tons CO2e) <Not Applicable>

Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) emissions in reporting year covered by target (metric tons CO2e) <Not Applicable>

Scope 3, Category 4: Upstream transportation and distribution emissions in reporting year covered by target (metric tons CO2e) <Not Applicable>

Scope 3, Category 5: Waste generated in operations emissions in reporting year covered by target (metric tons CO2e) <Not Applicable>

Scope 3, Category 6: Business travel emissions in reporting year covered by target (metric tons CO2e) <Not Applicable>

Scope 3, Category 7: Employee commuting emissions in reporting year covered by target (metric tons CO2e) <Not Applicable>

Scope 3, Category 8: Upstream leased assets emissions in reporting year covered by target (metric tons CO2e) <Not Applicable>

Scope 3, Category 9: Downstream transportation and distribution emissions in reporting year covered by target (metric tons CO2e) <Not Applicable>

Scope 3, Category 10: Processing of sold products emissions in reporting year covered by target (metric tons CO2e)

#### <Not Applicable>

Scope 3, Category 11: Use of sold products emissions in reporting year covered by target (metric tons CO2e) <Not Applicable>

Scope 3, Category 12: End-of-life treatment of sold products emissions in reporting year covered by target (metric tons CO2e) <Not Applicable>

Scope 3, Category 13: Downstream leased assets emissions in reporting year covered by target (metric tons CO2e) <Not Applicable>

Scope 3, Category 14: Franchises emissions in reporting year covered by target (metric tons CO2e) <Not Applicable>

Scope 3, Category 15: Investments emissions in reporting year covered by target (metric tons CO2e) <Not Applicable>

Scope 3, Other (upstream) emissions in reporting year covered by target (metric tons CO2e) <Not Applicable>

Scope 3, Other (downstream) emissions in reporting year covered by target (metric tons CO2e) <Not Applicable>

Total Scope 3 emissions in reporting year covered by target (metric tons CO2e) <Not Applicable>

Total emissions in reporting year covered by target in all selected scopes (metric tons CO2e) 1167000

#### Does this target cover any land-related emissions?

No, it does not cover any land-related emissions (e.g. non-FLAG SBT)

% of target achieved relative to base year [auto-calculated]

42.9093978615644

### Target status in reporting year

Underway

#### Please 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.

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 CO<sub>2</sub>e 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.

## 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, a total of approx. 800 projects (2021: 555) has been implemented or initiated, which led to more than 121 GWh in energy savings (2021: 86.4 GWh). This corresponds to the electricity consumption of 30,000 average households and the avoidance of 46,600 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 23% in 2022, which contributed to emission reduction in 2022.

#### List the emissions reduction initiatives which contributed most to achieving this target

<Not Applicable>

#### Target reference number Abs 2

#### Is this a science-based target?

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

Target ambition

1.5°C aligned

Year target was set 2022

Target coverage Company-wide

Scope(s)

Scope 1 Scope 2 Scope 2 accounting method Market-based

Scope 3 category(ies) <Not Applicable>

Base year 2019

Base year Scope 1 emissions covered by target (metric tons CO2e) 406000

Base year Scope 2 emissions covered by target (metric tons CO2e) 1371000

Base year Scope 3, Category 1: Purchased goods and services emissions covered by target (metric tons CO2e) <Not Applicable>

Base year Scope 3, Category 2: Capital goods emissions covered by target (metric tons CO2e) <Not Applicable>

Base year Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) emissions covered by target (metric tons CO2e) <Not Applicable>

Base year Scope 3, Category 4: Upstream transportation and distribution emissions covered by target (metric tons CO2e) <Not Applicable>

Base year Scope 3, Category 5: Waste generated in operations emissions covered by target (metric tons CO2e) <Not Applicable>

Base year Scope 3, Category 6: Business travel emissions covered by target (metric tons CO2e) <Not Applicable>

Base year Scope 3, Category 7: Employee commuting emissions covered by target (metric tons CO2e) <Not Applicable>

Base year Scope 3, Category 8: Upstream leased assets emissions covered by target (metric tons CO2e) <Not Applicable>

Base year Scope 3, Category 9: Downstream transportation and distribution emissions covered by target (metric tons CO2e) <Not Applicable>

Base year Scope 3, Category 10: Processing of sold products emissions covered by target (metric tons CO2e) <Not Applicable>

Base year Scope 3, Category 11: Use of sold products emissions covered by target (metric tons CO2e) <Not Applicable>

Base year Scope 3, Category 12: End-of-life treatment of sold products emissions covered by target (metric tons CO2e) <Not Applicable>

Base year Scope 3, Category 13: Downstream leased assets emissions covered by target (metric tons CO2e) <Not Applicable>

Base year Scope 3, Category 14: Franchises emissions covered by target (metric tons CO2e) <Not Applicable>

Base year Scope 3, Category 15: Investments emissions covered by target (metric tons CO2e) <Not Applicable>

Base year Scope 3, Other (upstream) emissions covered by target (metric tons CO2e) <Not Applicable>

Base year Scope 3, Other (downstream) emissions covered by target (metric tons CO2e) <Not Applicable>

Base year total Scope 3 emissions covered by target (metric tons CO2e) <Not Applicable>

Total base year emissions covered by target in all selected Scopes (metric tons CO2e) 1777000

Base year Scope 1 emissions covered by target as % of total base year emissions in Scope 1 100

Base year Scope 2 emissions covered by target as % of total base year emissions in Scope 2 100

Base year Scope 3, Category 1: Purchased goods and services emissions covered by target as % of total base year emissions in Scope 3, Category 1: Purchased goods and services (metric tons CO2e) <Not Applicable>

Base year Scope 3, Category 2: Capital goods emissions covered by target as % of total base year emissions in Scope 3, Category 2: Capital goods (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) emissions covered by target as % of total base year emissions in Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) (metric tons CO2e) 

<Not Applicable>

Base year Scope 3, Category 4: Upstream transportation and distribution covered by target as % of total base year emissions in Scope 3, Category 4: Upstream transportation and distribution (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Category 5: Waste generated in operations emissions covered by target as % of total base year emissions in Scope 3, Category 5: Waste generated in operations (metric tons CO2e) </br>
<Not Applicable>

Base year Scope 3, Category 6: Business travel emissions covered by target as % of total base year emissions in Scope 3, Category 6: Business travel (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Category 7: Employee commuting covered by target as % of total base year emissions in Scope 3, Category 7: Employee commuting (metric tons CO2e) <Not Applicable>

Base year Scope 3, Category 8: Upstream leased assets emissions covered by target as % of total base year emissions in Scope 3, Category 8: Upstream leased assets (metric tons CO2e) </br>

Base year Scope 3, Category 9: Downstream transportation and distribution emissions covered by target as % of total base year emissions in Scope 3, Category 9: Downstream transportation and distribution (metric tons CO2e) 

<Not Applicable>

Base year Scope 3, Category 10: Processing of sold products emissions covered by target as % of total base year emissions in Scope 3, Category 10: Processing of sold products (metric tons CO2e) </br>
<Not Applicable>

Base year Scope 3, Category 11: Use of sold products emissions covered by target as % of total base year emissions in Scope 3, Category 11: Use of sold products (metric tons CO2e) <Not Applicable>

Base year Scope 3, Category 12: End-of-life treatment of sold products emissions covered by target as % of total base year emissions in Scope 3, Category 12: End-of-life treatment of sold products (metric tons CO2e) </br>

Base year Scope 3, Category 13: Downstream leased assets emissions covered by target as % of total base year emissions in Scope 3, Category 13: Downstream leased assets (metric tons CO2e) </br><Not Applicable>

Base year Scope 3, Category 14: Franchises emissions covered by target as % of total base year emissions in Scope 3, Category 14: Franchises (metric tons CO2e)
<Not Applicable>

<inot Applicable>

Base year Scope 3, Category 15: Investments emissions covered by target as % of total base year emissions in Scope 3, Category 15: Investments (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Other (upstream) emissions covered by target as % of total base year emissions in Scope 3, Other (upstream) (metric tons CO2e) <Not Applicable>

Base year Scope 3, Other (downstream) emissions covered by target as % of total base year emissions in Scope 3, Other (downstream) (metric tons CO2e) <Not Applicable>

Base year total Scope 3 emissions covered by target as % of total base year emissions in Scope 3 (in all Scope 3 categories) <Not Applicable>

Base year emissions covered by target in all selected Scopes as % of total base year emissions in all selected Scopes

100

Target year 2040

Targeted reduction from base year (%)

95

Total emissions in target year covered by target in all selected Scopes (metric tons CO2e) [auto-calculated] 88850

Scope 1 emissions in reporting year covered by target (metric tons CO2e) 391000

Scope 2 emissions in reporting year covered by target (metric tons CO2e)

776000

Scope 3, Category 1: Purchased goods and services emissions in reporting year covered by target (metric tons CO2e)

<Not Applicable>

Scope 3, Category 2: Capital goods emissions in reporting year covered by target (metric tons CO2e) <Not Applicable>

Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) emissions in reporting year covered by target (metric tons CO2e) <Not Applicable>

Scope 3, Category 4: Upstream transportation and distribution emissions in reporting year covered by target (metric tons CO2e) <Not Applicable>

Scope 3, Category 5: Waste generated in operations emissions in reporting year covered by target (metric tons CO2e) <Not Applicable>

Scope 3, Category 6: Business travel emissions in reporting year covered by target (metric tons CO2e) <Not Applicable> Scope 3, Category 7: Employee commuting emissions in reporting year covered by target (metric tons CO2e) <Not Applicable>

Scope 3, Category 8: Upstream leased assets emissions in reporting year covered by target (metric tons CO2e) <Not Applicable>

Scope 3, Category 9: Downstream transportation and distribution emissions in reporting year covered by target (metric tons CO2e) <Not Applicable>

Scope 3, Category 10: Processing of sold products emissions in reporting year covered by target (metric tons CO2e) <Not Applicable>

Scope 3, Category 11: Use of sold products emissions in reporting year covered by target (metric tons CO2e) <Not Applicable>

Scope 3, Category 12: End-of-life treatment of sold products emissions in reporting year covered by target (metric tons CO2e) <Not Applicable>

Scope 3, Category 13: Downstream leased assets emissions in reporting year covered by target (metric tons CO2e) <Not Applicable>

Scope 3, Category 14: Franchises emissions in reporting year covered by target (metric tons CO2e) <Not Applicable>

Scope 3, Category 15: Investments emissions in reporting year covered by target (metric tons CO2e) <Not Applicable>

Scope 3, Other (upstream) emissions in reporting year covered by target (metric tons CO2e) <Not Applicable>

Scope 3, Other (downstream) emissions in reporting year covered by target (metric tons CO2e) <Not Applicable>

Total Scope 3 emissions in reporting year covered by target (metric tons CO2e) <Not Applicable>

Total emissions in reporting year covered by target in all selected scopes (metric tons CO2e) 1167000

Does this target cover any land-related emissions?

No, it does not cover any land-related emissions (e.g. non-FLAG SBT)

% of target achieved relative to base year [auto-calculated] 36.1342297781595

Target status in reporting year Underway

#### Please 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.

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 CO<sub>2</sub>e 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.

#### 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, a total of approx. 800 projects (2021: 555) has been implemented or initiated, which led to more than 121 GWh in energy savings (2021: 86.4 GWh). This corresponds to the electricity consumption of 30,000 average households and the avoidance of 46,600 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 23% in 2022, which contributed to emission reduction in 2022.

List the emissions reduction initiatives which contributed most to achieving this target

<Not Applicable>

# C4.1b

(C4.1b) Provide details of your emissions intensity target(s) and progress made against those target(s).

Target reference number

#### Int 1

#### Is this a science-based target?

Yes, and this target has been approved by the Science Based Targets initiative

Target ambition 2°C aligned

Year target was set

Target coverage Company-wide

Scope(s)

Scope 3

Scope 2 accounting method <Not Applicable>

#### Scope 3 category(ies)

- Category 1: Purchased goods and services
- Category 2: Capital goods
- Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2)
- Category 4: Upstream transportation and distribution
- Category 5: Waste generated in operations
- Category 6: Business travel
- Category 7: Employee commuting
- Category 9: Downstream transportation and distribution
- Category 10: Processing of sold products
- Category 12: End-of-life treatment of sold products

Category 15: Investments

## Intensity metric

Metric tons CO2e per unit revenue

Base year

2019

0.000004

Intensity figure in base year for Scope 1 (metric tons CO2e per unit of activity) <Not Applicable>

Intensity figure in base year for Scope 2 (metric tons CO2e per unit of activity) <Not Applicable>

Intensity figure in base year for Scope 3, Category 1: Purchased goods and services (metric tons CO2e per unit of activity) 0.000592

Intensity figure in base year for Scope 3, Category 2: Capital goods (metric tons CO2e per unit of activity) 0.000039

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

Intensity figure in base year for Scope 3, Category 4: Upstream transportation and distribution (metric tons CO2e per unit of activity) 0.000028

Intensity figure in base year for Scope 3, Category 5: Waste generated in operations (metric tons CO2e per unit of activity) 0.000003

Intensity figure in base year for Scope 3, Category 6: Business travel (metric tons CO2e per unit of activity)

Intensity figure in base year for Scope 3, Category 7: Employee commuting (metric tons CO2e per unit of activity) 0 000004

Intensity figure in base year for Scope 3, Category 8: Upstream leased assets (metric tons CO2e per unit of activity) <Not Applicable>

Intensity figure in base year for Scope 3, Category 9: Downstream transportation and distribution (metric tons CO2e per unit of activity) 0.00001

Intensity figure in base year for Scope 3, Category 10: Processing of sold products (metric tons CO2e per unit of activity) 0.000002

Intensity figure in base year for Scope 3, Category 11: Use of sold products (metric tons CO2e per unit of activity) <Not Applicable>

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

Intensity figure in base year for Scope 3, Category 13: Downstream leased assets (metric tons CO2e per unit of activity) <Not Applicable>

Intensity figure in base year for Scope 3, Category 14: Franchises (metric tons CO2e per unit of activity) <Not Applicable>

Intensity figure in base year for Scope 3, Category 15: Investments (metric tons CO2e per unit of activity) 0.000001

Intensity figure in base year for Scope 3, Other (upstream) (metric tons CO2e per unit of activity)

<Not Applicable>

Intensity figure in base year for Scope 3, Other (downstream) (metric tons CO2e per unit of activity) <Not Applicable>

Intensity figure in base year for total Scope 3 (metric tons CO2e per unit of activity) 0.000689

Intensity figure in base year for all selected Scopes (metric tons CO2e per unit of activity) 0.000689

% of total base year emissions in Scope 1 covered by this Scope 1 intensity figure <Not Applicable>

% of total base year emissions in Scope 2 covered by this Scope 2 intensity figure <Not Applicable>

% 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

% of total base year emissions in Scope 3, Category 2: Capital goods covered by this Scope 3, Category 2: Capital goods intensity figure 100

% 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

% 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

% 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

% of total base year emissions in Scope 3, Category 6: Business travel covered by this Scope 3, Category 6: Business travel intensity figure 100

% of total base year emissions in Scope 3, Category 7: Employee commuting covered by this Scope 3, Category 7: Employee commuting intensity figure 100

% of total base year emissions in Scope 3, Category 8: Upstream leased assets covered by this Scope 3, Category 8: Upstream leased assets intensity figure <Not Applicable>

% 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

% 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

% of total base year emissions in Scope 3, Category 11: Use of sold products covered by this Scope 3, Category 11: Use of sold products intensity figure <Not Applicable>

% 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

% of total base year emissions in Scope 3, Category 13: Downstream leased assets covered by this Scope 3, Category 13: Downstream leased assets intensity figure

<Not Applicable>

% of total base year emissions in Scope 3, Category 14: Franchises covered by this Scope 3, Category 14: Franchises intensity figure <Not Applicable>

% of total base year emissions in Scope 3, Category 15: Investments covered by this Scope 3, Category 15: Investments intensity figure 100

% of total base year emissions in Scope 3, Other (upstream) covered by this Scope 3, Other (upstream) intensity figure <Not Applicable>

% of total base year emissions in Scope 3, Other (downstream) covered by this Scope 3, Other (downstream) intensity figure <Not Applicable>

% of total base year emissions in Scope 3 (in all Scope 3 categories) covered by this total Scope 3 intensity figure 92

% of total base year emissions in all selected Scopes covered by this intensity figure 100

Target year

Targeted reduction from base year (%)

40

Intensity figure in target year for all selected Scopes (metric tons CO2e per unit of activity) [auto-calculated] 0.0004134

% change anticipated in absolute Scope 1+2 emissions 0

% change anticipated in absolute Scope 3 emissions -13.5

Intensity figure in reporting year for Scope 1 (metric tons CO2e per unit of activity) <Not Applicable>

Intensity figure in reporting year for Scope 2 (metric tons CO2e per unit of activity) <Not Applicable>

Intensity figure in reporting year for Scope 3, Category 1: Purchased goods and services (metric tons CO2e per unit of activity) 0.000378

Intensity figure in reporting year for Scope 3, Category 2: Capital goods (metric tons CO2e per unit of activity) 0.000021

Intensity figure in reporting 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

Intensity figure in reporting year for Scope 3, Category 4: Upstream transportation and distribution (metric tons CO2e per unit of activity) 0.000018

Intensity figure in reporting year for Scope 3, Category 5: Waste generated in operations (metric tons CO2e per unit of activity) 0.000003

Intensity figure in reporting year for Scope 3, Category 6: Business travel (metric tons CO2e per unit of activity) 0.000001

Intensity figure in reporting year for Scope 3, Category 7: Employee commuting (metric tons CO2e per unit of activity) 0.000003

Intensity figure in reporting year for Scope 3, Category 8: Upstream leased assets (metric tons CO2e per unit of activity) <Not Applicable>

Intensity figure in reporting year for Scope 3, Category 9: Downstream transportation and distribution (metric tons CO2e per unit of activity) 0.000007

Intensity figure in reporting year for Scope 3, Category 10: Processing of sold products (metric tons CO2e per unit of activity) 0.000001

Intensity figure in reporting year for Scope 3, Category 11: Use of sold products (metric tons CO2e per unit of activity) <Not Applicable>

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

Intensity figure in reporting year for Scope 3, Category 13: Downstream leased assets (metric tons CO2e per unit of activity) <Not Applicable>

Intensity figure in reporting year for Scope 3, Category 14: Franchises (metric tons CO2e per unit of activity) <Not Applicable>

Intensity figure in reporting year for Scope 3, Category 15: Investments (metric tons CO2e per unit of activity) 1e-7

Intensity figure in reporting year for Scope 3, Other (upstream) (metric tons CO2e per unit of activity) <Not Applicable>

Intensity figure in reporting year for Scope 3, Other (downstream) (metric tons CO2e per unit of activity) <Not Applicable>

Intensity figure in reporting year for total Scope 3 (metric tons CO2e per unit of activity) 0.000442

Intensity figure in reporting year for all selected Scopes (metric tons CO2e per unit of activity) 0.000442

Does this target cover any land-related emissions? No, it does not cover any land-related emissions (e.g. non-FLAG SBT)

% of target achieved relative to base year [auto-calculated] 89.622641509434

Target status in reporting year Underway

### Please 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 CO<sub>2</sub>e 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 is 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 (<4%) but considered as relevant. 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 2022 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).

#### Plan for achieving target, and progress made to the end of the reporting year

Supply Chain Management & Engagement

In order to strengthen all sustainability-relevant activities within the supplier base, ZF Materials Management has set up a team for sustainability in the supply chain. In 2021, this team developed a decarbonization roadmap based on the goal of achieving climate neutrality by 2040. The corresponding expectations were already communicated to the suppliers at the digital Global Supplier Summit in 2020. In addition, individual information letters were sent to each supplier. On this basis, ZF launched 2021 a new campaign to identify the ten suppliers causing the largest amounts of greenhouse gases (based on the CO2 equivalents or CO2e) for each product category. Subsequently, the maturity level of the individual suppliers was considered in terms of their respective climate management, use of recycled materials and energy efficiency. Suppliers with a below-average valuation agreed with ZF on selected measures, with the focus being on CO2e reduction.

List the emissions reduction initiatives which contributed most to achieving this target

<Not Applicable>

# C4.2

(C4.2) Did you have any other climate-related targets that were active in the reporting year? Target(s) to increase low-carbon energy consumption or production Net-zero target(s) Other climate-related target(s)

#### (C4.2a) Provide details of your target(s) to increase low-carbon energy consumption or production.

Target reference number Low 1

Year target was set

Target coverage Company-wide

Target type: energy carrier Electricity

Target type: activity Consumption

Target type: energy source Renewable energy source(s) only

Base year 2019

Consumption or production of selected energy carrier in base year (MWh) 2559000

% share of low-carbon or renewable energy in base year 10

Target year

2030

% share of low-carbon or renewable energy in target year 100

% share of low-carbon or renewable energy in reporting year 23

% of target achieved relative to base year [auto-calculated] 14.4444444444444

Target status in reporting year Underway

#### 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 1+2), 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 2030.

Is this target part of an overarching initiative?

Science Based Targets initiative

## Please 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)

#### 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: 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.

In 2022 renewables accounted for 23% of the total electricity (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 increased to 5,729 MWh due to new photovoltaic power plants installed in 2022 at several sites, e.g., in South Africa, Germany, Great Britain and Poland.

# List the actions which contributed most to achieving this target

<Not Applicable>

## C4.2b

(C4.2b) Provide details of any other climate-related targets, including methane reduction targets.

Target reference number Oth 1

Year target was set 2020

Target coverage Company-wide

Target type: absolute or intensity Intensity

Target type: category & Metric (target numerator if reporting an intensity target)

# Target denominator (intensity targets only)

Other, please specify (value added in Mio €)

Base year 2019

Figure or percentage in base year 316

Target year 2030

Figure or percentage in target year 244

Figure or percentage in reporting year 276

% of target achieved relative to base year [auto-calculated] 55.555555555556

Target status in reporting year Underway

#### 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 1+2), 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.

With contributions from the energy efficiency projects, this target will be achieved by reducing energy consumption by 2 percent every year relative to value added (with 2019 as the base year).

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. Therefore, numbers stated here are the latest and differ from data of ZF Sustainability Report 2020.

#### Is this target part of an overarching initiative?

Science Based targets initiative - other

#### Please explain target coverage and identify any exclusions

ZF commits to reduce energy consumption per Million Euro value added by 2% per year from a 2019 base year. Target coverage according SBTi Validation process (operational control). The Group includes all production, administrative and research locations in its efficiency programs.

#### Plan for achieving target, and progress made to the end of the reporting year

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.

The KPI "enery in MWh per value add in Mio € sales" improved compared to previous year by 8% from figure 301 to 276. Compared to baseyear 2019 the figure improved by 13% from 316 to 276.

Overall, a total of approx. 800 projects (2021: 555) has been implemented or initiated, which led to more than 121 GWh in energy savings (2021: 86.4 GWh). This corresponds to the electricity consumption of 30,000 average households and the avoidance of 46,600 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.

# List the actions which contributed most to achieving this target

<Not Applicable>

Target reference number Oth 2

Year target was set 2022

Target coverage Company-wide

#### Target type: absolute or intensity Absolute

Target type: category & Metric (target numerator if reporting an intensity target)

Engagement with suppliers Other, please specify (Increase Green Electricity Spend Coverage with ZF's direct suppliers for Production Material to 100% by 2025)

# Target denominator (intensity targets only) <Not Applicable>

Base year

2021

# Figure or percentage in base year

Target year

Figure or percentage in target year

Figure or percentage in reporting year 35

% of target achieved relative to base year [auto-calculated] 9.7222222222222

Target status in reporting year New

#### 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.

Is this target part of an overarching initiative?

Science Based targets initiative - other

#### 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 < 10%). We focus on PM, where we identified high levers (Share PM >90%).

#### 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.

#### List the actions which contributed most to achieving this target

<Not Applicable>

#### (C4.2c) Provide details of your net-zero target(s).

Target reference number NZ1

Target coverage

Company-wide

#### Absolute/intensity emission target(s) linked to this net-zero target

Abs1 Abs2 Int1

#### Abc2

Int1

### Target year for achieving net zero

2040

#### Is this a science-based target?

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

#### Please explain target coverage and identify any exclusions

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. 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 Categories. The end of the categories are excluded, because there are not relevant for 21: Category 3: Opstream Leased Assets, Category 14: Franchises.

The core of ZF's climate strategy is the commitment 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. As for Scope 1 and Scope 2 emissions, 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.

Regarding Scope 3 emissions, the strategy focuses on improving product design, material selection, electrification and supply chain structures. To support target achievement, the Supervisory Board decided together with the Board of Management 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.

#### Do you intend to neutralize any unabated emissions with permanent carbon removals at the target year? Unsure

Planned milestones and/or near-term investments for neutralization at target year

<Not Applicable>

Planned actions to mitigate emissions beyond your value chain (optional)

# C4.3

(C4.3) 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.

Yes

# C4.3a

(C4.3a) 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	54	
To be implemented*	34	2100
Implementation commenced*	47	4500
Implemented*	800	46600
Not to be implemented	26	

#### C4.3b

(C4.3b) Provide details on the initiatives implemented in the reporting year in the table below.

#### Initiative category & Initiative type

Low-carbon energy generation

Solar PV

# Estimated annual CO2e savings (metric tonnes CO2e) 1100

Scope(s) or Scope 3 category(ies) where emissions savings occur Scope 2 (market-based)

#### Voluntary/Mandatory Voluntary

Annual monetary savings (unit currency – as specified in C0.4) 420000

#### Investment required (unit currency – as specified in C0.4) 1830000

Payback period

4-10 years

# Estimated lifetime of the initiative

16-20 years

Comment no comment

#### Initiative category & Initiative type

Energy efficiency in buildings

Other, please specify (mix of several/ main levers: Building envelope, HVAC, Lighting)

#### Estimated annual CO2e savings (metric tonnes CO2e) 15990

15990

### Scope(s) or Scope 3 category(ies) where emissions savings occur

Scope 1 Scope 2 (location-based) Scope 2 (market-based)

#### Voluntary/Mandatory Mandatory

Annual monetary savings (unit currency – as specified in C0.4)

4100000

Investment required (unit currency – as specified in C0.4) 10450000

## Payback period

1-3 years

# Estimated lifetime of the initiative

# 6-10 years

Data are a summarization of 257 projects which are classified as "building"-related efficiency measures.

## Initiative category & Initiative type

Energy efficiency in production processes Other, please specify (mix of several/ main levers: compressed air, exchange of electrical cabinets)

# Estimated annual CO2e savings (metric tonnes CO2e)

11560

# Scope(s) or Scope 3 category(ies) where emissions savings occur

Scope 1 Scope 2 (location-based) Scope 2 (market-based)

#### Voluntary/Mandatory Mandatory

Annual monetary savings (unit currency – as specified in C0.4) 2260000

Investment required (unit currency – as specified in C0.4) 2930000

Payback period 1-3 years

# Estimated lifetime of the initiative

6-10 years

# Comment

Data are a summarization of 178 projects which are classified as "process"-related efficiency measures.

# Initiative category & Initiative type

Other, please specify (Energy efficiency (others))

#### Estimated annual CO2e savings (metric tonnes CO2e) 19050

Scope(s) or Scope 3 category(ies) where emissions savings occur Scope 1 Scope 2 (location-based) Scope 2 (market-based)

## Voluntary/Mandatory Mandatory

Annual monetary savings (unit currency - as specified in C0.4) 3500000

Investment required (unit currency - as specified in C0.4) 5100000

# Payback period

1-3 years

# Estimated lifetime of the initiative

6-10 years Comment

Data are a summarization of 365 projects which are not only classified as "building or production"-related efficiency measures, because they have effects on both and/ or further categories.

# C4.3c

#### (C4.3c) What methods do you use to drive investment in emissions reduction activities?

Method	Comment
Employee engagement	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.
Compliance with regulatory requirements/standards	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.
Dedicated budget for low-carbon product R&D	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 2021, we invested €3,425 million (202: €3,060 million; 2020: €2,516 million; 2019: €2,652 million) in research and development. This corresponds to a sales share of 7.8% (2021: 8%; 2020: 7.7%; 2019: 7.3%). 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.
Lower return on investment (ROI) specification	Extended return periods for all efficiency measures to achieve energy efficiency targets.
Other (The ZF WAY)	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 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 The ZF Way 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 The operating model serves as a framework for global cooperation characterized by the 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 May principles The operating model serves as a framework for global cooperation characterized by the 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 May principles.
# C4.5a

# (C4.5a) Provide details of your products and/or services that you classify as low-carbon products.

# Level of aggregation

Group of products or services

# Taxonomy used to classify product(s) or service(s) as low-carbon

Green Bond Principles (ICMA) Type of product(s) or service(s)

Other Other, please specify (Wind Power)

#### Description of product(s) or service(s)

Renewable Energy: ZF Technology in Wind Turbines (wind turbine gearboxes) | ZF Wind Power Technology

Have you estimated the avoided emissions of this low-carbon  $\operatorname{product}(s)$  or  $\operatorname{service}(s)$ 

Yes

# Methodology used to calculate avoided emissions

The Avoided Emissions Framework (AEF)

#### Life cycle stage(s) covered for the low-carbon product(s) or services(s)

Use stage

# Functional unit used

Renewable Energy: ZF Technology in Wind Turbines (wind turbine gearboxes). See ZF Green Finance Report 2023: https://www.zf.com/master/media/corporate/m\_zf\_com/company/bonds\_relations\_/sustainable\_finance/zf\_green\_finance\_reports/ZF\_Green\_Finance\_Report\_2023.pdf

# Reference product/service or baseline scenario used

Wind turbine with word emission factor of 389.2 gCO2/kWh according to the International Energy Agency's (IEA) Policy and Sustainable Development Scenario. See ZF Green Finance Report 2023:

https://www.zf.com/master/media/corporate/m\_zf\_com/company/bonds\_relations\_/sustainable\_finance/zf\_green\_finance\_reports/ZF\_Green\_Finance\_Report\_2023.pdf

# Life cycle stage(s) covered for the reference product/service or baseline scenario Use stage

# Estimated avoided emissions (metric tons CO2e per functional unit) compared to reference product/service or baseline scenario 16289564

#### Explain your calculation of avoided emissions, including any assumptions

The business unit Wind Power is essentially a pure play sustainable activity in accordance with the EU activity "3.1 Manufacture of renewable energy technologies" as per EU Taxonomy. With respect to the development, manufacture and distribution of wind turbine gear units, ZF committed to report on three impact indicators: the number of wind turbines covered, annual renewable energy generated and estimate of annual GHG avoided/reduced during use. In 2022, ZF covered approximately 3.200 wind turbine gear units and contributed to an installed capacity of approximately 14.000 MW, considering the wind turbine gear units' respective power classes. As the annual 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 41,853,966 MWh. Using a world emission factor of 389.2 g CO2 per kWh, derived from the International Energy Agency (IEA)'s Policy and Sustainable Development Scenario, ZF estimates to have avoided 16,289,564 t CO2 of annual GHG during use in 2022.

# Revenue generated from low-carbon product(s) or service(s) as % of total revenue in the reporting year

2.5

# C5. Emissions methodology

C5.1

(C5.1) Is this your first year of reporting emissions data to CDP? No

# C5.1a

(C5.1a) 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?

#### Row 1

# Has there been a structural change?

Yes, a divestment

# Name of organization(s) acquired, divested from, or merged with

OOO ZF Russia, Saint Petersburg, Russia

# Details of structural change(s), including completion dates

As a result of the Russia-Ukraine war, the shares of OOO ZF Kama, headquartered in Naberezhnye Chelny (Russia), were sold with effect from September 12, 2022. Disclosure excludes data for the whole reporting year.

# C5.1b

(C5.1b) Has your emissions accounting methodology, boundary, and/or reporting year definition changed in the reporting year?

Change(s) in methodology, boundary, and/or reporting		Details of methodology, boundary, and/or reporting year definition change(s)
	year definition?	
Row	Yes, a change in boundary	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 sites are
1		considered for emission reporting with limited efforts. Additional rules have been defined to align reporting boundaries with financial KPIs. For small sites, generic emission
		factors are applied related to the number of employees assigned.

# C5.1c

(C5.1c) Have your organization's base year emissions and past years' emissions been recalculated as a result of any changes or errors reported in C5.1a and/or C5.1b?

	Base year recalculation Scope(s)		Base year emissions recalculation policy, including significance threshold	Past years'
		recalculated		recalculation
Row	No, because the impact does not meet our	<not applicable=""></not>	No recalculation performed, because the impact of the structural change (C5.1a) and boundary change (C5.1b) are	No
1	significance threshold		identified as not material (< 1% ).	

# C5.2

# (C5.2) Provide your base year and base year emissions.

#### Scope 1

Base year start January 1 2019

#### Base year end

December 31 2019

# Base year emissions (metric tons CO2e) 406000

# Comment

Climate neutrality by 2040 is an essential part of the ZF strategy. With the ZF Climate Ambition Initiative launched in 2021, ZF has a clear, low-carbon transition plan up to climate neutrality in 2040. ZF Climate Ambition Target: ZF Friedrichshafen AG commits to reduce absolute Scope 1 & 2 GHG emissions 80% by 2030 from a 2019 base year.

Base year 2019 figures have been recalculated accordingly to include the former WABCO sites.

# Scope 2 (location-based)

Base year start January 1 2019

# Base year end

December 31 2019

# Base year emissions (metric tons CO2e)

# 1437000

# Comment

Climate neutrality by 2040 is an essential part of the ZF strategy. With the ZF Climate Ambition Initiative launched in 2021, ZF has a clear, low-carbon transition plan up to climate neutrality in 2040. ZF Climate Ambition Target: ZF Friedrichshafen AG commits to reduce absolute Scope 1 & 2 GHG emissions 80% by 2030 from a 2019 base year.

Base year 2019 figures have been recalculated accordingly to include former WABCO sites.

# Scope 2 (market-based)

Base year start

January 1 2019

Base year end December 31 2019

Base year emissions (metric tons CO2e)

1371000

# Comment

Climate neutrality by 2040 is an essential part of the ZF strategy. With the ZF Climate Ambition Initiative launched in 2021, ZF has a clear, low-carbon transition plan up to climate neutrality in 2040. ZF Climate Ambition Target: ZF Friedrichshafen AG commits to reduce absolute Scope 1 & 2 GHG emissions by 80% by 2030 from a 2019 base year.

Base year 2019 figures have been recalculated accordingly to include former WABCO sites.

Scope 3 category 1: Purchased goods and services

Base year start January 1 2019

Base year end December 31 2019

#### Base year emissions (metric tons CO2e) 21688000

#### Comment

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. Reported data are base year 2019 values that have been recalculated accordingly to include former WABCO sites.

# Scope 3 category 2: Capital goods

Base year start January 1 2019

# Base year end

December 31 2019

Base year emissions (metric tons CO2e) 1485000

#### Comment

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. Reported data are base year 2019 values that have been recalculated accordingly to include former WABCO sites.

# Scope 3 category 3: Fuel-and-energy-related activities (not included in Scope 1 or 2)

Base year start January 1 2019

Base year end

December 31 2019

#### Base year emissions (metric tons CO2e) 222000

# Comment

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. Reported data are base year 2019 values that have been recalculated accordingly to include former WABCO sites.

Scope 3 category 4: Upstream transportation and distribution

Base year start January 1 2019

Base year end December 31 2019

# Base year emissions (metric tons CO2e)

1127000

# Comment

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. Reported data are base year 2019 values that have been recalculated accordingly to include former WABCO sites.

# Scope 3 category 5: Waste generated in operations

Base year start

January 1 2019

Base year end December 31 2019

#### Base year emissions (metric tons CO2e)

131000

#### Comment

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. Reported data are base year 2019 values that have been recalculated accordingly to include former WABCO sites.

### Scope 3 category 6: Business travel

Base year start January 1 2019

# Base year end

December 31 2019

# Base year emissions (metric tons CO2e)

113000

### Comment

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. Reported data are base year 2019 values that have been recalculated accordingly to include former WABCO sites.

# Scope 3 category 7: Employee commuting

Base year start January 1 2019

# Base year end

December 31 2019

#### Base year emissions (metric tons CO2e) 149000

#### Comment

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. Reported data are base year 2019 values that have been recalculated accordingly to include former WABCO sites.

# Scope 3 category 8: Upstream leased assets

Base year start January 1 2019

Base year end December 31 2019

# Base year emissions (metric tons CO2e) 0

#### Comment not applicable.

Leased assets are reported together with owned properties in the according sections of scope 1, 2 and 3. There are a few exceptions which are small offices with no production site and very low energy consumption (< 1%) and emissions. Therefore, this category has been defined as not relevant.

Scope 3 category 9: Downstream transportation and distribution

Base year start January 1 2019

# Base year end

December 31 2019

#### Base year emissions (metric tons CO2e) 415000

# Comment

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. Reported data are base year 2019 values that have been recalculated accordingly to include former WABCO sites.

#### Scope 3 category 10: Processing of sold products

Base year start

January 1 2019

Base year end December 31 2019

# Base year emissions (metric tons CO2e)

60000

#### Comment

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. Reported data are base year 2019 values that have been recalculated accordingly to include former WABCO sites.

# Scope 3 category 11: Use of sold products

Base year start January 1 2019

# Base year end

December 31 2019

#### Base year emissions (metric tons CO2e) 77235000

#### Comment

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. Reported data are base year 2019 values that have been recalculated accordingly to include former WABCO sites.

Reported figure in metric tons CO2e (77.235.000) is the sum of direct (8.414.000) and indirect (68.821.000) use phase emissions (see Annual Report 2022, page 63).

# Scope 3 category 12: End of life treatment of sold products

Base year start January 1 2019

Base year end December 31 2019

# Base year emissions (metric tons CO2e)

71000

#### Comment

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. Reported data are base year 2019 values that have been recalculated accordingly to include former WABCO sites.

# Scope 3 category 13: Downstream leased assets

Base year start

January 1 2019

# Base year end December 31 2019

Base year emissions (metric tons CO2e)

#### 0

Comment

#### not applicable.

Leased assets are reported together with owned properties in the according sections of scope 1, 2 and 3. There are a few exceptions which are small offices with no production site and very low energy consumption (< 1%) and emissions. Therefore, this category has been defined as not relevant.

### Scope 3 category 14: Franchises

Base year start January 1 2019

Base year end December 31 2019

#### Base year emissions (metric tons CO2e)

0

# Comment

not applicable.

ZF Group does not have franchises with partners on a relevant scale.

# Scope 3 category 15: Investments

Base year start

January 1 2019

Base year end December 31 2019

Base year emissions (metric tons CO2e) 22000

# Comment

Based on the latest evaluation, category 3.15 was evaluated as "low material". However, ZF decided to include the category into the annual report and the SBTi target scope. Scope 3 category 15 was not reported separately in reporting year 2020.

# Scope 3: Other (upstream)

Base year start January 1 2019

Base year end December 31 2019

Base year emissions (metric tons CO2e)

0

Comment no other

# Scope 3: Other (downstream)

Base year start January 1 2019

Base year end December 31 2019

Base year emissions (metric tons CO2e) 0

no other

# C5.3

(C5.3) Select the name of the standard, protocol, or methodology you have used to collect activity data and calculate emissions.

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)

# C6. Emissions data

C6.1

#### (C6.1) What were your organization's gross global Scope 1 emissions in metric tons CO2e?

#### Reporting year

Gross global Scope 1 emissions (metric tons CO2e) 391000

# Start date

January 1 2022

#### End date

December 31 2022

# Comment

ZF commits to reduce absolute Scope 1 & 2 GHG emissions 80% by 2030 from a 2019 base year. This new absolute reduction target, which was announced in 2021, 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 CO<sub>2</sub>e 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 have been reviewed to meet future criteria on auditability.

# Past year 1

Gross global Scope 1 emissions (metric tons CO2e) 416000

Start date

January 1 2021

End date

December 31 2021

#### Comment

ZF commits to reduce absolute Scope 1 & 2 GHG emissions 80% by 2030 from a 2019 base year. This new absolute reduction target, which was announced in 2021, 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 CO<sub>2</sub>e 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 have been reviewed to meet future criteria on auditability.

# Past year 2

Gross global Scope 1 emissions (metric tons CO2e) 406000

# Start date

January 1 2019

#### End date

December 31 2019

# Comment

# 2019 is base year

In accordance with the reporting in our annual report, we compare data with previous year and base year to monitor reduction and performance development.

# C6.2

#### (C6.2) Describe your organization's approach to reporting Scope 2 emissions.

# Row 1

# Scope 2, location-based

We are reporting a Scope 2, location-based figure

# Scope 2, market-based

We are reporting a Scope 2, market-based figure

# 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.

# C6.3

#### (C6.3) What were your organization's gross global Scope 2 emissions in metric tons CO2e?

#### Reporting year

Scope 2, location-based 1079000

Scope 2, market-based (if applicable) 776000

Start date

January 1 2022

End date

December 31 2022

#### Comment

ZF commits to reduce absolute Scope 1 & 2 GHG emissions 80% by 2030 from a 2019 base year. This new absolute reduction target, which was announced in 2021, 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 CO<sub>2</sub>e 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 have been reviewed to meet future criteria on auditability.

# Past year 1

Scope 2, location-based

Scope 2, market-based (if applicable)

941000

Start date January 1 2021

End date

December 31 2021

#### Comment

ZF commits to reduce absolute Scope 1 & 2 GHG emissions 80% by 2030 from a 2019 base year. This new absolute reduction target, which was announced in 2021, 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 CO<sub>2</sub>e 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 have been reviewed to meet future criteria on auditability.

# Past year 2

Scope 2, location-based

1437000

Scope 2, market-based (if applicable) 1371000

Start date

January 1 2019

End date

December 31 2019

# Comment

2019 is base year

In accordance with the reporting in our annual report, we compare data with previous year and base year to monitor reduction and performance development.

# C6.4

(C6.4) 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?

Yes

# C6.4a

(C6.4a) Provide details of the sources of Scope 1, Scope 2, or Scope 3 emissions that are within your selected reporting boundary which are not included in your disclosure.

# Source of excluded emissions HFCs, PFCs, NF3

# Scope(s) or Scope 3 category(ies)

Scope 1 Scope 2 (location-based) Scope 2 (market-based)

# Relevance of Scope 1 emissions from this source Emissions are not relevant

# Relevance of location-based Scope 2 emissions from this source Emissions are not relevant

Relevance of market-based Scope 2 emissions from this source Emissions are not relevant

Relevance of Scope 3 emissions from this source <Not Applicable>

Date of completion of acquisition or merger <Not Applicable>

Estimated percentage of total Scope 1+2 emissions this excluded source represents 0

Estimated percentage of total Scope 3 emissions this excluded source represents <Not Applicable>

# Explain why this source is excluded

According to SBTi validation excluded. HFC, PFC: fillings recorded (R-substances). Is used only in closed systems. Emissions only in case of incidents relevant and then reported in GRI. In 2022 no incident with leakages causing emissions, therefore estimated percentage of total emissions is 0%. Relevance of HFC/PFC is continually monitored and evaluated. NF3: no solar cell production or LCD screen technology production.

# Explain how you estimated the percentage of emissions this excluded source represents

Is used only in closed systems, emissions only. In 2022 no incident with leakages causing emissions, therefore estimated percentage of total emissions is 0%.

#### Source of excluded emissions SF6

# Scope(s) or Scope 3 category(ies)

Scope 1 Scope 2 (location-based) Scope 2 (market-based)

# Relevance of Scope 1 emissions from this source Emissions are not relevant

Relevance of location-based Scope 2 emissions from this source Emissions are not relevant

# Relevance of market-based Scope 2 emissions from this source

Emissions are not relevant

# Relevance of Scope 3 emissions from this source <Not Applicable>

Date of completion of acquisition or merger

<Not Applicable>

0

Estimated percentage of total Scope 1+2 emissions this excluded source represents

# Estimated percentage of total Scope 3 emissions this excluded source represents <Not Applicable>

#### Explain why this source is excluded According to SBTi validation excluded.

No SF6 emissions from ZF operations.

# Explain how you estimated the percentage of emissions this excluded source represents

No SF6 emissions from ZF operations (no emissions from insulation in medium / high voltage technology)

# C6.5

(C6.5) Account for your organization's gross global Scope 3 emissions, disclosing and explaining any exclusions.

#### Purchased goods and services

Evaluation status Relevant, calculated

Emissions in reporting year (metric tons CO2e) 16557000

#### Emissions calculation methodology

Average data method Spend-based method

Percentage of emissions calculated using data obtained from suppliers or value chain partners

# Please explain

0

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 subcommodity, 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

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e) 934000

#### **Emissions calculation methodology**

Spend-based method

Percentage of emissions calculated using data obtained from suppliers or value chain partners

# 0

# 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)

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e) 273000

# Emissions calculation methodology

Average data method

Percentage of emissions calculated using data obtained from suppliers or value chain partners

#### Please explain

0

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

Evaluation status Relevant, calculated

Emissions in reporting year (metric tons CO2e)

810000

# Emissions calculation methodology

Distance-based method

Percentage of emissions calculated using data obtained from suppliers or value chain partners

25

# 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). 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

**Evaluation status** 

#### Relevant, calculated

Emissions in reporting year (metric tons CO2e) 135000

#### **Emissions calculation methodology**

Hybrid method Waste-type-specific method Site-specific method

#### Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

# 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 5 Waste generated in operations carbon footprint calculation is based on extrapolation. Detailed and accurate waste data were currently only available for a number of sites and group of representative specific products. On company level only four categories are reported (hazardous or not, to recycling or disposal), which were used for an extrapolation.

No reliable primary data from suppliers available at this time. Supply chain sustainability program for development to enable suppliers is in place.

# **Business travel**

**Evaluation status** 

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

39000

# Emissions calculation methodology

Distance-based method

Percentage of emissions calculated using data obtained from suppliers or value chain partners

100

# 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**

**Evaluation status** 

Relevant, calculated

Emissions in reporting year (metric tons CO2e) 152000

#### Emissions calculation methodology

Average data method Distance-based method

Percentage of emissions calculated using data obtained from suppliers or value chain partners

Please explain

0

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).

No reliable primary data available at this time. Program for development of data quality is in place.

#### **Upstream leased assets**

Evaluation status

Not relevant, calculated

Emissions in reporting year (metric tons CO2e)

0

# Emissions calculation methodology

Other, please specify (Emissions from leased assets are reported together with owned properties in the according sections of scope 1, 2 and 3.)

#### Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

#### 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

# **Evaluation status**

Relevant, calculated

Emissions in reporting year (metric tons CO2e) 298000

# Emissions calculation methodology

Average data method

Percentage of emissions calculated using data obtained from suppliers or value chain partners

# Please explain

0

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

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e) 60000

#### Emissions calculation methodology

Average data method

Percentage of emissions calculated using data obtained from suppliers or value chain partners

#### 0

# 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

# **Evaluation status**

Relevant, calculated

# Emissions in reporting year (metric tons CO2e) 63372000

#### Emissions calculation methodology

Hybrid method Average data method Average product method Fuel-based method

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

# 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 (63372000) is the sum of direct (4563000) and indirect (58809000) use phase emissions (see Annual Report 2022, page 63).

#### End of life treatment of sold products

# **Evaluation status**

Relevant, calculated

Emissions in reporting year (metric tons CO2e) 110000

# Emissions calculation methodology

Hybrid method Average data method Spend-based method Average product method Waste-type-specific method

Percentage of emissions calculated using data obtained from suppliers or value chain partners

#### Please explain

0

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

# **Evaluation status**

Not relevant, calculated

# Emissions in reporting year (metric tons CO2e)

0

# Emissions calculation methodology

Other, please specify (Emissions from leased assets are reported together with owned properties in the according sections of scope 1, 2 and 3.)

Percentage of emissions calculated using data obtained from suppliers or value chain partners

#### 0

# 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

# **Evaluation status**

Not relevant, explanation provided

# Emissions in reporting year (metric tons CO2e) <Not Applicable>

Emissions calculation methodology

# <Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners

# <Not Applicable> Please explain

ZF Group has no significant franchises and therefore this category can be neglected.

# Investments

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e) 4000

# Emissions calculation methodology

# Investment-specific method

Percentage of emissions calculated using data obtained from suppliers or value chain partners

#### Please explain

0

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)

# **Evaluation status**

Not evaluated

Emissions in reporting year (metric tons CO2e) </br><Not Applicable>

Emissions calculation methodology <Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners <Not Applicable>

Please explain not applicable

#### Other (downstream)

Evaluation status Not evaluated

Emissions in reporting year (metric tons CO2e) </br><Not Applicable>

Emissions calculation methodology

<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>
Please explain

not applicable

# C6.5a

(C6.5a) Disclose or restate your Scope 3 emissions data for previous years.

Past year 1

Start date January 1 2021

End date December 31 2021

Scope 3: Purchased goods and services (metric tons CO2e) 18994000

Scope 3: Capital goods (metric tons CO2e) 1188000

Scope 3: Fuel and energy-related activities (not included in Scopes 1 or 2) (metric tons CO2e) 236000

Scope 3: Upstream transportation and distribution (metric tons CO2e) 1357000

Scope 3: Waste generated in operations (metric tons CO2e) 136000

Scope 3: Business travel (metric tons CO2e) 21000

Scope 3: Employee commuting (metric tons CO2e) 145000

Scope 3: Upstream leased assets (metric tons CO2e) 0

Scope 3: Downstream transportation and distribution (metric tons CO2e) 499000

Scope 3: Processing of sold products (metric tons CO2e) 60000

Scope 3: Use of sold products (metric tons CO2e) 68935000

Scope 3: End of life treatment of sold products (metric tons CO2e) 94000

Scope 3: Downstream leased assets (metric tons CO2e) 0

Scope 3: Franchises (metric tons CO2e) 0

Scope 3: Investments (metric tons CO2e) 7000

Scope 3: Other (upstream) (metric tons CO2e) 0

0

Scope 3: Other (downstream) (metric tons CO2e) 0

# Comment

Scope 3 figures for past year 1 (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).

# Past year 2

Start date January 1 2019

End date

December 31 2019

Scope 3: Purchased goods and services (metric tons CO2e) 21688000

Scope 3: Capital goods (metric tons CO2e) 1485000

Scope 3: Fuel and energy-related activities (not included in Scopes 1 or 2) (metric tons CO2e) 222000

Scope 3: Upstream transportation and distribution (metric tons CO2e) 1127000

Scope 3: Waste generated in operations (metric tons CO2e) 131000

Scope 3: Business travel (metric tons CO2e) 113000

Scope 3: Employee commuting (metric tons CO2e) 149000

Scope 3: Upstream leased assets (metric tons CO2e)

Scope 3: Downstream transportation and distribution (metric tons CO2e) 415000

Scope 3: Processing of sold products (metric tons CO2e) 60000

Scope 3: Use of sold products (metric tons CO2e) 77235000

Scope 3: End of life treatment of sold products (metric tons CO2e) 71000

Scope 3: Downstream leased assets (metric tons CO2e) 0

Scope 3: Franchises (metric tons CO2e)

Scope 3: Investments (metric tons CO2e) 22000

Scope 3: Other (upstream) (metric tons CO2e) 0

0

Scope 3: Other (downstream) (metric tons CO2e) 0

# Comment

Scope 3 figures for past year 2 (2019 is base year).

Scope 3: Use of sold products (total 77235000metric tons CO2e) are divided into direct use of sold products (8414000 metric tons CO2e) and indirect use of sold products (68821000 metric tons CO2e).

In accordance with the reporting in our annual report, we compare data with previous year and base year to monitor reduction and performance development.

# C6.7

(C6.7) Are carbon dioxide emissions from biogenic carbon relevant to your organization? Yes

# C6.7a

(C6.7a) Provide the emissions from biogenic carbon relevant to your organization in metric tons CO2.

	CO2 emissions from biogenic carbon (metric tons CO2)	Comment
Row 1	162849	Figure represents Scope 2 (according to location-based approach) only, Scope 1 is zero. 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.

# C6.10

(C6.10) 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.

# Intensity figure

0.000027

Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO2e) 1167000

# Metric denominator

unit total revenue

# Metric denominator: Unit total 43801000000

Scope 2 figure used Market-based

# % change from previous year

25

#### Direction of change Decreased

# Reason(s) for change

Change in renewable energy consumption Other emissions reduction activities Change in revenue

# 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). Decrease of 25% results out of energy efficiency initiatives as well as increasing sales figure which is also influenced by inflation impacts.

# C7. Emissions breakdowns

# C7.1

(C7.1) Does your organization break down its Scope 1 emissions by greenhouse gas type?  $\ensuremath{\mathsf{Yes}}$ 

# C7.1a

(C7.1a) Break down your total gross global Scope 1 emissions by greenhouse gas type and provide the source of each used greenhouse warming potential (GWP).

Greenhouse gas Scope 1 emissions (metric tons of CO2e)		GWP Reference
CO2	389000	IPCC Fifth Assessment Report (AR5 – 100 year)
CH4	500	IPCC Fifth Assessment Report (AR5 – 100 year)
N2O	1500	IPCC Fifth Assessment Report (AR5 – 100 year)

# C7.2

# (C7.2) Break down your total gross global Scope 1 emissions by country/area/region.

Country/area/region	Scope 1 emissions (metric tons CO2e)
Argentina	1167
Austria	908
Belgium	5930
Brazil	8656
Canada	6714
China	14798
Czechia	2174
Denmark	25
France	2815
Germany	266748
United Kingdom of Great Britain and Northern Ireland	3147
Hungary	5597
India	2547
Italy	3837
Malaysia	0
Mexico	9015
Netherlands	180
Portugal	1076
Romania	2460
Slovakia	7941
South Africa	224
Republic of Korea	1869
Spain	6776
Taiwan, China	119
Thailand	1
Turkey	3304
United States of America	28440
Japan	57
Poland	3583
Viet Nam	16
Serbia	969
Singapore	0
Switzerland	69
United Arab Emirates	75
Australia	3

# C7.3

(C7.3) Indicate which gross global Scope 1 emissions breakdowns you are able to provide. By business division

# C7.3a

# (C7.3a) Break down your total gross global Scope 1 emissions by business division.

Business division	Scope 1 emissions (metric ton CO2e)
Active Safety Systems	19280
Car Chassis Technology	24167
Electrified Powertrain Technology	191087
Electronics and ADAS	5305
Passive Safety Systems	19279
Commerical Vehicle Solutions	65785
Industrial Technology	39771
Aftermarket	10097
Central Administration/Corporate Functions & Others	16468

# C7.5

# (C7.5) Break down your total gross global Scope 2 emissions by country/area/region.

Country/area/region	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
Argentina	1450	1404
Australia	198	198
Austria	6191	1179
Belgium	4565	5
Brazil	35921	7398
Canada	3060	651
China	217731	214196
Czechia	23071	1738
Denmark	22	22
France	1984	73
Germany	326904	211204
United Kingdom of Great Britain and Northern Ireland	8722	0
Hungary	7114	0
India	68883	68883
Italy	7334	0
Japan	1379	1459
Malaysia	1741	1741
Mexico	92129	79963
Netherlands	173	173
Poland	55567	7419
Portugal	2316	0
Romania	9137	396
Serbia	5599	1
Singapore	80	80
Slovakia	22503	402
South Africa	2482	2482
Republic of Korea	10847	9065
Spain	14739	3
Switzerland	19	19
Taiwan, China	313	313
Thailand	1596	1596
Turkey	10966	10966
United Arab Emirates	100	100
United States of America	133901	152884
Viet Nam	411	411

# C7.6

(C7.6) Indicate which gross global Scope 2 emissions breakdowns you are able to provide. By business division

# C7.6a

# (C7.6a) Break down your total gross global Scope 2 emissions by business division.

Business division	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
Active Safety Systems	188806	129057
Car Chassis Technology	119782	97877
Electrified Powertrain Technology	254055	181891
Electronics and ADAS	47043	42669
Passive Safety Systems	114643	76825
Commercial Vehicle Solutions	154224	97069
Industrial Technology	135155	109458
Aftermarket	23310	11430
Central Administration/Corporate Functions & Others	42129	30149

# C7.7

(C7.7) Is your organization able to break down your emissions data for any of the subsidiaries included in your CDP response? No

# C7.9

(C7.9) How do your gross global emissions (Scope 1 and 2 combined) for the reporting year compare to those of the previous reporting year? Decreased

# C7.9a

(C7.9a) 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 emissions (metric tons CO2e)	Direction of change in emissions	Emissions value (percentage)	Please explain calculation
Change in renewable energy consumption	54000	Decreased	5	Renewables accounted for 23% of the total purchased electricity (2021: 14%; 2020: 5.7%) in 2022– under guaranteed certified green power contracts. This change is a result of the initiatives and contract amendments within the ZF Green Power Roadmap. By 2030, the additionally purchased electricity shall be procured from purely renewable sources.
Other emissions reduction activities	46600	Decreased	4	Energy efficiency Program: Overall, around 800 projects (2021: 555) were implemented or initiated, which led to more than 121 GWh in energy savings (2021: 86.4 GWh). This corresponds to the electricity consumption of 30,000 average households and the avoidance of 46,600 tons of CO2e emissions.
Divestment	0	No change	0	No relevant Divestment in 2022.
Acquisitions	0	No change	0	No relevant Acquisitions in 2022.
Mergers	0	No change	0	No relevant Mergers in 2022.
Change in output	0	No change	0	Change in output (increase of sales) did not contribute to an increase of energy consumption or increase of emissions on a corporate level in 2022.
Change in methodology	0	No change	0	No relevant change in methodology in 2022.
Change in boundary	5600	Increased	0.5	Additional emissions considered by default location approach.
Change in physical operating conditions	0	No change	0	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	50000	Increased	4	Other effects around the world may have eliminated one another and cannot be differentiated or identiefied.
Other	145000	Decreased	12	Update of library of VDA emission factors, which are used for calculation of Scope 2 emissions caused by purchased electricity. The update reflects the improvement of the electricity mix leading to reduction of emissions due to increased share of electricity from renewable sources in public grid in several countries (e.g. emissions of ZF sites in India -19%).

# C7.9b

(C7.9b) Are your emissions performance calculations in C7.9 and C7.9a based on a location-based Scope 2 emissions figure or a market-based Scope 2 emissions figure?

Market-based

# C8. Energy

# C8.1

(C8.1) What percentage of your total operational spend in the reporting year was on energy? More than 5% but less than or equal to 10%

# C8.2

(C8.2) 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)	Yes
Consumption of purchased or acquired electricity	Yes
Consumption of purchased or acquired heat	Yes
Consumption of purchased or acquired steam	No
Consumption of purchased or acquired cooling	No
Generation of electricity, heat, steam, or cooling	Yes

# (C8.2a) Report your organization's energy consumption totals (excluding feedstocks) in MWh.

	Heating value	MWh from renewable sources	MWh from non-renewable sources	Total (renewable and non-renewable) MWh
Consumption of fuel (excluding feedstock)	LHV (lower heating value)	619	1866923	1867542
Consumption of purchased or acquired electricity	<not applicable=""></not>	570611	1906518	2477129
Consumption of purchased or acquired heat	<not applicable=""></not>	1312	168091	169403
Consumption of purchased or acquired steam	<not applicable=""></not>	<not applicable=""></not>	<not applicable=""></not>	<not applicable=""></not>
Consumption of purchased or acquired cooling	<not applicable=""></not>	<not applicable=""></not>	<not applicable=""></not>	<not applicable=""></not>
Consumption of self-generated non-fuel renewable energy	<not applicable=""></not>	5729	<not applicable=""></not>	5729
Total energy consumption	<not applicable=""></not>	578271	3941532	4519803

# C8.2b

# (C8.2b) 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	Yes
Consumption of fuel for the generation of heat	Yes
Consumption of fuel for the generation of steam	No
Consumption of fuel for the generation of cooling	No
Consumption of fuel for co-generation or tri-generation	Yes

# C8.2c

(C8.2c) State how much fuel in MWh your organization has consumed (excluding feedstocks) by fuel type.

# Sustainable biomass

Heating value

Unable to confirm heating value

# Total fuel MWh consumed by the organization

0

# MWh fuel consumed for self-generation of electricity

0

# MWh fuel consumed for self-generation of heat

0

# MWh fuel consumed for self-generation of steam <Not Applicable>

MWh fuel consumed for self-generation of cooling

<Not Applicable>

# MWh fuel consumed for self- cogeneration or self-trigeneration

Comment n/a, not consumed at ZF sites

,

# Other biomass

Heating value

Unable to confirm heating value

# Total fuel MWh consumed by the organization

0

# MWh fuel consumed for self-generation of electricity

0

0

# MWh fuel consumed for self-generation of heat 0

MWh fuel consumed for self-generation of steam <Not Applicable>

MWh fuel consumed for self-generation of cooling <Not Applicable>

# MWh fuel consumed for self- cogeneration or self-trigeneration

Comment

n/a, not consumed at ZF sites

# Other renewable fuels (e.g. renewable hydrogen)

# Heating value

LHV

Total fuel MWh consumed by the organization

# 619

MWh fuel consumed for self-generation of electricity 0

MWh fuel consumed for self-generation of heat 0

MWh fuel consumed for self-generation of steam <Not Applicable>

MWh fuel consumed for self-generation of cooling <Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration 0

# Comment

Bioethanol and Biodiesel used for mobile combustion (company fleet)

# Coal

Heating value

Unable to confirm heating value

Total fuel MWh consumed by the organization 0

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat 0

MWh fuel consumed for self-generation of steam <Not Applicable>

MWh fuel consumed for self-generation of cooling <Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration

# 0 Comment

n/a, not consumed at ZF sites

# Oil

Heating value

I HV

Total fuel MWh consumed by the organization 5731

MWh fuel consumed for self-generation of electricity 0

MWh fuel consumed for self-generation of heat 5731

MWh fuel consumed for self-generation of steam <Not Applicable>

MWh fuel consumed for self-generation of cooling <Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration 0

# Comment

Heating oil used for heat generation

#### Gas

# Heating value

LHV

Total fuel MWh consumed by the organization

# 1759307

MWh fuel consumed for self-generation of electricity

0

# MWh fuel consumed for self-generation of heat 1004780

MWh fuel consumed for self-generation of steam <Not Applicable>

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration 716287

# 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)

Heating value

LHV

Total fuel MWh consumed by the organization 100646

MWh fuel consumed for self-generation of electricity 0

MWh fuel consumed for self-generation of heat

MWh fuel consumed for self-generation of steam <Not Applicable>

MWh fuel consumed for self-generation of cooling <Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration

# Comment

0

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

Heating value

LHV

Total fuel MWh consumed by the organization 1867542

MWh fuel consumed for self-generation of electricity 0

MWh fuel consumed for self-generation of heat 1010511

MWh fuel consumed for self-generation of steam <Not Applicable>

MWh fuel consumed for self-generation of cooling <Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration 716287

#### Comment

Including all types of fuels for mobile and stationary applications

# C8.2d

#### (C8.2d) Provide details on the electricity, heat, steam, and cooling your organization has generated and consumed in the reporting year.

	Total Gross generation	Generation that is consumed by the	Gross generation from renewable sources	Generation from renewable sources that is consumed by the
	(MWh)	organization (MWh)	(MWh)	organization (MWh)
Electricity	309938	259637	5899	5729
Heat	204444	26086	0	0
Steam	0	0	0	0
Cooling	0	0	0	0

# C8.2e

(C8.2e) 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 C6.3.

# Country/area of low-carbon energy consumption

Germany

# Sourcing method

Physical power purchase agreement (physical PPA) with a grid-connected generator

Energy carrier Electricity

# Low-carbon technology type

# Wind

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh) 86000

# Tracking instrument used

Contract

Country/area of origin (generation) of the low-carbon energy or energy attribute

# Spain

Are you able to report the commissioning or re-powering year of the energy generation facility? Yes

# Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering) 2020

#### Comment

Renewable power for ZF locations in Germany

# Country/area of low-carbon energy consumption

Austria

# Sourcing method

Retail supply contract with an electricity supplier (retail green electricity)

Energy carrier Electricity

# Low-carbon technology type

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.)

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh) 24000

# Tracking instrument used

Contract

Austria

Country/area of origin (generation) of the low-carbon energy or energy attribute

Are you able to report the commissioning or re-powering year of the energy generation facility?

#### No

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

<Not Applicable>

# 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.

# Country/area of low-carbon energy consumption Belgium

# Sourcing method

Retail supply contract with an electricity supplier (retail green electricity)

#### Energy carrier Electricity

# Low-carbon technology type

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.)

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

30000

# Tracking instrument used

Contract

Country/area of origin (generation) of the low-carbon energy or energy attribute

# Belgium

Are you able to report the commissioning or re-powering year of the energy generation facility?

No

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

<Not Applicable>

# 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.

# Country/area of low-carbon energy consumption

China

# Sourcing method

Retail supply contract with an electricity supplier (retail green electricity)

Energy carrier

Electricity

# Low-carbon technology type

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.)

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

7000

# Tracking instrument used

Contract

Country/area of origin (generation) of the low-carbon energy or energy attribute

China

Are you able to report the commissioning or re-powering year of the energy generation facility?

No

#### Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering) <Not Applicable>

<NOL APPIICADI

# Comment

ZF purchased at 6 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.

# Country/area of low-carbon energy consumption

Czechia

# Sourcing method

Retail supply contract with an electricity supplier (retail green electricity)

Energy carrier Electricity

# Low-carbon technology type Hydropower (capacity unknown)

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

43000 Tracking instrument used

# GO

Country/area of origin (generation) of the low-carbon energy or energy attribute Czechia

Are you able to report the commissioning or re-powering year of the energy generation facility? No

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

#### <Not Applicable>

# Comment

ZF purchased at 7 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.

Country/area of low-carbon energy consumption

France

# Sourcing method

Retail supply contract with an electricity supplier (retail green electricity)

**Energy carrier** 

Electricity

#### Low-carbon technology type

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.)

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

34000

# Tracking instrument used

Contract

Country/area of origin (generation) of the low-carbon energy or energy attribute

France

Are you able to report the commissioning or re-powering year of the energy generation facility? No

# Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

<Not Applicable>

#### Comment

ZF purchased at 5 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.

# Country/area of low-carbon energy consumption

United Kingdom of Great Britain and Northern Ireland

# Sourcing method

Retail supply contract with an electricity supplier (retail green electricity)

Energy carrier

Electricity

# Low-carbon technology type

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.)

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh) 42000

# Tracking instrument used

Contract

Country/area of origin (generation) of the low-carbon energy or energy attribute United Kingdom of Great Britain and Northern Ireland

Are you able to report the commissioning or re-powering year of the energy generation facility?

No

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering) <Not Applicable>

#### Comment

ZF purchased at 10 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.

# Country/area of low-carbon energy consumption Hungary

Sourcing method

Retail supply contract with an electricity supplier (retail green electricity)

Energy carrier Electricity

#### Low-carbon technology type Hydropower (capacity unknown)

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh) 25000

# Tracking instrument used

GO

Country/area of origin (generation) of the low-carbon energy or energy attribute Norway

Are you able to report the commissioning or re-powering year of the energy generation facility?

# Yes

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

# 1964

Renewable power for ZF HUNGÁRIA KFT

Country/area of low-carbon energy consumption Italy

# Sourcing method

Retail supply contract with an electricity supplier (retail green electricity)

Energy carrier Electricity

# Low-carbon technology type

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.)

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh) 26000

Tracking instrument used

GO

Country/area of origin (generation) of the low-carbon energy or energy attribute

Finland

Are you able to report the commissioning or re-powering year of the energy generation facility?

No

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering) <Not Applicable>

# 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 Finland, Czechia and Denmark, but could be any other country within the same market boundary, e.g., AIB origin Europe.

Country/area of low-carbon energy consumption Poland

# Sourcing method

Retail supply contract with an electricity supplier (retail green electricity)

# Energy carrier

Electricity

# Low-carbon technology type

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.)

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

# Tracking instrument used

Contract

Poland

65000

Country/area of origin (generation) of the low-carbon energy or energy attribute

Are you able to report the commissioning or re-powering year of the energy generation facility? Yes

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering) 2010

# 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. Reported commissioning year above is the earliest of the relevant assets. Moreover, the country of generation could be any other country within the same market boundary, e.g., AIB origin Europe.

# Country/area of low-carbon energy consumption Portugal

#### Sourcing method

Retail supply contract with an electricity supplier (retail green electricity)

Energy carrier

Electricity

Low-carbon technology type Hydropower (capacity unknown)

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh) 9000

#### Tracking instrument used

GO

Country/area of origin (generation) of the low-carbon energy or energy attribute

Portugal

Are you able to report the commissioning or re-powering year of the energy generation facility? Yes

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering) 1954

# Comment

ZF purchased at 4 sites in the country green electricity

# Country/area of low-carbon energy consumption

Romania

# Sourcing method

Retail supply contract with an electricity supplier (retail green electricity)

Energy carrier Electricity

# Low-carbon technology type

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.)

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh) 23000

# Tracking instrument used

Contract

Country/area of origin (generation) of the low-carbon energy or energy attribute

Romania

Are you able to report the commissioning or re-powering year of the energy generation facility?

No

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering) <Not Applicable>

#### Comment

ZF purchased at 3 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.

# Country/area of low-carbon energy consumption

Serbia

# Sourcing method

Retail supply contract with an electricity supplier (retail green electricity)

Energy carrier

Electricity

Low-carbon technology type Hydropower (capacity unknown)

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh) 15000

# Tracking instrument used

GO

Country/area of origin (generation) of the low-carbon energy or energy attribute Serbia

Are you able to report the commissioning or re-powering year of the energy generation facility? Yes

# Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering) 1970

Comment

ZF purchased at 1 site in the country green electricity

# Country/area of low-carbon energy consumption

Slovakia

# Sourcing method

Retail supply contract with an electricity supplier (retail green electricity)

Energy carrier Electricity

Liectricity

# Low-carbon technology type

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.)

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh) 70000

Tracking instrument used

Contract

Country/area of origin (generation) of the low-carbon energy or energy attribute Slovakia

Are you able to report the commissioning or re-powering year of the energy generation facility?

No

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering) <Not Applicable>

#### Comment

ZF purchased at 5 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.

Country/area of low-carbon energy consumption Spain

#### Sourcing method

Retail supply contract with an electricity supplier (retail green electricity)

#### **Energy carrier**

Electricity

#### Low-carbon technology type

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.)

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

71000

# Tracking instrument used

Contract

Country/area of origin (generation) of the low-carbon energy or energy attribute

Spain

Are you able to report the commissioning or re-powering year of the energy generation facility? No

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

<Not Applicable>

# Comment

ZF purchased at 12 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.

# C8.2g

(C8.2g) Provide a breakdown by country/area of your non-fuel energy consumption in the reporting year.

# Country/area

Argentina

5162

Consumption of purchased electricity (MWh)

CDF

Consumption of self-generated electricity (MWh) 18

Is this electricity consumption excluded from your RE100 commitment? <Not Applicable>

Consumption of purchased heat, steam, and cooling (MWh) 0

Consumption of self-generated heat, steam, and cooling (MWh) 0

Total non-fuel energy consumption (MWh) [Auto-calculated] 5180

Country/area Australia

Consumption of purchased electricity (MWh) 271

Consumption of self-generated electricity (MWh) 0

Is this electricity consumption excluded from your RE100 commitment? <Not Applicable>

Consumption of purchased heat, steam, and cooling (MWh) 0

Consumption of self-generated heat, steam, and cooling (MWh) 0

Total non-fuel energy consumption (MWh) [Auto-calculated] 271

Country/area Austria

Consumption of purchased electricity (MWh) 23248

Consumption of self-generated electricity (MWh) 0

Is this electricity consumption excluded from your RE100 commitment? <Not Applicable>

Consumption of purchased heat, steam, and cooling (MWh) 5700

Consumption of self-generated heat, steam, and cooling (MWh)  $\ensuremath{\mathsf{0}}$ 

Total non-fuel energy consumption (MWh) [Auto-calculated] 28948

Country/area Belgium

Consumption of purchased electricity (MWh) 30122

Consumption of self-generated electricity (MWh) 0

Is this electricity consumption excluded from your RE100 commitment? <Not Applicable>

Consumption of purchased heat, steam, and cooling (MWh)  $\ensuremath{0}$ 

Consumption of self-generated heat, steam, and cooling (MWh)  $\ensuremath{\mathsf{0}}$ 

Total non-fuel energy consumption (MWh) [Auto-calculated] 30122

Country/area Brazil

Consumption of purchased electricity (MWh) 170695

Consumption of self-generated electricity (MWh) 0

Is this electricity consumption excluded from your RE100 commitment? <Not Applicable> Consumption of purchased heat, steam, and cooling (MWh) 0

Consumption of self-generated heat, steam, and cooling (MWh)  $\ensuremath{\textbf{0}}$ 

Total non-fuel energy consumption (MWh) [Auto-calculated] 170695

Country/area Canada

Consumption of purchased electricity (MWh) 20277

Consumption of self-generated electricity (MWh) 0

Is this electricity consumption excluded from your RE100 commitment? <Not Applicable>

Consumption of purchased heat, steam, and cooling (MWh)  $\ensuremath{\mathsf{0}}$ 

Consumption of self-generated heat, steam, and cooling (MWh)

Total non-fuel energy consumption (MWh) [Auto-calculated] 20277

Country/area China

Consumption of purchased electricity (MWh) 319511

Consumption of self-generated electricity (MWh)

Is this electricity consumption excluded from your RE100 commitment? <Not Applicable>

Consumption of purchased heat, steam, and cooling (MWh) 9610

Consumption of self-generated heat, steam, and cooling (MWh)  $\ensuremath{\mathsf{0}}$ 

Total non-fuel energy consumption (MWh) [Auto-calculated] 329121

Country/area Czechia

Consumption of purchased electricity (MWh) 43428

Consumption of self-generated electricity (MWh) 0

Is this electricity consumption excluded from your RE100 commitment? <Not Applicable>

Consumption of purchased heat, steam, and cooling (MWh) 5997

Consumption of self-generated heat, steam, and cooling (MWh)  $\ensuremath{\mathsf{0}}$ 

Total non-fuel energy consumption (MWh) [Auto-calculated] 49425

Country/area Denmark

Consumption of purchased electricity (MWh) 118

Consumption of self-generated electricity (MWh)

0

Is this electricity consumption excluded from your RE100 commitment? <Not Applicable>

Consumption of purchased heat, steam, and cooling (MWh)

0

Consumption of self-generated heat, steam, and cooling (MWh) 0

Total non-fuel energy consumption (MWh) [Auto-calculated] 118

Country/area France

Consumption of purchased electricity (MWh) 34662

Consumption of self-generated electricity (MWh) 0

Is this electricity consumption excluded from your RE100 commitment? <Not Applicable>

Consumption of purchased heat, steam, and cooling (MWh) 0

Consumption of self-generated heat, steam, and cooling (MWh) 0

Total non-fuel energy consumption (MWh) [Auto-calculated] 34662

Country/area Germany

Consumption of purchased electricity (MWh) 766933

Consumption of self-generated electricity (MWh) 256070

Is this electricity consumption excluded from your RE100 commitment? <Not Applicable>

Consumption of purchased heat, steam, and cooling (MWh) 139333

Consumption of self-generated heat, steam, and cooling (MWh) 26086

Total non-fuel energy consumption (MWh) [Auto-calculated] 1188422

Country/area United Kingdom of Great Britain and Northern Ireland

Consumption of purchased electricity (MWh) 42115

Consumption of self-generated electricity (MWh) 16022

Is this electricity consumption excluded from your RE100 commitment? <Not Applicable>

Consumption of purchased heat, steam, and cooling (MWh) 0

Consumption of self-generated heat, steam, and cooling (MWh) 0

Total non-fuel energy consumption (MWh) [Auto-calculated] 58137

Country/area Hungary

Consumption of purchased electricity (MWh) 24418

Consumption of self-generated electricity (MWh) 0

Is this electricity consumption excluded from your RE100 commitment? <Not Applicable>

Consumption of purchased heat, steam, and cooling (MWh)  $\ensuremath{\mathsf{0}}$ 

Consumption of self-generated heat, steam, and cooling (MWh) 0

Total non-fuel energy consumption (MWh) [Auto-calculated] 24418

Country/area

India

```
Consumption of purchased electricity (MWh)
86345
Consumption of self-generated electricity (MWh)
1219
Is this electricity consumption excluded from your RE100 commitment?
<Not Applicable>
Consumption of purchased heat, steam, and cooling (MWh)
0
Consumption of self-generated heat, steam, and cooling (MWh)
0
Total non-fuel energy consumption (MWh) [Auto-calculated]
87564
Country/area
Italy
Consumption of purchased electricity (MWh)
25070
Consumption of self-generated electricity (MWh)
630
Is this electricity consumption excluded from your RE100 commitment?
<Not Applicable>
Consumption of purchased heat, steam, and cooling (MWh)
0
Consumption of self-generated heat, steam, and cooling (MWh)
0
Total non-fuel energy consumption (MWh) [Auto-calculated]
25700
Country/area
Malaysia
Consumption of purchased electricity (MWh)
2555
Consumption of self-generated electricity (MWh)
0
Is this electricity consumption excluded from your RE100 commitment?
<Not Applicable>
Consumption of purchased heat, steam, and cooling (MWh)
0
Consumption of self-generated heat, steam, and cooling (MWh)
0
Total non-fuel energy consumption (MWh) [Auto-calculated]
2555
Country/area
Mexico
Consumption of purchased electricity (MWh)
205122
Consumption of self-generated electricity (MWh)
0
Is this electricity consumption excluded from your RE100 commitment?
<Not Applicable>
Consumption of purchased heat, steam, and cooling (MWh)
0
Consumption of self-generated heat, steam, and cooling (MWh)
0
Total non-fuel energy consumption (MWh) [Auto-calculated]
205122
Country/area
Netherlands
```

Consumption of self-generated electricity (MWh) 0

Is this electricity consumption excluded from your RE100 commitment? <Not Applicable>

Consumption of purchased heat, steam, and cooling (MWh) 0

Consumption of self-generated heat, steam, and cooling (MWh) 0

Total non-fuel energy consumption (MWh) [Auto-calculated] 473

Country/area Portugal

Consumption of purchased electricity (MWh) 8990

Consumption of self-generated electricity (MWh) 56

Is this electricity consumption excluded from your RE100 commitment? <Not Applicable>

Consumption of purchased heat, steam, and cooling (MWh) 0

Consumption of self-generated heat, steam, and cooling (MWh) 0

Total non-fuel energy consumption (MWh) [Auto-calculated] 9046

**Country/area** Romania

Consumption of purchased electricity (MWh) 24311

Consumption of self-generated electricity (MWh) 0

Is this electricity consumption excluded from your RE100 commitment? <Not Applicable>

Consumption of purchased heat, steam, and cooling (MWh) 0

Consumption of self-generated heat, steam, and cooling (MWh) 0

Total non-fuel energy consumption (MWh) [Auto-calculated] 24311

Country/area Slovakia

Consumption of purchased electricity (MWh) 70631

Consumption of self-generated electricity (MWh) 0

Is this electricity consumption excluded from your RE100 commitment? <Not Applicable>

Consumption of purchased heat, steam, and cooling (MWh) 1642

Consumption of self-generated heat, steam, and cooling (MWh)  $\ensuremath{\mathsf{0}}$ 

Total non-fuel energy consumption (MWh) [Auto-calculated] 72273

Country/area South Africa

Consumption of purchased electricity (MWh) 2588

Consumption of self-generated electricity (MWh) 662

Is this electricity consumption excluded from your RE100 commitment? <Not Applicable> Consumption of purchased heat, steam, and cooling (MWh) 0

Consumption of self-generated heat, steam, and cooling (MWh) 0

Total non-fuel energy consumption (MWh) [Auto-calculated] 3250

Country/area Republic of Korea

Consumption of purchased electricity (MWh) 21375

Consumption of self-generated electricity (MWh) 0

Is this electricity consumption excluded from your RE100 commitment? <Not Applicable>

Consumption of purchased heat, steam, and cooling (MWh)  $\ensuremath{\mathsf{0}}$ 

Consumption of self-generated heat, steam, and cooling (MWh)

Total non-fuel energy consumption (MWh) [Auto-calculated] 21375

Country/area Spain

Consumption of purchased electricity (MWh) 67507

Consumption of self-generated electricity (MWh)

Is this electricity consumption excluded from your RE100 commitment? <Not Applicable>

Consumption of purchased heat, steam, and cooling (MWh) 0

Consumption of self-generated heat, steam, and cooling (MWh) 0

Total non-fuel energy consumption (MWh) [Auto-calculated] 67507

Country/area Taiwan. China

Consumption of purchased electricity (MWh) 528

Consumption of self-generated electricity (MWh) 0

Is this electricity consumption excluded from your RE100 commitment? <Not Applicable>

Consumption of purchased heat, steam, and cooling (MWh)  $\ensuremath{0}$ 

Consumption of self-generated heat, steam, and cooling (MWh)  $\ensuremath{\mathsf{0}}$ 

Total non-fuel energy consumption (MWh) [Auto-calculated] 528

Country/area Thailand

Consumption of purchased electricity (MWh) 3229

Consumption of self-generated electricity (MWh) 630

Is this electricity consumption excluded from your RE100 commitment? <Not Applicable>

Consumption of purchased heat, steam, and cooling (MWh)

0

Consumption of self-generated heat, steam, and cooling (MWh) 0

Total non-fuel energy consumption (MWh) [Auto-calculated] 3859

0

0

0

0

0

0

0

0

Country/area Turkey Consumption of purchased electricity (MWh) 24359 Consumption of self-generated electricity (MWh) Is this electricity consumption excluded from your RE100 commitment? <Not Applicable> Consumption of purchased heat, steam, and cooling (MWh) Consumption of self-generated heat, steam, and cooling (MWh) Total non-fuel energy consumption (MWh) [Auto-calculated] 24359 Country/area United States of America Consumption of purchased electricity (MWh) 361817 Consumption of self-generated electricity (MWh) Is this electricity consumption excluded from your RE100 commitment? <Not Applicable> Consumption of purchased heat, steam, and cooling (MWh) Consumption of self-generated heat, steam, and cooling (MWh) Total non-fuel energy consumption (MWh) [Auto-calculated] 361817 Country/area Japan Consumption of purchased electricity (MWh) 2829 Consumption of self-generated electricity (MWh) Is this electricity consumption excluded from your RE100 commitment? <Not Applicable> Consumption of purchased heat, steam, and cooling (MWh) Consumption of self-generated heat, steam, and cooling (MWh) 0 Total non-fuel energy consumption (MWh) [Auto-calculated] 2829 Country/area Poland Consumption of purchased electricity (MWh) 72163 Consumption of self-generated electricity (MWh) 261 Is this electricity consumption excluded from your RE100 commitment? <Not Applicable> Consumption of purchased heat, steam, and cooling (MWh) 7122 Consumption of self-generated heat, steam, and cooling (MWh) Total non-fuel energy consumption (MWh) [Auto-calculated] 79546

# Country/area

0
Viet Nam

0

0

0

0

0

0

0

0

```
Consumption of purchased electricity (MWh)
832
Consumption of self-generated electricity (MWh)
Is this electricity consumption excluded from your RE100 commitment?
<Not Applicable>
Consumption of purchased heat, steam, and cooling (MWh)
Consumption of self-generated heat, steam, and cooling (MWh)
Total non-fuel energy consumption (MWh) [Auto-calculated]
832
Country/area
Serbia
Consumption of purchased electricity (MWh)
14898
Consumption of self-generated electricity (MWh)
75
Is this electricity consumption excluded from your RE100 commitment?
<Not Applicable>
Consumption of purchased heat, steam, and cooling (MWh)
Consumption of self-generated heat, steam, and cooling (MWh)
0
Total non-fuel energy consumption (MWh) [Auto-calculated]
14973
Country/area
Singapore
Consumption of purchased electricity (MWh)
206
Consumption of self-generated electricity (MWh)
Is this electricity consumption excluded from your RE100 commitment?
<Not Applicable>
Consumption of purchased heat, steam, and cooling (MWh)
0
Consumption of self-generated heat, steam, and cooling (MWh)
Total non-fuel energy consumption (MWh) [Auto-calculated]
206
Country/area
Switzerland
Consumption of purchased electricity (MWh)
174
Consumption of self-generated electricity (MWh)
Is this electricity consumption excluded from your RE100 commitment?
<Not Applicable>
Consumption of purchased heat, steam, and cooling (MWh)
Consumption of self-generated heat, steam, and cooling (MWh)
0
Total non-fuel energy consumption (MWh) [Auto-calculated]
174
Country/area
United Arab Emirates
```

Consumption of purchased electricity (MWh) 165

Consumption of self-generated electricity (MWh) 0

Is this electricity consumption excluded from your RE100 commitment? <Not Applicable>

Consumption of purchased heat, steam, and cooling (MWh) 0

Consumption of self-generated heat, steam, and cooling (MWh)

Total non-fuel energy consumption (MWh) [Auto-calculated] 165

Country/area

Germany

Consumption of purchased electricity (MWh)

Consumption of self-generated electricity (MWh)

Is this electricity consumption excluded from your RE100 commitment? <Not Applicable>

Consumption of purchased heat, steam, and cooling (MWh)

Consumption of self-generated heat, steam, and cooling (MWh)

Total non-fuel energy consumption (MWh) [Auto-calculated]

<Calculated field>

# C9. Additional metrics

## C9.1

## (C9.1) Provide any additional climate-related metrics relevant to your business.

Description Waste

Metric value

Metric numerator waste in tons

Metric denominator (intensity metric only) not applicable, absolute number

% change from previous year

Direction of change

Decreased

# Please explain

ZF's environmental management system is aimed at continuously reducing the amount of waste generated. To support the circular economy and close material loops, ZF set itself a waste reduction target: Locations are expected to reduce waste for disposal relative to value added by 1% annually, with 2019 as the base year. Reducing hazardous waste is a general goal in waste management. ZF therefore continues to work towards decreasing the volume of waste to be disposed of, as well as hazardous waste. For this purpose, the Group is changing processes, optimizing procedures and replacing hazardous substances used in operations. In order to avoid any transport risks, ZF does not export hazardous waste from one country to another and organizes waste disposal locally. In 2022, the total amount of waste decreased by 2.3% compared to previous year. The specific waste amount, (tons per € million per added value) was again lower in 2022 than in the previous year. The recycling rate was 89%. In 2022, the company was involved in 62 projects for the remediation of contamination dating back at least a decade. These projects were carried out jointly with the relevant local authorities and cost more than €10.2 million (2021: €5.6 million).

# C10. Verification

# C10.1

(C10.1) Indicate the verification/assurance status that applies to your reported emissions.

	Verification/assurance status
Scope 1	Third-party verification or assurance process in place
Scope 2 (location-based or market-based)	Third-party verification or assurance process in place
Scope 3	No third-party verification or assurance

# C10.1a

(C10.1a) Provide further details of the verification/assurance undertaken for your Scope 1 emissions, and attach the relevant statements.

Verification or assurance cycle in place

Annual process

Status in the current reporting year Complete

Type of verification or assurance Limited assurance

Attach the statement

EU\_ETS\_GuD\_14310-1892\_EmB2022\_20230224.pdf

# Page/ section reference

Facility number / DEHSt #: 14310-1892 GuD-Heizkraftwerk (CHP plant) Saarbrücken, Germany Verification: proTerra Umweltschutz und Managementberatung GmbH Accreditor: Deutsche Akkreditierungsstelle GmbH - DAkkS VET report via EU ETS Portal CO2 Emissions in reporting periode: 117.040 tons CO2 Total ZF scope 1: 391.000 tons CO2e (--> GuD facility emits 30% of ZF#s Scope 1 emissions) Date of report: Feb 24th 2023

**Relevant standard** 

European Union Emissions Trading System (EU ETS)

## Proportion of reported emissions verified (%)

30

Verification or assurance cycle in place

Annual process

# Status in the current reporting year

Underway but not complete for current reporting year - first year it has taken place

Type of verification or assurance Limited assurance

## Attach the statement

Page/ section reference

Underway Verification process started in 2022 with one location responsible for 7% of total Scope 1 emissions

Relevant standard ISAE3000

Proportion of reported emissions verified (%)

# C10.1b

# (C10.1b) Provide further details of the verification/assurance undertaken for your Scope 2 emissions and attach the relevant statements.

# Scope 2 approach

Scope 2 market-based

# Verification or assurance cycle in place

Annual process

# Status in the current reporting year

Underway but not complete for current reporting year - first year it has taken place

# Type of verification or assurance

Third party verification/assurance underway

# Attach the statement

## Page/ section reference

Underway

Verification process startet in 2022 with one location responsible for 3% of total Scope 2 emissions

## Relevant standard

ISAE3000

# Proportion of reported emissions verified (%)

3

# C10.2

(C10.2) Do you verify any climate-related information reported in your CDP disclosure other than the emissions figures reported in C6.1, C6.3, and C6.5? Yes

# C10.2a

(C10.2a) Which data points within your CDP disclosure have been verified, and which verification standards were used?

Disclosure module verification relates to	Data verified	Verification standard	Please explain
C3. Business strategy	Emissions reduction activities	ICMA International Capital Market Association: Green Bond Principles	Eligible Green Project Portfolio (in € million) in 2022 Clean Transportation: 713 million € (thereof R&D 462, CAPEX 251) ZF Green Finance Framework (GFF) is aligned with ICMA's 2018 Green Bond Principles and LMA's 2020 Green Loan Principles. ZF_Green_Finance.Report_2023.pdf ZF_Green-Finance-Framework.pdf
C3. Business strategy	Renewable energy products	ICMA International Capital Market Association: Green Bond Principles	Eligible Green Project Portfolio (in € million) in 2022 Renewable Energy: 839 million € (thereof R&D 38, Assets 801) ZF Green Finance Framework (GFF) is aligned with ICMA's 2018 Green Bond Principles and LMA's 2020 Green Loan Principles.

# C11. Carbon pricing

# C11.1

(C11.1) Are any of your operations or activities regulated by a carbon pricing system (i.e. ETS, Cap & Trade or Carbon Tax)? Yes

# C11.1a

(C11.1a) Select the carbon pricing regulation(s) which impacts your operations. EU  $\ensuremath{\mathsf{EUS}}$ 

# C11.1b

(C11.1b) Complete the following table for each of the emissions trading schemes you are regulated by.

## EU ETS

% of Scope 1 emissions covered by the ETS

28

% of Scope 2 emissions covered by the ETS

0

Period start date January 1 2022

Period end date December 31 2022

Allowances allocated 7212

Allowances purchased

0

Verified Scope 1 emissions in metric tons CO2e 117040

Verified Scope 2 emissions in metric tons CO2e 0

Details of ownership

Facilities we own but do not operate

## Comment

Data are referring to facility number 14310-1892 GuD-Heizkraftwerk (CHP plant) in Saarbrücken, Germany. The facility number 14310-0028 (combustion plant), reported in previous years, does not participate in ETS since 24.06.2019 because of power reduction under 20 MW (approval DEHSt 28.02.2020).

# C11.1d

## (C11.1d) What is your strategy for complying with the systems you are regulated by or anticipate being regulated by?

ZF set a target to become climate neutral in all emission scopes by 2040 at the latest. Main levers are increasing energy efficiency and the increase of purchased green electricity up to 100% by 2030. This means that all processes, products, and services will decrease the CO<sub>2</sub>e load in the atmosphere in the upcoming years. The installation under the EU ETS is located in Germany, Saarbrücken.

Concerning our strategy for complying with the ETS, the site acts in accordance with ZF Climate Ambition Strategy and the related technology was substituted in January 2023 (The lease of GuD-Heizkraftwerk (CHP plant) ended on 31.12.2022).

# C11.2

(C11.2) Has your organization canceled any project-based carbon credits within the reporting year? Yes

# C11.2a

#### (C11.2a) Provide details of the project-based carbon credits canceled by your organization in the reporting year.

# Project type

Wind

# Type of mitigation activity

Emissions reduction

# **Project description**

ClimatePartner-ID 12364-1612-1001 Wind energy Ovalle Chile ClimatePartner project ID: 1272 verified by Earthhood Service Private Limited validated by Instituto Colombiano de Normas Tecnicas y Certificacion - ICONTEC Description: www.climatepartner.com/1272

# Credits canceled by your organization from this project in the reporting year (metric tons CO2e)

200

## Purpose of cancellation Voluntary offsetting

#### Are you able to report the vintage of the credits at cancellation? Yes

Vintage of credits at cancellation 2016

Were these credits issued to or purchased by your organization? Purchased

# Credits issued by which carbon-crediting program

Gold Standard

# Method(s) the program uses to assess additionality for this project

Investment analysis

Other, please specify ("Tool for the demonstration and assessment of additionality", Version 7.0.0; "Methodological Tool - Investment Analysis", Version 6.0.)

## Approach(es) by which the selected program requires this project to address reversal risk No risk of reversal

# Potential sources of leakage the selected program requires this project to have assessed

Other, please specify (Leakage is not a requirement under the methodology and is not applicable for wind energy projects.) Not assessed

## Provide details of other issues the selected program requires projects to address

To register with a standard, project owners must demonstrate in their project design that their activities do not have negative environmental and socio-economic impacts or define measures to mitigate or address any impacts. Compliance with these measures is verified during validation and periodic verification. The Gold Standard for example has its own Safeguarding Principles & Requirements in place that also include Human Rights (p. 9-10): https://globalgoals.goldstandard.org/103-par-safeguardingprinciples-requirements/

Furthermore, the Gold Standard requires every climate project to contribute to the UN Sustainable Development Goals (SDGs). In particular, every project has to contribute to SDG 13 Climate Action plus two additional SDGs. The contribution has to be measured in a credible way. For the wind energy project in Ovalle contributions towards SDG 7, SDG 8 and SDG 13 have been verified.

## Comment

Comments on Method(s) the program uses to assess additionality for this project:

According to the Project Design Document (please see document Gold Standard Project Design Document (A - PDD\_GS\_Cururos\_GS4GG\_CP2\_01 10 2022 v4.1.pdf)) of the Ovalle wind energy project, the additionality assessment is done based on the "Tool for the demonstration and assessment of additionality", Version 7.0.0 (see page 32). Furthermore, the Project Design Document states, that the project used an investment analysis (see page 35 ff.) as well as a common practice analysis to evaluate additionality (see page 40 ff.). Prove of financial additionality was done using the tool "Methodological Tool - Investment Analysis", Version 6.0. (see page 11).

# C11.3

(C11.3) Does your organization use an internal price on carbon? No, but we anticipate doing so in the next two years

# C12. Engagement

# C12.1

# (C12.1) Do you engage with your value chain on climate-related issues?

Yes, our suppliers

Yes, our customers/clients

Yes, other partners in the value chain

#### (C12.1a) Provide details of your climate-related supplier engagement strategy.

#### Type of engagement

Information collection (understanding supplier behavior)

#### **Details of engagement**

Collect climate-related risk and opportunity information at least annually from suppliers

% of suppliers by number

100

# % total procurement spend (direct and indirect)

100

#### % of supplier-related Scope 3 emissions as reported in C6.5

100

#### Rationale for the coverage of your engagement

All our Production Material (PM) suppliers (100%) are to submit the Sustainability Criterion as the minimum sustainability performance disclosure document. It is applied as a self-assessment questionnaire that covers topics such as climate footprint, human rights and compliance, environment, as well as health and safety (EHS). In addition, we conduct quality one-site audits that partially include human rights topics (e. g. occupational safety).

Engaging with 100% of the PM supplier base ensures that all suppliers adhere to the same standards, policies, and regulations set by ZF. This approach helps to create a level playing field and fosters a culture of responsibility and sustainable conduct within the supply chain. By focusing on production material suppliers, ZF can address a substantial portion of its indirect emissions and work towards reducing its overall carbon footprint.

A completed questionnaire is mandatory not only for the approval of new suppliers, but also for new sourcing from existing suppliers. Sourcing cases will not be processed if a supplier fails to provide a completed questionnaire, the achieved score is below 25% or the signed acceptance sheet of the ZF Business Partner Principles is not submitted.

As part of the continuous development, ZF decided in 2021 to gradually replace its Self-Assessment Questionnaire. Suppliers have to submit the standardized, industryspecific Self-Assessment Questionnaire (SAQ) via the global NQC platform. The use of standardized tools makes processes more efficient for ZF and its suppliers. The industry-specific self-assessment questionnaire includes questions on suppliers'' climate change performance and engagement amongst their own suppliers. Based on our initial risk assessment and prioritisation of direct suppliers (Tier 1) for production materials and non- production materials, the rollout of the Self Assessment Questionnaire via global NQC platform targeted 1,800 production materials suppliers and was completed by the end of 2022. ZF achieved a coverage of 82% and thus achieved a high coverage on suppliers who have a major influence over our own climate-related performance and potential risks. The supplier engagement is ongoing and our aim is to receive the questionnaire from all strategic and approved suppliers.

## Impact of engagement, including measures of success

With the ZF sustainability criterion for suppliers, we have a central control element that is a binding part of our procurement process. We have set a benchmark for the supplier's minimum score to be achieved. Sourcing cases will not be processed if a supplier fails to provide a completed self-assessment questionnaire or the achieved score is below 25%.

As a result of this information collection, we have seen increased sustainability awareness and engagement among our suppliers. The past year has also seen a shift towards climate strategy and embedded green initiatives such as increasing the share of green power. A great example demonstrating suppliers engagement and contribution to ZF targets is Mubea.

Mubea helped ZF reduce the product carbon footprint for a high-runner product by 60% and was awarded the ZF Supplier's Sustainability Award at last year's Supplier Summit. The commitment of Mubea and many other suppliers shows that our activities have not missed their mark and have brought great results.

#### Comment

The values consider 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 < 10%). We focus on PM, where we identified high levers (Share PM >90%).

#### Type of engagement

Innovation & collaboration (changing markets)

#### Details of engagement

Other, please specify (New organizational set up for better collaboration with the suppliers and internally)

#### % of suppliers by number

100

## % total procurement spend (direct and indirect)

100

% of supplier-related Scope 3 emissions as reported in C6.5 100

## Rationale for the coverage of your engagement

To ensure responsible procurement practices, ZF Materials Management has appointed a cross-functional Sourcing Decision Board (SDB). This is the highest decisionmaking 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.

In order to maintain an overview of the numerous sustainability-relevant activities in the supply chain and to be able to manage measures appropriately, the function Head of Supply Chain was created in 2022, reporting to the Head of Materials Management. Also, additional headcounts have been assigned to strive and coordinate.

To strengthen the collaboration and communication on an operational level, a Sustainability Business Support (SBS) organization was setup. The SBS experts, directly embedded in commodity and program purchasing, cover all commodities and divisions to share best-practices, drive sustainability topics and collaborate in sustainability projects with the supplier base.

ZF also continued the ZF Decarbonization Dialogues in 2022. Their objective is to exchange information and knowledge on the application of strategies, methods, and technological possibilities.

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.

Engaging with all suppliers provides also an opportunity for collaboration and support in driving performance improvement initiatives. By sharing best practices, providing guidance, and offering resources, ZF can help suppliers enhance their capabilities, implement sustainable practices, and improve overall performance. This allows for comprehensive transparency, helps to 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.

## Impact of engagement, including measures of success

Achieving climate neutrality by 2040 along the entire value chain is one of the most ambitious targets because Scope 3 emissions are not within ZF's direct sphere of influence. As a result of the new organisational setup our organization is now better prepared for more intense and closer collaboration with the suppliers which now more self-driven and goal oriented. Our suppliers have demonstrated their sustainability engagement and increased sustainability awareness in many areas:

#### Example on impact of engagement:

• To improve ZF's materials CO2 footprint, ZF launched the "Green Materials" program in 2022. Multiple expert groups were established, covering the most important raw materials for ZF and engaging with existing and new suppliers. The project specifies new technologies for high-volume materials and validates these by developing demonstrator products. A key technology for achieving CO2 reduction is the use of the so-called green hydrogen in steel production. ZF has therefore concluded a purchasing agreement with H2 Green Steel. This Swedish start-up aims to accelerate the decarbonization of the steel industry with new production processes. As of 2025, ZF will receive 250,000 tons of "green steel" annually. This volume accounts for 10% of ZF's current steel requirements and will save around 475,000 tons of CO2 emissions.

• Intense dialogues with top suppliers held on regular basis contributed to:

- o Valuable insights into strategic approach taken by our suppliers
- o Transparency on supplier individual decarbonization plans, potential roadblocks and involved potential costs
- o Increasing awareness and commitment
- o Identification of benchmark suppliers which can be used to challenge low performing suppliers on sustainability

o Concrete CO2 emission reduction activities

#### Comment

The values consider 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 < 10%). We focus on PM, where we identified high levers (Share PM >90%).

#### Type of engagement

Other, please specify (Compliance and Onboarding)

#### Details of engagement

Other, please specify (Business Partners Principles)

#### % of suppliers by number

100

#### % total procurement spend (direct and indirect)

100

#### % of supplier-related Scope 3 emissions as reported in C6.5

100

# Rationale for the coverage of your engagement

The ZF Business Partner Principles (BPP) are guidelines specifying fundamental requirements for collaboration with ZF's business partners. They address topics such as environmental protection, human rights, labour standards, occupational safety and health protection, business ethics and compliance. All new and existing suppliers are required to endorse the ZF Business Partner Principles (BPP). The BPP represent values that ZF recognizes, supports, and communicates: Respecting national and international laws and regulations at the locations worldwide is considered the minimum. The BPP also conform to principles and conventions, such as the principles of the UN Global Compact, the OECD Guidelines for Multinational Enterprises, the Universal Declaration of Human Rights, the UN Guiding Principles on Business and Human Rights and relevant conventions of the International Labour Organization (ILO). A standardized process for the request and confirmation of ZF's BPP includes a tool to track the information about the current BPP status of each supplier.

#### Impact of engagement, including measures of success

Acceptance of BPP is a minimum requirement in ZFs supplier award decisions and in the approval process for new suppliers. Engaging with 100% of the supplier base ensures that all suppliers 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 within the supply chain.

The current coverage rate for production materials is 26 % and spend coverage of 64%. ZF continuously monitors the BPP status of each supplier and aims to improve the coverage rate towards 100%. ZF reserves the right to scrutinize business relationships and take appropriate action if deviations or violations are identified.

#### Comment

ZF Business Partners Principles were released in 2020 and adapted in 2023.

#### Type of engagement

Engagement & incentivization (changing supplier behavior)

#### **Details of engagement**

Run an engagement campaign to educate suppliers about climate change Provide training, support, and best practices on how to make credible renewable energy usage claims Other, please specify (Supplier Academy- ZF training platform for supplier base)

#### % of suppliers by number

100

## % total procurement spend (direct and indirect)

100

% of supplier-related Scope 3 emissions as reported in C6.5

#### 100

#### Rationale for the coverage of your engagement

With the Supplier Academy, ZF has created a platform to support cooperation with production materials suppliers and, at the same time, promote supplier qualification in sustainability. ZF Sustainability in Supply Chain team provide suppliers with in-depth training on ZF requirements and standards in the areas of environmental protection, human rights and EHS and on corresponding guidelines and upcoming changes in the sourcing process.

Over the courses of 2022 several deep-dive training sessions were conducted on topics such as green electricity and the Scope 3.1 Corporate Carbon Footprint (CCF)

#### calculation.

Engaging with 100% of the production material supplier base ensures that all suppliers 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 within the supply chain. All suppliers were invited to take part in the trainings and their feedback was collected and analysed.

Additional training programs will be added to existing offer and conducted over the course of 2023.

# Impact of engagement, including measures of success

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 2022, more than 1.800 suppliers took part in our training sessions on Product Carbon Footprint (PCF) calculation and reporting, Climate Ambition/Sustainability in the Supply Chain.

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 will be asked to update their GE roadmaps on a yearly basis.

## More deep-dive training sessions on sustainability topics will be offered free of charge in 2023 for our suppliers.

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 35% by end of 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.

#### Comment

The values consider 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.

#### Type of engagement

Engagement & incentivization (changing supplier behavior)

#### Details of engagement

Other, please specify (Product Carbon Footprint Disclosure in Sourcing)

% of suppliers by number

100

## % total procurement spend (direct and indirect)

100

% of supplier-related Scope 3 emissions as reported in C6.5

100

#### Rationale for the coverage of your engagement

Product Carbon Footprint (PCF) data of sourced parts is key to transparency on ZF's 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. 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. In 2023, the suppliers' PCF will become mandatory for cases of high-spend sourcing of production material.

## Impact of engagement, including measures of success

As the process of PCF data collection in new sourcings was newly introduced in 2022, 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. Furthermore, it was decided to make the disclosure of the PCF data mandatory for all high-volume sourcing cases. The PCF disclosure will be requested from our suppliers as part of the Request for Quote (RfQ) process from July 2023 on.

#### Comment

The values consider 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 < 10%).

#### Type of engagement

Information collection (understanding supplier behavior)

# Details of engagement

Collect climate transition plan information at least annually from suppliers

## % of suppliers by number

10

# % total procurement spend (direct and indirect)

60

% of supplier-related Scope 3 emissions as reported in C6.5

60

#### Rationale for the coverage of your engagement

Green Electricity (GE) is a powerful lever for the decarbonization of our supply chain. In 2022 ZF launched Green Electricity Campaign where we requested Green Electricity Roadmaps from our Production Material Suppliers .

The new GE spend report 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 initially 2,050 suppliers (most contributing to the 3.1 emissions) had been asked to maintain the data in the SupplyOn Business Directory.

### Impact of engagement, including measures of success

Based on the insights gained, the Green Electricity campaign was expanded to include the majority of ZF's production materials suppliers in the coming years. In addition, the results were also integrated into existing materials management processes – the supplier release process and the procurement process in particular. This is to ensure that the planned roadmap for reducing Scope 3 upstream emissions supports the Group's overall target of achieving climate neutrality by 2040.

We have seen clear progress by suppliers in the transition to green power (28% PM spend coverage in 2021 to 35% by the end of 2022).

#### Comment

The values consider 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 < 10%).

#### Type of engagement

Information collection (understanding supplier behavior)

#### Details of engagement

Collect climate transition plan information at least annually from suppliers Other, please specify (Sustainability Minimum Bid Conditions towards decarbonization)

#### % of suppliers by number

100

## % total procurement spend (direct and indirect)

100

% of supplier-related Scope 3 emissions as reported in C6.5

100

## Rationale for the coverage of your engagement

To implement sustainability requirements regarding decarbonization in sourcing, bid conditions towards decarbonization were introduced in the sourcing process of production material These sustainability minimum bid conditions are part of every new sourcing from August 2022 onwards. All production material suppliers need to include the listed requirements in their offer and demonstrate strong commitment to their fulfilment.

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.

#### Impact of engagement, including measures of success

Sustainability minimum bid conditions towards decarbonization are mandatory part of every new sourcing of production materials (100%) from August 2022 onwards. The bid conditions are currently under review and will include further requirements towards Circular Economy, environmental protection and Human Rights related requirements by their release in 2023.

#### Comment

Applicable to new sourcing cases of production material 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 < 10%).

# C12.1b

#### (C12.1b) Give details of your climate-related engagement strategy with your customers.

## Type of engagement & Details of engagement

Collaboration & innovation

Other, please specify (Green energy and low-carbon innovation)

% of customers by number

100

## % of customer - related Scope 3 emissions as reported in C6.5

100

# Please explain the rationale for selecting this group of customers and scope of engagement

ZF regularly aligns with its passenger car customer (OEMs) and offers to increase the share of green energy in all production lines. ZF is committed to use electricity solely from renewable sources by 2030. 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 maximise 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% green energy. The rationale behind this is, that by latest 2030, all products that are supplied by ZF will be originating from 100% green energy supplied plants. I.e., in the meantime until 2030, ZF aligns with all of our customers to find the best possible timing for the transition of the relevant plants for each customer, based on, among others, the respective local green energy availabilities, the respective ZF products supplied to the customer, the local logistics.

#### Impact of engagement, including measures of success

Measures implemented for all ZF plants globally, across all product lines, to achieve 100% electricity usage from renewable sources by 2030 at the latest. "Green energy fast tracks" have been implemented for various plants globally to achieve 100% renewable energy already between 2024-2028, 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.

#### Type of engagement & Details of engagement

Collaboration &	Other, please specify (Cooperation with a key customer in the sourcing of aluminium sub-suppliers, in order to significantly reduce the product carbon footprint (PCF) of an integrated
innovation	brake control system (closed loop concept))

#### % of customers by number

1

% of customer - related Scope 3 emissions as reported in C6.5

## Please explain the rationale for selecting this group of customers and scope of engagement

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

## Impact of engagement, including measures of success

A switch to 100% green energy in the whole sub supply chain of the brake controls aluminium 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 aluminium re-usage process.

## Type of engagement & Details of engagement

Collaboration & Other, please specify (Participation in Catena-X to drive sustainability-related data sharing standards within the automotive industry, to create end-to-end data chains within the automotive supply chains and to achieve members' sustainability targets)

#### % of customers by number

6

## % of customer - related Scope 3 emissions as reported in C6.5

70

# Please explain the rationale for selecting this group of customers 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

## Impact of engagement, including 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.

#### (C12.1d) Give details of your climate-related engagement strategy with other partners in the value chain.

Two examples of ZF's climate-related engagement strategy with partners in the value chain.

#### Situation:

ZF directly and indirectly processes around 2.5 million tons of steel per year worldwide. To help achieve its CO2 reduction targets, the company has concluded an agreement with H2 Green Steel. The Swedish start-up was launched in 2021 with the aim of accelerating the decarbonization of heavy industries, starting with the steel industry through new production processes and technologies, and by using green hydrogen.

#### Task:

ZF needs to and is willing to reduce its carbon footprint in order to become carbon neutral in 2040. Purchased materials such as steel play an important role in this context.

#### Action:

The Swedish start-up H2 Green Steel is currently building a new steel-mill. From the year 2025 onwards, it will produce so-called green steel. The smelting process itself will take place inside electric arc furnaces powered by sustainably generated electricity and utilizing green hydrogen. During the reduction process, the latter replaces conventional common coking coal, which is extremely harmful to the environment. Compared to the traditional process, carbon emissions at H2 Green Steel are reduced by up to 95 percent. Reason enough for ZF to order 250,000 tons of this almost carbon neutral steel delivered every year until 2032. This quantity covers approximately one tenth of the total demand by ZF.

#### Result:

The conclusion of this contract between the two companies in the spring of 2022 signals a major step forward towards ZF's plans for carbon neutrality by 2040. This will only be possible if not only the company's own activities are carbon neutral, but also all purchased raw materials, their precursors and of course the necessary energy. ZF pursues different approaches to reduce emissions in the downstream value-added chain. "For one, we are working with our suppliers to switch to materials or technologies that emit less carbon. But we are also putting a fresh emphasis on the issue of producing electricity from renewable sources, as we regard clean electricity as a decisive lever to achieve decarbonization," says Michael Schmitt, Vice President Supplier Management and Sustainability. His sustainability team from Materials Management defines binding sustainability requirements for suppliers of a wide array of varied materials and for suppliers of energy.

## Situation:

Other than cooperating with new partners, ZF also supports its existing suppliers in their development towards a more sustainable production.

Task: For example, towards the year of 2021 the technological company embarked on a pilot project with Mubea Tellerfeder GmbH.

#### Action:

Both sides investigated which of the transmission disk springs already being produced in volume production and supplied to ZF for years would be suitable for a sustainability project. Finally, the participants identified two suitable types. In a next step, they determined the product carbon footprint (PCF) for the two transmission disk springs using the current production method. In close cooperation with ZF as the customer, Mubea subsequently converted the manufacturing process for the steel used within the pilot project to "green steel".

#### Result:

At the end of January 2023, Mubea delivered the first manufacturing batch of the "green" transmission disk springs to ZF for an expert opinion.

Metals dealer Klöckner & Co SE has also recognized the signs of the time and acts accordingly. The Duisburg-based company offers its customers over 200,000 products with individually calculated product carbon footprint (PCF). Customers like ZF use such PCF information to improve their transparency. Since the end of January 2023, the Klöckner Group subsidiary Becker Stahl-Service also supplies the PCF for selected parts in the flat steel sector.

# C12.2

(C12.2) Do your suppliers have to meet climate-related requirements as part of your organization's purchasing process? Yes, climate-related requirements are included in our supplier contracts

# C12.2a

(C12.2a) Provide details of the climate-related requirements that suppliers have to meet as part of your organization's purchasing process and the compliance mechanisms in place.

#### **Climate-related requirement**

Purchasing renewable energy

## Description of this climate related requirement

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. 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.

# % suppliers by procurement spend that have to comply with this climate-related requirement 100

## % suppliers by procurement spend in compliance with this climate-related requirement

35

Mechanisms for monitoring compliance with this climate-related requirement

Certification Supplier self-assessment Off-site third-party verification On-site third-party verification Supplier scorecard or rating Other, please specify (Green Electricity Spend Report )

#### Response to supplier non-compliance with this climate-related requirement

Retain and engage

#### **Climate-related requirement**

Climate-related disclosure through a non-public platform

## Description of this climate related requirement

In May 2020, ZF introduced an additional sustainability criterion as a mandatory requirement for the approval of new suppliers and for ongoing sourcing. The sustainability criterion covers the topics of climate/ environment, human rights and compliance, as well as health and safety (EHS). Regarding the environmental management of its suppliers, ZF also clear expectations on energy efficiency, water usage, air emissions, waste management and the handling of restricted substances and chemicals. As part of the continuous development of our approach, ZF decided in 2021 to gradually replace its Self-Assessment Questionnaire. From 2022 we will request that our suppliers (production and non-production material suppliers) submit the standardized, industry-specific Self-Assessment Questionnaire (SAQ) via the global NQC platform. The use of standardized tools makes processes more efficient for ZF and its suppliers. At the same time, subcontractors get an overall impression of the Group's sustainability expectations. This makes it possible to prioritize key topics more effectively.

# % suppliers by procurement spend that have to comply with this climate-related requirement 100

% suppliers by procurement spend in compliance with this climate-related requirement

70

Mechanisms for monitoring compliance with this climate-related requirement

Supplier self-assessment

Supplier scorecard or rating

Response to supplier non-compliance with this climate-related requirement Retain and engage

#### **Climate-related requirement**

Other, please specify (Measuring product-level emissions)

## Description of this climate related requirement

Costs are not the only important aspect in context of value chain management – Sustainability and resilience in the supply chain have become increasingly important and are core topics regarding successful purchasing and supply chain management. ZF's Purchasing and Supply Chain management is therefore responding to disruptive changes (i.e., caused by climate change and technology shifts) with a clear strategy towards an integrated, resilient and sustainable value chain. This includes products and processes such as digital purchasing processes (e.g. considering supplier's PCFs) and Supply Chain Management 4.0. To this end, quality, logistics, speed, risk prevention and demand management need to be taken into account, which form the strategic focus topics for sourcing. These aspects are aligned with ZF's overall "Next Generation Mobility" strategy and its Digitalization Roadmap.

# % suppliers by procurement spend that have to comply with this climate-related requirement 100

% suppliers by procurement spend in compliance with this climate-related requirement

100

#### Mechanisms for monitoring compliance with this climate-related requirement

Supplier self-assessment Supplier scorecard or rating

## Response to supplier non-compliance with this climate-related requirement

Retain and engage

# Climate-related requirement

Measuring product-level emissions

# Description of this climate related requirement

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 SOP+1") 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 will become mandatory requirement in sourcing process.

% suppliers by procurement spend that have to comply with this climate-related requirement 100

## % suppliers by procurement spend in compliance with this climate-related requirement

Mechanisms for monitoring compliance with this climate-related requirement

1

# Response to supplier non-compliance with this climate-related requirement

Retain and engage

C12.3

## (C12.3) Does your organization engage in activities that could either directly or indirectly influence policy, law, or regulation that may impact the climate?

#### Row 1

#### External engagement activities that could directly or indirectly influence policy, law, or regulation that may impact the climate

Yes, we engage directly with policy makers

Yes, our membership of/engagement with trade associations could influence policy, law, or regulation that may impact the climate

Yes, we fund organizations or individuals whose activities could influence policy, law, or regulation that may impact the climate

Does your organization have a public commitment or position statement to conduct your engagement activities in line with the goals of the Paris Agreement? Yes

# Attach commitment or position statement(s)

- Annual Report of 2022: pages 58/59 on ZF's science-based targets refering to the Paris Agreement

- Annual Report of 2022: pages 44 - 47 on ZF's Next Generation Mobility refering to ZF's target of climate neutrality by 2040

ZF\_AnnualReport for 2022.pdf

Describe the process(es) your organization has in place to ensure that your external engagement activities are consistent with your climate commitments and/or climate 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.

# Primary reason for not engaging in activities that could directly or indirectly influence policy, law, or regulation that may impact the climate

<Not Applicable>

Explain why your organization does not engage in activities that could directly or indirectly influence policy, law, or regulation that may impact the climate <Not Applicable>

#### (C12.3a) On what policy, law, or regulation that may impact the climate has your organization been engaging directly with policy makers in the reporting year?

## 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) 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

#### Category of policy, law, or regulation that may impact the climate Low-carbon products and services

#### Focus area of policy, law, or regulation that may impact the climate

Alternative fuels Circular economy Green electricity tariffs/renewable energy PPAs Low-carbon innovation and R&D

#### Policy, law, or regulation geographic coverage Global

Country/area/region the policy, law, or regulation applies to <Not Applicable>

# Your organization's position on the policy, law, or regulation

Support with minor exceptions

## Description of engagement with policy makers

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.

## Details of exceptions (if applicable) 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.

# Have you evaluated whether your organization's engagement on this policy, law, or regulation is aligned with the goals of the Paris Agreement? Yes, we have evaluated, and it is aligned

# Please explain whether this policy, law or regulation is central to the achievement of your climate transition plan and, if so, how? ZF follows an ambitious climate strategy: to become climate neutral across all emission categories by 2040. Our engagement with policy, law, or regulation supports this target setting

## C12.3b

(C12.3b) Provide details of the trade associations your organization is a member of, or engages with, which are likely to take a position on any policy, law or regulation that may impact the climate.

## Trade association

German Automotive Association (VDA)

#### Is your organization's position on climate change policy consistent with theirs? Consistent

Has your organization attempted to influence their position in the reporting year? Yes, we publicly promoted their current position

Describe how your organization's position is consistent with or differs from the trade association'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 Funding figure is confidential and for internal use only. The funding represents a membership fee and engagement fees for committee and project work.

Funding figure your organization provided to this trade association in the reporting year (currency as selected in C0.4)

#### Describe the aim of your organization's funding

<Not Applicable>

Have you evaluated whether your organization's engagement with this trade association is aligned with the goals of the Paris Agreement? Yes, we have evaluated, and it is aligned

## Trade association

Other, please specify (European Association of Automotive Suppliers (CLEPA) )

#### Is your organization's position on climate change policy consistent with theirs? Consistent

Has your organization attempted to influence their position in the reporting year? Yes, we publicly promoted their current position Describe how your organization's position is consistent with or differs from the trade association'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. Funding figure is confidential and for internal use only. The funding represents a membership fee and engagement fees for committee and project work.

#### Funding figure your organization provided to this trade association in the reporting year (currency as selected in C0.4)

# Describe the aim of your organization's funding

<Not Applicable>

Have you evaluated whether your organization's engagement with this trade association is aligned with the goals of the Paris Agreement? Yes, we have evaluated, and it is aligned

#### Trade association

Other, please specify (German Engineering Federation e.V. (VDMA))

Is your organization's position on climate change policy consistent with theirs? Consistent

#### Has your organization attempted to influence their position in the reporting year?

Yes, we publicly promoted their current position

# Describe how your organization's position is consistent with or differs from the trade association's position, and any actions taken to influence their position

The engineering sector supports the climate change concept of 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 SGDs. VDMA very much welcomes this alignment. http://www.vdma.org Funding figure is confidential and for internal use only. The funding represents a membership fee and engagement fees for committee and project work.

## Funding figure your organization provided to this trade association in the reporting year (currency as selected in C0.4)

Describe the aim of your organization's funding <Not Applicable>

Have you evaluated whether your organization's engagement with this trade association is aligned with the goals of the Paris Agreement? Yes, we have evaluated, and it is aligned

#### Trade association

Other, please specify (US Motor & Equipment Manufacturers Association (MEMA))

# Is your organization's position on climate change policy consistent with theirs?

Consistent

## Has your organization attempted to influence their position in the reporting year?

Yes, and they have changed their position

Describe how your organization's position is consistent with or differs from the trade association'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. EPA and 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. Funding figure is confidential and for internal use only. The funding represents a membership fee and engagement fees for committee and project work.

#### Funding figure your organization provided to this trade association in the reporting year (currency as selected in C0.4)

#### Describe the aim of your organization's funding

<Not Applicable>

Have you evaluated whether your organization's engagement with this trade association is aligned with the goals of the Paris Agreement? Yes, we have evaluated, and it is aligned

## C12.3c

(C12.3c) Provide details of the funding you provided to other organizations or individuals in the reporting year whose activities could influence policy, law, or regulation that may impact the climate.

#### Type of organization or individual

Other, please specify (Registered Association (German: eingetragener Verein (e.V.)))

## State the organization or individual to which you provided funding

eFuel Alliance e.V.

Funding figure is confidential and for internal use only. The funding represents a membership fee and engagement fees for committee and project work.

Funding figure your organization provided to this organization or individual in the reporting year (currency as selected in C0.4)

# Describe the aim of this funding and how it could influence policy, law or regulation that may impact the climate

The attainment of climate goals is an important objective for the automotive supplier industry. The E-Fuel Alliance promotes the application of renewable, climate-friendly fuels as an additional technology contributing to the overall GHG-reduction goals

# Have you evaluated whether this funding is aligned with the goals of the Paris Agreement?

Yes, we have evaluated, and it is aligned

(C12.4) Have you published information about your organization's response to climate change and GHG emissions performance for this reporting year in places other than in your CDP response? If so, please attach the publication(s).

## Publication

In mainstream reports, incorporating the TCFD recommendations

# Status

Complete

# Attach the document ZF\_AnnualReport for 2022.pdf

# Page/Section reference

Please refer to ZF Annual Report 2022:

- Sustainability Strategy and Governance: p. 52 58
- Risks & opportunities: p. 59 & 122; p. 117 125
- Emissions figures: p. 62 64
- Emission targets: p. 58 59
- Other metrics: p. 60 62, p. 64 67
- TCFD : p. 59

# **Content elements**

Governance Strategy Risks & opportunities Emissions figures Emission targets Other metrics Other, please specify (Reference to TCFD )

## Comment

## Publication

In mainstream reports, incorporating the TCFD recommendations

Status Complete

Attach the document tcfd\_index\_2022.pdf tcfd\_index\_2022.pdf

# Page/Section reference

**Content elements** Other, please specify (TCFD index)

# Comment

# C12.5

(C12.5) Indicate the collaborative frameworks, initiatives and/or commitments related to environmental issues for which you are a signatory/member.

	Environmental collaborative framework, initiative and/or commitment	Describe your organization's role within each framework, initiative and/or commitment
Row 1	UN Global Compact Other, please specify (Catena-X, World Economic Forum (WEF): First Movers Coalition and the Alliance of CEO Climate Leaders)	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. 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 in production and logistics. As prominent use case, Catena-X features the development of an integral and seamless carbon footprint exchange with primary data. 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. See https://www.weforum.org/first-movers-coalition 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 catalysing decarbonization and partnerships across global value chains. See https://initiatives.weforum.org/alliance-of-ceo- climate-leaders/home

## C15. Biodiversity

# C15.1

(C15.1) Is there board-level oversight and/or executive management-level responsibility for biodiversity-related issues within your organization?

	Board-level oversight and/or executive management-level responsibility for biodiversity-related issues	Description of oversight and objectives relating to biodiversity	Scope of board-level oversight
Row	No, but we plan to have both within the next two years	<not applicable=""></not>	<not applicable=""></not>
1			

# C15.2

(C15.2) Has your organization made a public commitment and/or endorsed any initiatives related to biodiversity?

	Indicate whether your organization made a public commitment or	Biodiversity-related public commitments	
	endorsed any initiatives related to biodiversity		endorsed
Row	Yes, we have made public commitments only	Other, please specify (Commitment to respect our planet's natural habitat and to conserve resources, reduce	<not< td=""></not<>
1		environmental pollution and preventing environmental damages (ZF Business Partner Principles))	Applicable>

# C15.3

Yes

(C15.3) Does your organization assess the impacts and dependencies of its value chain on biodiversity?

## Impacts on biodiversity

Indicate whether your organization undertakes this type of assessment

Value chain stage(s) covered

Direct operations Upstream

opsiloani

# Portfolio activity <Not Applicable>

Tools and methods to assess impacts and/or dependencies on biodiversity Other, please specify (Value balancing alliance VBA)

# Please explain how the tools and methods are implemented and provide an indication of the associated outcome(s)

Value Balancing Alliance is a membership organization that is developing methodologies to measure the value and impact of corporate behaviour to the society. In the current set of environmental indicators (GHG, water consumption, water pollution, air emissions, land use, waste) biodiversity is considered in the impact pathways. E.g. land use is converting natural ecosystems which is leading to health impacts, or water pollution is contaminating water which is leading to changes in fishstock. Within the impact pathways for each of the indicators the value to society is described by the dependencies of output, outcomes and impacts.

## Dependencies on biodiversity

Indicate whether your organization undertakes this type of assessment Yes

Value chain stage(s) covered Direct operations Upstream

Portfolio activity
<Not Applicable>

Tools and methods to assess impacts and/or dependencies on biodiversity Other, please specify (Value balancing alliance VBA)

#### Please explain how the tools and methods are implemented and provide an indication of the associated outcome(s)

Value Balancing Alliance is a membership organization that is developing methodologies to measure the value and impact of corporate behaviour to the society. In the current set of environmental indicators (GHG, water consumption, water pollution, air emissions, land use, waste) biodiversity is considered in the impact pathways. E.g. land use is converting natural ecosystems which is leading to health impacts, or water pollution is contaminating water which is leading to changes in fishstock. Within the impact pathways for each of the indicators the value to society is described by the dependencies of output, outcomes and impacts.

# C15.4

(C15.4) Does your organization have activities located in or near to biodiversity- sensitive areas in the reporting year? Not assessed

# C15.5

# (C15.5) What actions has your organization taken in the reporting year to progress your biodiversity-related commitments?

	Have you taken any actions in the reporting period to progress your biodiversity-related commitments?	Type of action taken to progress biodiversity- related commitments
Row 1	No, we are not taking any actions to progress our biodiversity-related commitments, but we plan to within the next two years	<not applicable=""></not>

# C15.6

## (C15.6) Does your organization use biodiversity indicators to monitor performance across its activities?

	Does your organization use indicators to monitor biodiversity performance?	Indicators used to monitor biodiversity performance
Row 1	No, we do not use indicators, but plan to within the next two years	Please select

# C15.7

(C15.7) Have you published information about your organization's response to biodiversity-related issues for this reporting year in places other than in your CDP response? If so, please attach the publication(s).

Report type	Content elements	Attach the document and indicate where in the document the relevant biodiversity information is located	
No publications	<not applicable=""></not>	<not applicable=""></not>	

# C16. Signoff

# C-FI

(C-FI) 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.

no further comments

# C16.1

(C16.1) Provide details for the person that has signed off (approved) your CDP climate change response.

	Job title	Corresponding job category
Row 1	Head of Sustainability Strategy	Environment/Sustainability manager

# SC. Supply chain module

# SC0.0