

# SUSTAINABILITY REPORT 2023



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# CONTENTS

<b>1 Statement by the Management Board</b>	<b>5</b>
<b>2 Our Transmission Companies</b>	<b>6</b>
2.1 Details on the Sustainability Report and Organization	6
2.2 Organizational Structure	8
2.3 Memberships	9
2.4 Complaint Management	10
<b>3 Materiality and Sustainability Strategy</b>	<b>11</b>
3.1 United Nations: Sustainable Development Goals	11
3.2 Potentially Material Topics	14
3.3 Stakeholder Analysis	15
3.4 Opportunity-Risk Assessment	18
3.5 Further Development of the Materiality Analysis	20
3.6 Sustainability Strategy	21
3.7 Our Path to Climate Neutrality	23
<b>4 Energy and Environment</b>	<b>24</b>
4.1 Emissions	24
4.1.1 Scope 1	24
4.1.2 Scope 2	26
4.1.3 Scope 3	27
4.1.4 Methane Emissions	28
4.1.5 Air Emissions	28
4.2 Energy	29
4.2.1 Energy Consumption	29
4.2.2 Share of Renewable Electricity	29

# CONTENTS

4.3 Measures in the Area of Energy and Environment	30
4.4 Environmental Protection, Ecology and Biodiversity	33
4.5 Water and Waste Management	35
4.6 Mobility	35
<b>5 People</b>	<b>37</b>
5.1 Occupational Safety and Accident Statistics	37
5.2 Employment Relationships	39
5.3 Worker Participation	40
5.4 Diversity and Equal Opportunities	42
5.5 Reconciling Family and Career	45
5.6 Training and Further Education	46
5.7 Health and Retirement Care	47
5.8 Social and Local Commitment	49
<b>6 Governance</b>	<b>51</b>
6.1 Sustainability Management	51
6.2 Compliance and Business Ethics	52
6.3 Information Security	53
6.4 Digitization	53
6.5 Sustainable Procurement	54
6.6 Management Systems	55
6.6.1 Energy Management	55
6.6.2 IT Security	55
6.6.3 Quality Management	55
6.6.4 Introduction of an Environmental Management	55

<b>CONTENTS</b>	
<b>7 Hydrogen and the Future of Energy</b>	<b>57</b>
7.1 Hydrogen – Energy Carrier of the Future	57
7.2 Current Political Developments	58
7.3 Hydrogen Projects of our Transmission System Operators	58
7.4 Green Gas Capability of our Transport Networks	60
<b>8 Global Reporting Initiative (GRI)-Index</b>	<b>63</b>
<b>List of Abbreviations</b>	<b>70</b>
<b>Disclaimer</b>	<b>71</b>
<b>Imprint</b>	<b>72</b>



# 1 STATEMENT BY THE MANAGEMENT BOARD

GRI 2-22



Dr. Christoph von dem Bussche  
Managing Director GASCADE and  
NEL Gastransport

Ulrich Benterbusch  
Managing Director GASCADE and  
NEL Gastransport

The transformation to a sustainable energy supply company is both a challenge and an opportunity for GASCADE. As an infrastructure operator, we want to make a decisive contribution to achieving a carbon-free energy supply. The conversion of our network to hydrogen plays an important role in this. At the same time, however, we will also continuously reduce our own emissions in natural gas transportation. The transformation of our business requires determination and perseverance. In order to position GASCADE for the decarbonized future, sustainability issues are now an integral part of our corporate strategy and are implemented in all areas and activities of the company.

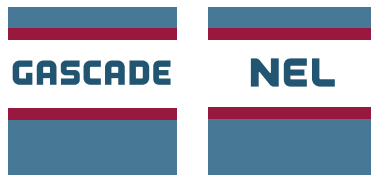
In our aim to make gas transportation even more environmentally friendly and resource-efficient, we are constantly improving. Compared to the previous year, we were able to further reduce our emissions (Scope 1 and 2). We are well on the way to achieving our emissions reduction targets for 2025 and 2030. Our methane campaign, optimizations in energy consumption, and the increased use of electric compressors with renewable electricity are contributing to this.

The security of supply and occupational safety remain key targets for our transportation business. Our HSE performance has improved once again compared to the previous year, despite the fact that we realized a challenging major offshore project to strengthen European energy independence within a short period of time with the Baltic Sea Link (OAL).

The health and satisfaction of our employees are also important for our sustainable corporate success. A good work-life balance is essential for this. Achieving a climate-neutral energy supply is closely linked to hydrogen as an energy source. In the „Flow - making hydrogen happen“ project, preparations for the conversion of existing pipelines from natural gas to hydrogen are in full swing. The first hydrogen transports from the Baltic Sea to Saxony-Anhalt will be possible as early as 2025. Our „AquaDuctus“ project is also continuing to take shape in order to transport hydrogen produced in the North Sea region to the mainland from 2030. These and other hydrogen projects will become part of the German hydrogen core network and thus an elementary component of Germany's future climate-neutral energy supply.

We look forward to making our contribution to the energy transition. All GASCADE employees are taking up this challenge and working to achieve our ambitious goals. We hope you enjoy reading our sustainability report.

## 2 OUR TRANSMISSION COMPANIES



### 2.1 Details on the Sustainability Report and Organization

GRI 2-1, 2-2, 2-3, 2-4, 2-5, 2-6, 2-14

This sustainability report was prepared for the following companies:

- GASCADE Gastransport GmbH  
(hereinafter referred to as GASCADE),
- NEL Gastransport GmbH  
(hereinafter referred to as NGT).

The previous year's report was also prepared for OPAL Gastransport GmbH & Co. KG (OGT). However, the Baltic Sea Pipeline Link (OPAL) and the regulated transportation business of OGT were merged into GASCADE in the 2023 reporting year.

All companies have their headquarters in Kassel. The business activities take place exclusively in Germany. The shareholder of GASCADE and NGT is W & G Transport Holding GmbH (WGTH). WGTH is a subsidiary of WIGA Transport Beteiligungs-GmbH & Co KG, a joint venture of Wintershall Dea AG and SEFE Securing Energy for Europe GmbH.

GASCADE not only operates and manages its own gas network, but also acts as a service provider in this function for pipelines (in particular EUGAL, NEL, OPAL) that are jointly owned by several German transmission system operators. For reporting aspects, emissions, and energy consumption,

these are primarily allocated to the GASCADE network and not broken down by ownership.

This Sustainability Report is based on the calendar year 2023. For our sustainability reporting, we comply with the internationally recognized GRI standards and apply the prescribed structure. The contact person for this report is the Sustainability Management at GASCADE. You are welcome to contact us by e-mail at [Nachhaltigkeit@gascade.de](mailto:Nachhaltigkeit@gascade.de).

The sustainability report and the topics identified were prepared by our management.

The content of the financial statements has been approved and is supported by the company. An external audit has not been carried out.

Together with NGT, GASCADE plans, builds, and operates one of the largest long-distance gas networks in Germany. We offer our customers competent and comprehensive transportation services. With our pipeline system of more than 4,100 kilometers, we connect several European countries directly with each other. We contribute to a secure energy supply for Germany and Europe through reliable gas transportation - today with natural gas and in the future with hydrogen.

More than 500 employees at 15 locations in Germany are working for the gas market of today and tomorrow. We transport gas flexibly to around 100 exit points. In our business activities, we distribute gas for the heating market and various industrial

customers throughout Germany. Natural gas continues to be an essential raw material for thermal and chemical processes in the industry, and natural gas is also being increasingly used in power plants to generate electricity in light of the phase-out of nuclear power.

Our business partners include gas importers who want to transport natural gas, biogas, and, in the future, hydrogen or synthetic methane to or within Germany. On the other hand, gas traders and down-

stream network operators book our gas transport capacities and act as intermediaries with industrial customers and municipal utilities. The communication and transmission of metering and transport data requires a complex information technology (IT) infrastructure, which is why we also work with IT service providers. In order to implement our large-scale infrastructure projects, many specialized civil and underground engineering companies and pipe producers are on duty. We operate high-performance compressors to transport gas volumes at a

high-pressure level. To ensure optimal operations, we work closely with plant and mechanical engineers for these assets.





**Corrections to the previous year's report 2022**

There were errors in the calculation of emissions caused by vehicles and methane emissions, which led to an overestimation of emissions in these areas in the 2022 Sustainability Report. This also affects the reported Scope 1 emissions. Here you will find the originally reported and corrected values:

Scope 1 emissions 2022	
(originally): 312,333 tCO <sub>2</sub> e	(corrected): <b>311,003 tCO<sub>2</sub>e</b>
Emissions from business trips by car 2022	
(originally): 2,291 tCO <sub>2</sub>	(corrected): <b>1,142 tCO<sub>2</sub></b>
Methanemissionen 2022	
(originally): 32,900 tCO <sub>2</sub> e	(corrected): <b>32,116 tCO<sub>2</sub>e</b>

**2.2 Organizational Structure**

GRI 2-1, 2-9, 2-10, 2-11, 2-12

The corporate governance of the independent transport network operators GASCADE and NGT consists, in addition to the Management Board, also of a Supervisory Board in accordance with the binding provisions of the German Electricity and Gas Supply Act (Energiewirtschaftsgesetz). This must be formed in accordance with the relevant provisions of the German Stock Corporation Act. The Supervisory Board performs the duties in-

cumbent upon it in accordance with the law and the Articles of Association, is responsible for monitoring the management, and acts in the interests of the companies. Although the Supervisory Board does not exercise any management functions, certain management decisions require the approval of the Supervisory Board. The Energy Industry Act also assigns certain responsibilities to the Supervisory Board, such as the decision on dividends to be paid to the shareholder. It fulfills its monitoring function by holding regular Supervisory Board meetings and submitting reports on the course of business, the company's situation, and fundamental questions of business policy. Sustainability issues are the subject of both the meetings and the management reports.

The Supervisory Board, which is elected by the shareholder WGTH, currently (as of March 2024) consists of the following members:

**Mario Mehren, Chairman**

Chairman of the Executive Board of Wintershall Dea AG, Celle / Kassel

**Dr. Egbert Laege, Deputy Chairman**

Managing Director of SEFE Securing Energy for Europe GmbH, Berlin

**Burkhard Genge**

Pensioner, former Chairman of the Board of Management of WINGAS GmbH, Kassel and former member of the Board of Management of the former Wintershall Holding GmbH, Celle / Kassel

**Margarita Hoffmann**

Vice President at Wintershall Dea AG, Celle / Kassel

**Dr. Jörg Kammerer**

Legal Director of SEFE Securing Energy for Europe GmbH, Berlin

**Otto Musilek**

CEO of MEC Management-Energy-Consultancy, Vienna, Austria, former Managing Director of OMV Gas GmbH, Vienna, Austria

GASCADE and NGT are certified by the Federal Network Agency as independent, fully regulated transmission system operators under German law and on the basis of the Energy Industry Act. We are therefore legally obliged to conduct our transportation business in a non-discriminatory manner and independently of the interests of our direct or indirect shareholders. The fulfilment of these obligations is monitored by an internal compliance and equal treatment program, an equal treatment officer who is not bound by instructions, and by the Federal Network Agency.



## 2.3 Memberships

GRI 2-28

GASCADE will rededicate parts of its infrastructure to future hydrogen transportation and, where necessary, build new hydrogen pipelines. The emergence of the hydrogen market and the hydrogen infrastructure is currently being monitored by many players with different focal points (including future market design, technical regulations, regulatory framework conditions). In order to help shaping this transformation process, GASCADE is actively involved in several initiatives and associations.

The AquaVentus initiative - an association of over 100 companies and organizations from industry and research - aims to usher in a new era of climate-friendly energy by producing green hydrogen in the German North Sea. The overarching goal of the association and its members is to install ten GW of production capacity for green hydrogen from offshore wind by 2035 and to establish the AquaDuctus transport infrastructure.









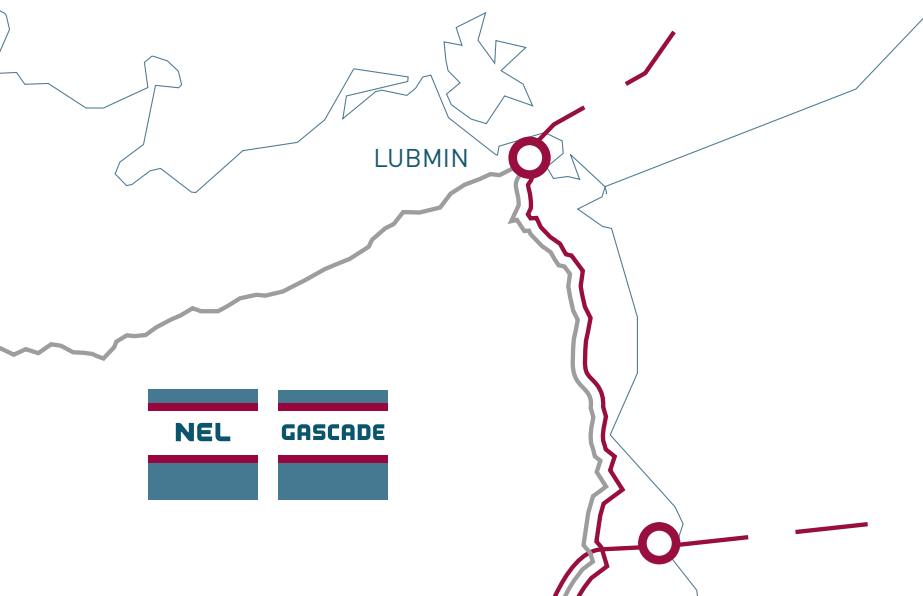




GASCADE is also actively involved in these associations, among others:

- BDEW Bundesverband der Energie- und Wasserwirtschaft e.V.
- DVGW Deutscher Verein des Gas- und Wasserfaches e.V.
- DWV Deutscher Wasserstoffverband e.V.
- Weltenergierat e.V.
- Vereinigung der Fernleitungsnetzbetreiber Gas e.V.
- ENTSOG European Network of Transmission System Operators for Gas
- VST Verband Sichere Transport- und Verteilnetze / KRITIS e.V.
- EASEE-gas, the European Association for the Streamlining of Energy Exchange-gas
- GIE Gas Infrastructure Europe
- OGMP Oil & Gas Methane Partnership 2.0

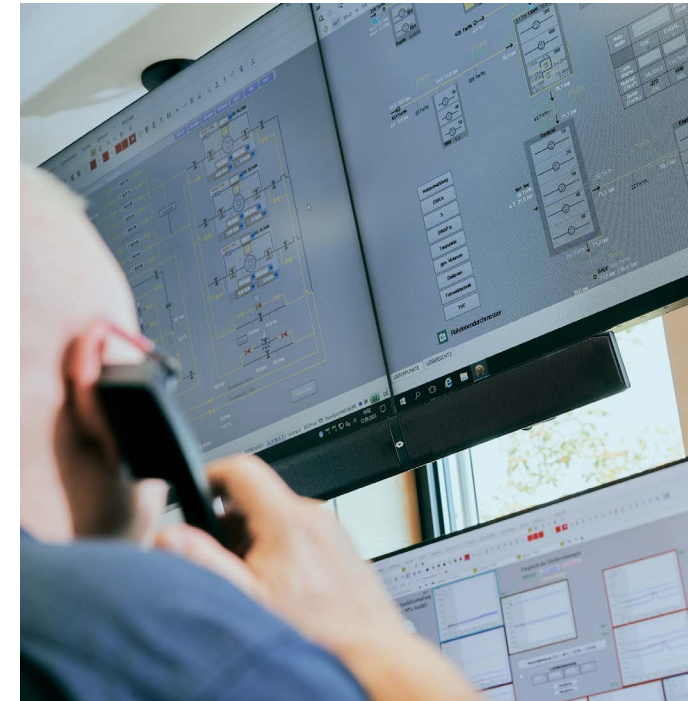
GASCADE supports society's desire to strengthen the legitimacy of the decision-making processes of parliament and government by making political influence transparent. For this reason, GASCADE documents its own lobbying activities as part of the political decision-making process in the lobby register of the Bundestag.



## 2.4 Complaint management

### GRI 2-25

According to the process description in quality management, problems from customers or contractual partners that cannot be resolved within one day at the latest are considered complaints. The focus is therefore on the customer and partner relationship of the Capacity Management department. All complaints received by Capacity Management are summarized within a calendar year and presented to the management in a report at the end of the year. The complaints are grouped into categories and initial solutions/resolution approaches are presented. In 2023, there were complaints from a business partner on various topics. Through continuous exchange with this business partner, ambiguities, e.g. regarding publication or the bilateral exchange process, were resolved. A total of two complaints were recorded in 2023. Compared to the previous year with eight complaints, this is a significant improvement. GASCADE therefore has no unresolved complaints from 2023.



# 3

## MATERIALITY AND SUSTAINABILITY STRATEGY

### 3.1 United Nations: Sustainable Development Goals

We welcome the United Nations' initiative for sustainability and are committed to contributing to the achievement of the 17 Sustainable Development Goals. In doing so, we will drive forward measures to achieve the following six goals:



#### 4 High-quality education

Objective: Ensure inclusive, equal, and high-quality education and promote lifelong learning opportunities for all.

Ensuring the stable and safe construction and operation of our pipeline network is a top priority in our business activities. Our employees ensure that gas transportation runs smoothly. The complex technical and commercial processes in our day-to-day business as a regulated network operator require a high-quality training of our employees, whose ideas help us to constantly optimize our processes and make them more sustainable. In addition to regular further training opportunities, we also promote transfers within our transport companies (more on this in 5.6). We also introduce students to jobs at our transport companies while they are still studying and create highly qualified jobs at our operating locations through vocational training opportunities, even in structurally weak regions.

#### 7 Affordable and clean energy

Objective: Ensure access to affordable, reliable, sustainable, and modern energy for all.

It is our aspiration and a matter of course to guarantee our customers an efficient and reliable energy supply. The results of our stakeholder analysis (more on this in 3.3) confirm that we are well positioned in the areas of „Stable and secure pipeline network“ and „Affordable gas supply“. To ensure

that the costs of energy transportation in a decarbonized energy future, we are working intensively on the rededication and continued use of existing natural gas pipelines for the transportation of hydrogen and climate-neutral gases (more on this in 7.3).

#### 8 Decent work and economic growth

Objective: Permanent, broad-based, and sustainable economic growth, productive full employment, and decent work for all.

Without fair working conditions that comply with industry standards, we cannot make our contribution to sustainable economic growth. We therefore consider job security, work-life balance, adequate and fair remuneration, and development prospects to be a matter of course (more on this in 5.1-5.7).

#### 9 Industry, innovation and infrastructure

Objective: To build a resilient infrastructure, promote broad-based and sustainable industrialization, and support innovation.

Our pipeline infrastructure connects five countries in the heart of Europe. To pave the way to decarbonized production for our customers and European industry as a whole, we want to use our infrastructure to transport climate-neutral gases and hydrogen (more on this in 7.1-7.3). To achieve this, we are already involved in a large number of hydrogen projects and want to play an active role in shaping the development of a European hydrogen infrastructure. This will enable us to significantly

reduce both our operational greenhouse gas emissions and those of our industrial customers in the future.

#### 13 Climate protection measures

Objective: Take immediate action to combat climate change and its effects.

With the aim of achieving climate-friendly gas transport, we are pursuing technical approaches to reduce CO<sub>2</sub> emissions during gas transport and minimize methane emissions (more on this in 4.3). We believe that significantly reducing our methane emissions is the most effective way to help stop climate change. Our plant engineers and technicians are working hard to develop processes that will enable us to further minimize our greenhouse gas emissions.

The increased use of electric compressors instead of gas turbines and the procurement of green electricity are also ways to reduce emissions in our business operations.

In the case of construction measures, our top priority is to restore the area to its original state prior to the construction work. We renaturalize habitats, pay attention to biodiversity, and take ecological compensation measures (more on this in 4.4). In the future, we would like to promote ecological diversity even more strongly with the areas we own and, where possible from a regulatory perspective, make greater use of renewable energies.



### 17 Partnerships to achieve the goals

Objective: Strengthen means of implementation and fill the global partnership for sustainable development with new life.

Since our company was founded, we have been involved in relevant international initiatives and associations to actively shape the development of the energy market (more on this in 2.3). Cooperation with players and market participants at national and international levels is essential for cross-border gas transportation. Partnerships are just as essential in the development of the infrastructure for a hydrogen market and are a decisive building block for the success of the transformation to a climate-neutral energy supply.



### 3.2 Potentially Material Topics

#### GRI 3-1, 3-2, 3-3

To assess the material topics for us, we first considered the GRI 11: 2021 Oil and Gas standard. As a regulated network operator, we are solely responsible for the operation of our gas infrastructure and gas transportation within Germany, or we perform this function as a service provider for other German network operators. Due to regulatory and legal requirements, transportation is strictly separated from the production and trading of gas. For this reason, many of the material issues defined in these areas are not classified as material for us.

The material topics specified in the GRI 11: 2021 Oil and Gas standard have been reviewed by an expert panel of employees from sustainability management, strategy, and business development and were analyzed in a workshop and assessed with regard to their current status. For many topics, there was either insufficient probability of occurrence or we did not consider the impact to be material. Nevertheless, we identified topics that we currently consider unlikely to be material, but which could become so in the future. We therefore also provide information on these topics, such as biodiversity, occupational health and safety or air emissions, in this report, even if our initial assessment is that the materiality threshold is not fully met.

The adjacent list shows the material topics covered by the GRI 11: 2021 Oil and Gas standard which are

specified in the prioritization for our transport companies. We have a traffic light system to illustrate the respective priority for us. We consider the topics highlighted in green to be material and those highlighted in red to be non-material. We rate the topics in yellow as currently not material, although they have the potential to become material topics in the coming years, which is why we continuously evaluate them – just like the other topics that are likely to be material.

#### List of material topics

- + GHG emissions (GRI 11-1)
- + Climate-related adaptation, resilience and transition to a low-carbon economy (GRI 11-2)
- Occupational health and safety (GRI 11-9)
- Biodiversity (GRI 11-4)
- Air emissions (GRI 11-3)
- Integrity of assets and management of critical incidents (GRI 11-8)
- Non-discrimination and equal opportunity (GRI 11-11)
- Political influence (GRI 11-22)
- Decommissioning and restoration (GRI 11-7)
- Economic impact (GRI 11-14)
- Anti-competitive behavior (GRI 11-19)
- Conflict and security (GRI 11-18)
- Waste (GRI 11-5)
- Water and wastewater (GRI 11-11-6)
- Anti-corruption (GRI 11-20)
- Employment practices (GRI 11-10)
- Forced labor and modern slavery (GRI 11-12)
- Freedom of association and collective bargaining (GRI 11-13)
- Local communities (GRI 11-15)
- Land and mineral rights (GRI 11-16)
- Rights of indigenous peoples (GRI 11-17)
- Payments to the state (GRI 11-21)


3.3 Stakeholder Analysis

GRI 2-29

In 2020, we carried out a comprehensive stakeholder analysis, including a survey, to highlight the key aspects of our corporate activities in connection with sustainability. We consider it important to regularly analyze and survey the stakeholders relevant to us in order to focus on key sustainability goals. We conducted another survey of our stakeholders in spring 2024 and will take this into account in the further development of our materiality analysis in the next sustainability report.

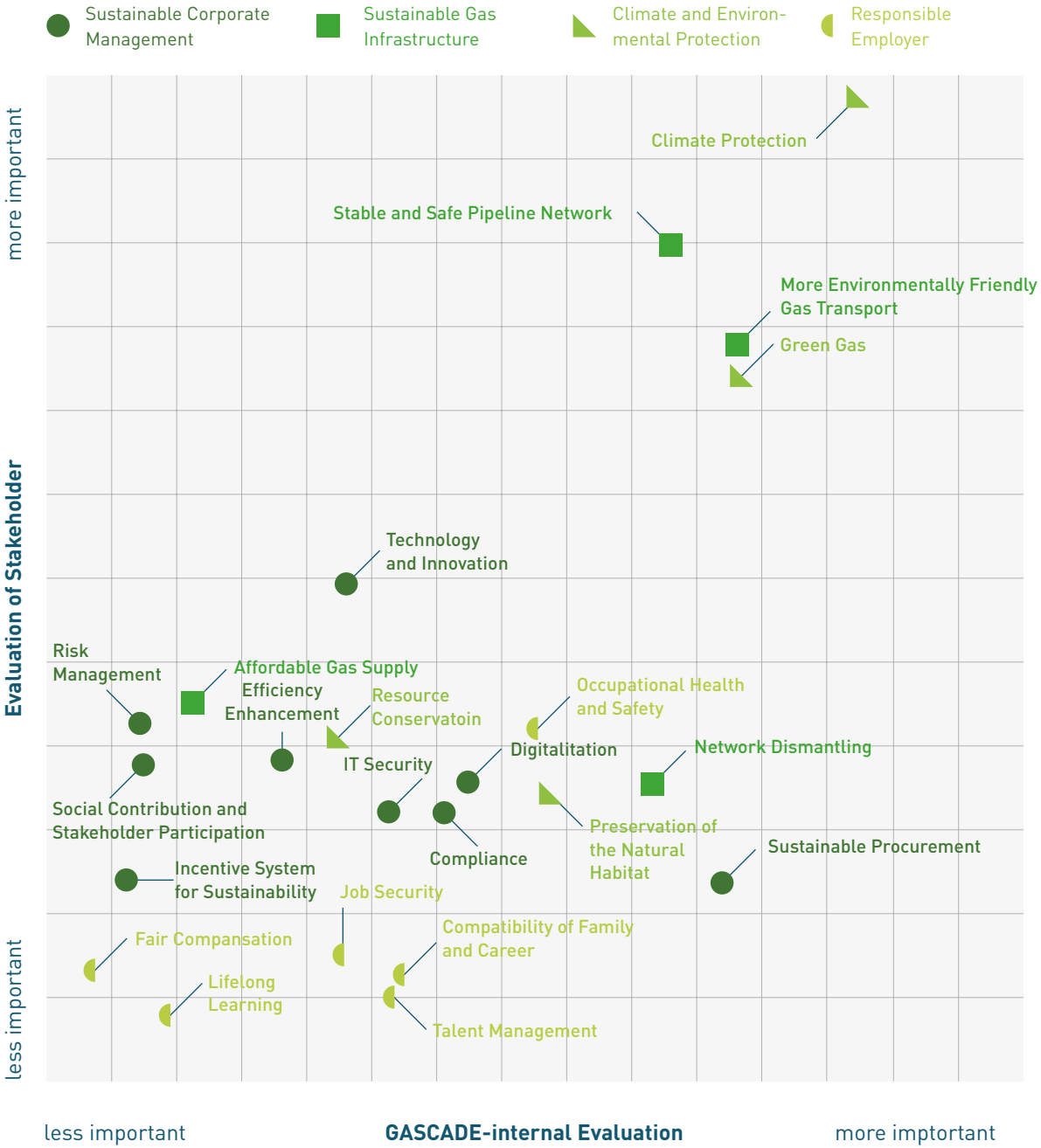
In addition to all our employees, many external stakeholders such as customers, business partners, business and environmental associations, representatives of authorities, and contacts from politics and science were included in the survey.

For the survey, we first identified the following 23 relevant sustainability topics from four fields of action:

<div> Sustainable Corporate Management</div>	<div> Sustainable Gas Infrastructure</div>
<ul style="list-style-type: none"><li>• Sustainable Procurement</li><li>• Digitization</li><li>• Compliance</li><li>• IT Security</li><li>• Incentive System for Sustainability</li><li>• Risk Management</li><li>• Efficiency Enhancement</li><li>• Social Contribution and Stakeholder Participation</li><li>• Technology and Innovation</li></ul>	<ul style="list-style-type: none"><li>• More Environmentally Friendly Gas Transport</li><li>• Stable and Safe Pipeline Network</li><li>• Network Dismantling</li><li>• Affordable Gas Supply</li></ul>
<div> Climate and Environmental Protection</div>	<div> Responsible Employer</div>
<ul style="list-style-type: none"><li>• Climate Protection</li><li>• Green Gas</li><li>• Preservation of the Natural Habitat</li><li>• Resource Conservation</li></ul>	<ul style="list-style-type: none"><li>• Occupational Health and Safety</li><li>• Compatibility of Family and Career</li><li>• Talent Management</li><li>• Job Security</li><li>• Lifelong Learning</li><li>• Fair Compensation</li></ul>

To prioritize the relevant sustainability topics, we have summarized the results of the survey in the adjacent materiality matrix.

The results show that our stakeholders see little need for action in aspects such as job security, fair remuneration, and lifelong learning. We see ourselves as a responsible employer and see this claim confirmed by the feedback from our stakeholders. We also want to be well positioned in the key areas of sustainable corporate governance such as IT security, compliance, and digitalization, as confirmed by our stakeholders. Nevertheless, we strive to continuously improve our processes and maintain our high standards.





The sustainability topics of greatest importance from our stakeholders' perspective are climate and environmental protection and sustainable gas infrastructure.

The results show that three of the four key areas of action identified are associated with the greatest need for action - supplemented by the topic of technology and innovation. Our stakeholders believe that we are well positioned in the areas of „Occupational health and safety“ and „Affordable gas supply“.

When it comes to „Grid expansion“ and the operation of a „Stable and secure pipeline network“, we are also high level of expertise.

Our strengths and weaknesses were also analyzed as part of the stakeholder survey. The following picture emerged:



3.4 Opportunity-Risk Assessment  
GRI 11-2, 201-2

Our business activities are limited to services in connection with the transportation of gases in Germany. Our networks are modern, efficient, and powerful and are designed to operate for many decades. There are practically no physical risks directly associated with climate change, such as storms, drought or flooding, for our transport pipelines and our business activities. However, we are keeping an eye on climate change scenarios and analyzing their impact on our current and future business activities.

As part of our materiality analysis launched in 2024, we also conducted a new stakeholder survey and asked our stakeholders to assess the greatest opportunities and risks for our business activities. As a result, the five biggest opportunities and risks are listed here:



Opportunities for GASCADE	Risks for GASCADE
1. Climate change	1. Climate change
2. Political influence	2. Political influence
3. Use of resources and circular economy	3. Information security
4. Fair remuneration	4. Recruitment
5. Work-life balance	5. Environmental pollution

**Opportunities for GASCADE:****1. Climate change**

- By switching from fossil gases to CO<sub>2</sub>-neutral gases such as hydrogen, we can continue to use existing infrastructure in the long term and implement new projects at the same time.
- We can reduce our emissions through energy efficiency measures and the use of renewable energies.

**2. Political influence**

- Participation in political dialog can promote appropriate framework conditions for our infrastructure to achieve the energy policy triangle (environmental compatibility / security of supply / economic efficiency).

**3. Use of resources and circular economy**

- Rededicating infrastructure for the use of hydrogen conserves resources and is more cost-effective.

**4. Fair remuneration**

- Fair remuneration increases the attractiveness for new and existing employees, which leads to low staff turnover.

**5. Work-life balance**

- Greater motivation of employees through work-life balance and support for long-term health through sports and leisure activities as compensation.

**Risks for GASCADE:****1. Climate change**

- Risk for existing natural gas infrastructure and uncertainties in the development of the hydrogen market ramp-up.
- Sanctions and risk of legal action in the event of non-compliance with legal obligations.

**2. Political influence**

- Political framework conditions are designed in such a way that they have a negative impact on our business model and may lead to higher costs.

**3. Information security**

- Failure of our infrastructure or loss of data due to IT attacks / sabotage.
- The potential for blackmail with the potential for financial damage and possible loss of reputation.

**4. Recruitment**

- Skills shortage: Too few suitable staff leads to fewer project implementations and problems with current and new business activities.

**5. Environmental pollution**

- Disproportionality of environmental measures due to strict legal requirements.
- Claims for damages and risk of legal action.

We are also prepared for the future in other areas. Opportunities, for example in the social areas of „fair remuneration“ and „work-life balance“, where we are obviously perceived positively by our stakeholders. We are also seen as having a clear opportunity to restructure our management network in a resource-efficient manner.

The issue of information security is mentioned among the other risks. The increase in the threat of cyber-attacks has risen significantly in recent years. We are aware of this and have been pioneering the implementation of appropriate measures in our industry for many years. The issue of recruitment is becoming increasingly important in the wake of the growing shortage of skilled workers. We do not yet see this as a fundamental threat to us, but we should continue to do everything we can to remain an attractive employer. To contain environmental pollution and compensate for damage, we regularly take measures to preserve biodiversity and the ecological balance. Nevertheless, there is a risk that we could be confronted with claims for damages or legal action for potential environmental damage in the course of construction and operational activities. However, we currently consider the risk of this to be low. In any case, we treat our environment as carefully as possible. Compliance with legal requirements is a matter of course for us.

### 3.5 Further Development of the Materiality Analysis

For our next sustainability report, we are applying the principle of double materiality for the first time for the materiality analysis. We will complete this materiality analysis in 2024. Double materiality is characterized by the fact that both the impact of corporate activities on the environment, people and society (inside-out perspective) and the effect of sustainability issues on the company's business activities (outside-in perspective) are considered. We would like to explain our approach in more detail below.

#### 1. Identify potentially material topics

Consideration of topics from the European Sustainability Reporting Standards (ESRS) of the Corporate Sustainability Reporting Directive (CSRD), from GRI Standards 2, 3 and 11 and from comparisons with other companies in the same sector.

#### 2. Conduct a stakeholder survey

Initially, stakeholders only assess topics in terms of their general materiality.

#### 3. Committee meetings of topic experts

In these meetings, opportunities and risks as well as negative and positive effects are analyzed in relation to the individual topics. The topics are also assessed with regard to their double materiality.

#### 4. Create a materiality matrix

The evaluation of the stakeholders and the results from the committee meetings are considered here, whereby the evaluation from the committee meetings is given a higher weighting. We are convinced that this methodology provides us with the most expedient results. On the one hand, the stakeholder survey allows us to obtain the widest possible range of opinions and views without overburdening all stakeholders with the intricacies of double materiality. On the other hand, the panel of experts allows us to weight the topics in terms of impact, opportunities, and risks as well as the probability of occurrence. The expert panels, which are made up of internal stakeholders, also have a detailed overview of our business model, which is important for weighting the outside-in perspective. This allows us to prioritize the relevant topics in a targeted manner.

#### 5. Review sustainability strategy and report content

Following the finished materiality analysis, the current sustainability strategy is reviewed and, if necessary, adjusted in line with the new findings. We will also prepare to meet the reporting requirements for the material topics.



3.6 Sustainability Strategy

GRI 2-22

Our sustainability strategy comprises four core topics in which we see a need for action and in which we want to achieve an improvement or maintain our high level in the coming years. The results of the stakeholder analysis have guided us in identifying the core topics. Our strategic priorities will be adjusted based on the results of future stakeholder surveys. We are focusing on the four core topics of „Environmentally friendly gas transport“, „Stable

and secure pipeline network“, „Climate-neutral energy supply“ and „Responsible company“. These core topics form an overarching framework for various measures that we will drive forward and implement in the coming years. We see them as a suitable framework for a holistic approach to sustainability at all levels of our business activities and as an opportunity to anchor the topic of sustainability as a normative guiding principle. The core topic of „environmentally friendly gas transportation“ currently comprises the most measures. Making gas transportation more environ-

mentally and climate-friendly is also our biggest challenge. This is a long-term, continuous optimization process that we cannot tackle alone because load flow control depends on the needs of our transport customers. Large gas compressors, which are necessary to operate the grid, cannot be decarbonized in the short term. Nevertheless, we have developed various approaches to tackle these problems. For example, we are working on concepts for the use of renewable energies and are trying to optimize our load flow control using sustainability criteria. At the same time, we are re-

ENVIRONMENTALLY FRIENDLY GAS TRANSPORT	STABLE AND SECURE PIPELINE NETWORK
<ul style="list-style-type: none"><li>• Use of renewable energies</li><li>• Sustainable load flow control</li><li>• Methane emission reduction measures</li><li>• Renaturation and promotion of biodiversity</li><li>• Energy efficiency measures</li></ul>	<ul style="list-style-type: none"><li>• Occupational safety</li><li>• HSE measures to prevent accidents</li><li>• Security of supply</li><li>• Governance and management systems</li><li>• Digitalization</li></ul>
CLIMATE-NEUTRAL ENERGY SUPPLY	RESPONSIBLE COMPANY
<ul style="list-style-type: none"><li>• Development of hydrogen infrastructure</li><li>• Compensation measures for emissions</li></ul>	<ul style="list-style-type: none"><li>• Buildings</li><li>• Mobility</li><li>• Suppliers</li><li>• Personnel issues</li><li>• Social commitment</li></ul>

ducing our methane emissions by using pump-over compressors.

We see less of an acute need for action when it comes to the core issue of a stable and safe pipeline network. In general, the secure supply for our customers and the issue of occupational safety have always been our top priority and remain the basic prerequisite for economically sustainable action. We therefore aim to maintain our high standards through various activities in the area of health, safety, and environment (HSE) as well as process optimization and established management systems.

Another core topic, „climate-neutral energy supply“, is derived from the long-term orientation of our business activities for the transportation of gases. We are already setting the course today to prepare our network for the transportation of hydrogen and to plan the additional infrastructure that will connect hydrogen producers and consumers. In this area, the planning and construction of offshore pipelines is particularly important because the substantial production of green hydrogen will take place in offshore wind farms. On land, we are examining the rededication of existing pipelines

from a technical and economic perspective. In order to get closer to the goal of climate neutrality, reducing and avoiding emissions is a high priority. However, some emissions cannot be reduced in the short term for economic or process-related reasons, which is why offsetting emissions can make a valuable contribution in some cases.

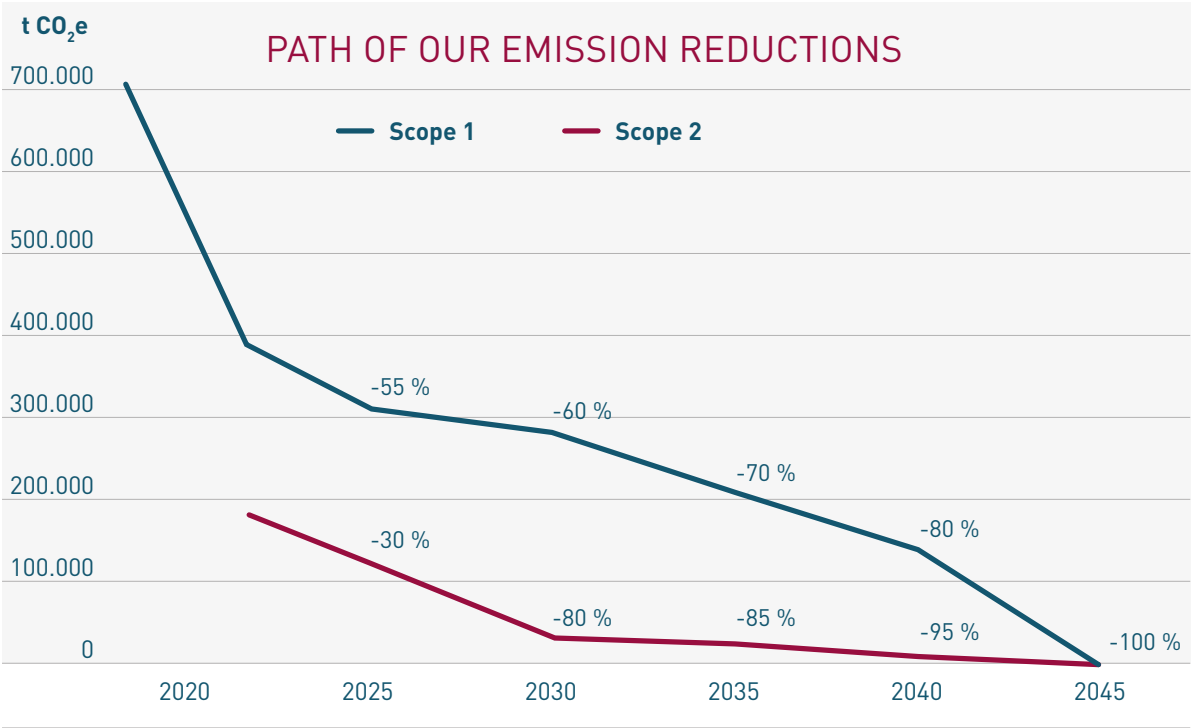
We pursue a holistic approach to sustainability and actively try to make processes that are not part of our core business more sustainable. We therefore see ourselves as a „responsible company“. The operational focus on key issues is important, but we are rethinking the way we do business to conserve resources at all levels. This includes, for example, sustainable mobility for our employees, sustainable office and factory buildings and their management, as well as our social commitment.



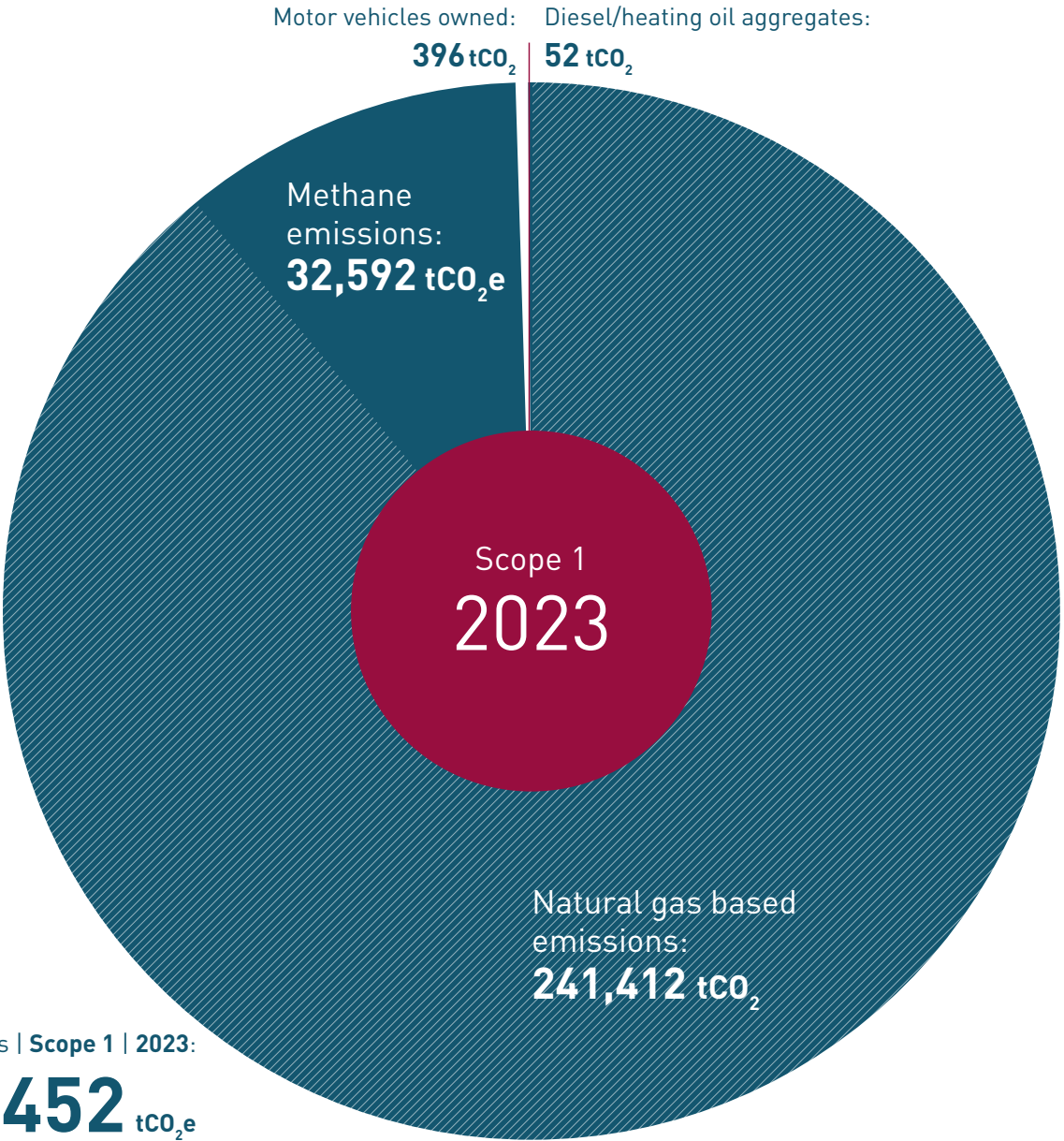
3.7 Our Path to Climate Neutrality  
GRI 11-2

We are committed to the goals of the Paris Climate Agreement and the German Climate Protection Act and want to make our contribution to a climate-neutral world. The following graphic shows our reduction path in the coming years with the clear goal of reducing our activity-related emissions to net zero by 2045 at the latest. In general, we believe that we as a company are well equipped for the transition to a low-emission economy. Assuming that hydrogen and climate-neutral gases will play a significant role in the energy supply, we will be able to operate our infrastructure in a similar way to how we do today. GASCADE employees are already working on this energy future and want to play an active role in shaping the transition to a climate-neutral energy future by providing the necessary infrastructure. To further assess the resilience of our future strategy, we must first wait for the German and European market design for hydrogen transportation.

The first steps in the right direction have been taken. We have been able to reduce our emissions for both Scope 1 and Scope 2 and are well on the way to achieving our targets for 2025.



	Scope 1	Scope 2
Base year	2018	2022
2025	-55 %	-30 %
2030	-60 %	-80 %
2035	-70 %	-85 %
2040	-80 %	-95 %
2045	-100 %	-100 %



# 4 ENERGY AND ENVIRONMENT

## 4.1 Emissions

### 4.1.1 Scope 1

GRI 11-1, 305-1

#### SCOPE 1

- Natural gas-based emissions
- Motor vehicles owned
- Diesel/heating oil units
- Methane emissions

### Reduction of scope 1 by 55 % by 2025\*

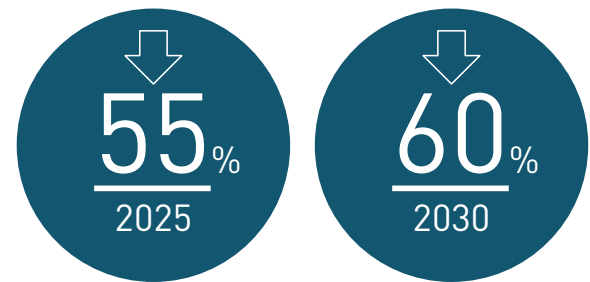
\* compared to the base year 2018

#### Emission sources

By far our largest direct source of emissions are compressors and stations powered by natural gas. Our Scope 1 emissions are therefore primarily generated by natural gas-based consumption units. Natural gas is also used to heat buildings at many locations. The emissions from our motor vehicles must also be added to this. In addition, most of our stations have diesel-powered emergency supply

units, which are operated every year at least for test purposes and cause direct emissions. Scope 1 emissions also include methane emissions, which are generated as fugitive emissions during our grid operations. A significant part of our current measures in the area of energy and the environment (more on this in 4.3) are primarily aimed at reducing our methane emissions, but the efficient use of energy is also becoming increasingly important to us.

Goals

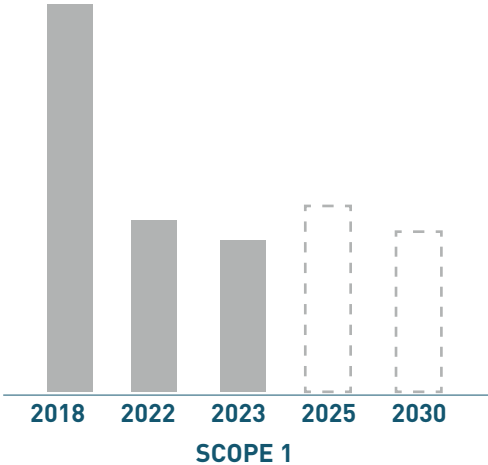


We are committed to continuously reducing our Scope 1 emissions. We want to reduce emissions by 55% by 2025. In recent years, we have already implemented optimizations in grid operation and measures to avoid methane emissions in order to achieve our emission reduction targets. We want to reduce our Scope 1 emissions by 60% by 2030, which means we will even exceed the European emission reduction targets. We will reduce our direct emissions to net zero by 2045 at the latest.

Calculation methods

We have chosen the operational control method for the operating units as the consolidation approach for calculating our Scope 1 emissions, as is also the case for other reporting obligations. As we operate individual operating units as joint owners, an ownership-based allocation of emissions would be more advantageous for us, but we would like to proceed as uniformly as possible with the published data. We chose 2018 as the base year because we were already operating a comparable and similarly efficient gas infrastructure at that time.

For the emission values, we calculated with the measured natural gas consumption and standard factors for the conversion from calorific value to heating value and the standard emission factor of the German Emissions Trading Authority (DE-HSt). The calculation of the carbon dioxide equivalents (CO<sub>2</sub>e) of methane was based on the relative global warming potential (GWP) with a value of 28 and a time horizon of 100 years. For the Scope 1 emissions recorded, we have limited ourselves to the greenhouse gases carbon dioxide (CO<sub>2</sub>) and methane (CH<sub>4</sub>), which are material for our business activities.



SCOPE 1

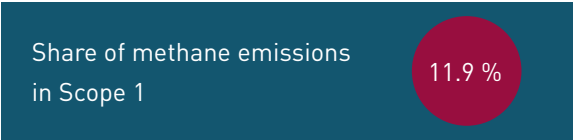
	2018	2022	2023
Natural gas-based emissions	635,208 tCO <sub>2</sub>	278,208 tCO <sub>2</sub>	241,412 tCO <sub>2</sub>
Motor vehicles owned	1,175 tCO <sub>2</sub>	1,175 tCO <sub>2</sub>	396 tCO <sub>2</sub>
Diesel/heating oil aggregates	50 tCO <sub>2</sub>	50 tCO <sub>2</sub>	52 tCO <sub>2</sub>
Methane emissions	67,424 tCO <sub>2</sub> e	32,900 tCO <sub>2</sub> e	32,592 tCO <sub>2</sub> e
Total emissions	703,857 tCO <sub>2</sub> e	312,333 tCO <sub>2</sub> e	274,452 tCO <sub>2</sub> e



Comparison of figures for 2018

Total Scope 1 emissions: approx. 703,857 tCO<sub>2</sub>

For the emissions from motor vehicles and diesel engines, we used the emissions for 2022 as comparative values for 2018. It can be assumed that the actual emissions in this area were higher in 2018. In the methane sector, the emissions are based on an extrapolation of our database between 2015 and 2022.



It is clear that we have already achieved our target of reducing emissions by 55% by 2025 ahead of schedule. We are currently already at a reduction in emissions of 60 percent compared to the base year. Compared to the previous year, we were able to reduce our Scope 1 emissions by a further twelve percent. However, our Scope 1 emissions are highly dependent on external factors, as our customers' transportation requirements have a significant influence on compressor operation. We therefore do not consider it appropriate to issue new targets in this area. However, we are of course trying to further reduce our emissions through technical optimization.

4.1.2 Scope 2

**SCOPE 2**

- Electricity
- District heating

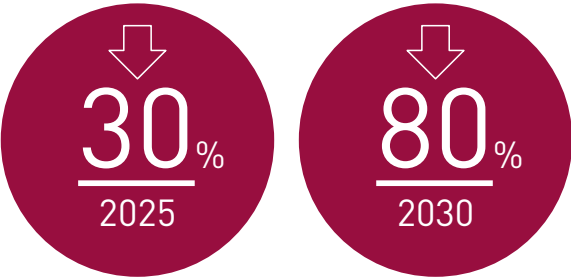
Scope 2 reduction by 30 % by 2025\*\*

\*\* compared to the base year 2022

Emission sources

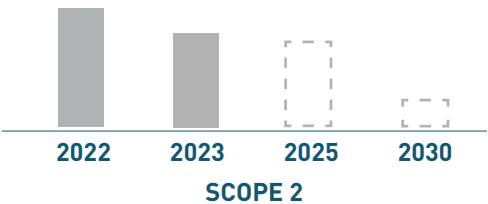
Our Scope 2 emissions are made up of the purchase and use of electricity and district heating together. We need electricity to drive our electric compressors and generally for the building management of our company headquarters and our operating facilities. We obtain district heating at one location from a power plant that primarily uses fossil fuels. It may be possible to switch the use of fuel in this area in the coming years, but this is not within our decision-making authority.

Goals



Due to changes in gas flows in our transportation system, the usage structure of the compressors has also changed. In 2022, the electric compressors in our grid operated for significantly more hours than in previous years. As a result, our electricity consumption increased substantially in 2022 - including the associated emissions. With an electricity supply agreement valid from 2023, our transport companies at existing grid connections will purchase electricity entirely from renewable sources. At one compressor site, however, we are not connected to the electricity grid and obtain our electricity directly from a fossil fuel power plant. We are currently assuming that this situation will change from 2028. We are therefore optimistic that we can achieve a significant reduction in our Scope 2 emissions by 2030.

Our short and medium-term goals are therefore as follows:



SCOPE 2

	2022	2023
Electricity	165,049 tCO <sub>2</sub>	128,755 tCO <sub>2</sub>
District heating	13,617 tCO <sub>2</sub>	0 tCO <sub>2</sub>
Total emissions	178,666 tCO <sub>2</sub>	128,755 tCO <sub>2</sub>

Calculation methods

For the calculation of our Scope 2 emissions, we have chosen operational control over the operating units as the consolidation approach, as we did for Scope 1 emissions. As base year for our Scope 2 emissions, we have chosen the reporting year 2022, as the reversal of supply flows has drastically increased our electricity use and the associated emissions. We used the Federal Environment Agency’s emission factors for electricity production

(as of 15/2022) as the emission factor for our electricity procurement.

We were able to reduce our Scope 2 emissions by 28% compared to our base year 2022. This was primarily due to the higher proportion of green electricity in our consumption. We also did not use any district heating. We have therefore already come very close to our target of reducing Scope 2 emissions by 30 percent by 2025. Achieving the target in the short term is therefore realistic.

4.1.3 Scope 3

Like many other companies, we face the challenge of correctly and fully recording Scope 3 emissions. We have once again decided not to publish any Scope 3 emissions data in the 2023 reporting year. In particular, the upstream indirect emissions from suppliers, service providers, and construction companies require extensive analysis and research. We are also evaluating the influence of the various value chains and trying to quantify their emissions appropriately. We set up a corresponding project in 2023 and engaged in intensive discussions with the other German transmission system operators but would like to further validate the results of our analyses.

Emission intensity

emissions in t CO<sub>2</sub>e (Scope 1 + Scope 2) per transported energy in TWh

t CO<sub>2</sub> e

TWh

1,130

4.1.4 Methane Emissions

Reduction of methane emissions  
by 70 % by 2025\*\*\*

\*\*\* compared to the base year 2015

Reduction of methane emissions  
by 75 % by 2030\*\*\*

\*\*\* compared to the base year 2015

We are committed to further reducing our methane emissions. Our medium-term targets are to reduce methane emissions by 70% by 2025 and by 75% by 2030.

In the current reporting year 2023, we have already reduced our methane emissions by around 68% compared to our base year 2015. We are making very good progress in this area and consistently take measures to further minimize our emission sources.

In 2023, we once again carried out a comprehensive measurement campaign for our entire pipeline network (incl. NGT). Here, 260,000 measuring points were tested, while at the same time plant-specific measurements were completed. In 2023, we also received the Gold Standard for reporting our methane emissions as part of the International Methane Emission Observatory (IMEO) of the United Nations Environment Program (UNEP) for the third time.

GASCADE reports on methane emissions for its own and externally operated plants on the basis of regular measurements.



4.1.5 Air Emissions

In addition to CO2 and methane emissions, we also continuously record other air emissions, in particular carbon monoxide (CO) and nitrogen oxides (NOx), and report on these as part of the Federal Immission Control Act (BImSchV). Our HSE specialist department regularly takes measures to improve combustion processes and reduce process-related air emissions.

Air emissions 2022/2023 in comparison

Year	2022	2023
NOx	200t	195t
CO	176t	213t

The significant changes to the transport routes in our network in 2023 have led to a deviation in the operation of our compressors, which is why air emissions have increased compared to the previous year. These emissions should decrease by 2026 at the latest with the commissioning of our new compressor station in Reckrod due to the increased use of electric compressors.

4.2 Energy

GRI 11-1

4.2.1 Energy Consumption

The highest energy consumption is due to the use of natural gas in our compressor plants and other operating facilities. In 2023, 1,327 gigawatt hours (GWh) of energy were consumed. Compared to the previous year (1,534 GWh), we were able to reduce our energy consumption in this area by a further 13%. Our electricity consumption also fell by 11% compared to the previous year. We want to reduce energy consumption further, but we are dependent on the bookings of our transport customers with regard to grid operation and the associated use of compressors. We aim to further reduce energy con-

sumption by developing and implementing energy efficiency measures.

Intensity Energy consumption

Energy consumption in kWh/a  
(Consumption within the organization without vehicle fleet) per transported energy in kWh/a

0.004

4.2.2 Share of Renewable Electricity

We achieved our target for 2023 of increasing the share of renewable electricity to 25%. In the reporting year, the proportion of renewable electricity was 25.9%. The aim now is to gradually reduce the proportion of fossil electricity used by our electric compressors.

Target for 2023 achieved!

Share of renewable electricity from:

25.9 %

Total energy consumption

Used energy source	Power Consumption (kWh/a)		Share of total energy consumption (%)	
	2022	2023	2022	2023
Electricity	172,206,932	153,013,025	10 %	10 %
Natural gas	1,534,285,526	1,327,927,721	87 %	90 %
District heating	48,630,727	-	3 %	0 %
Diesel/fuel oil	215,048	219,718	0.01 %	0.01 %
Total	1,755,338,234	1,481,160,465	100 %	100 %

4.3 Measures in the Area of Energy and Environment

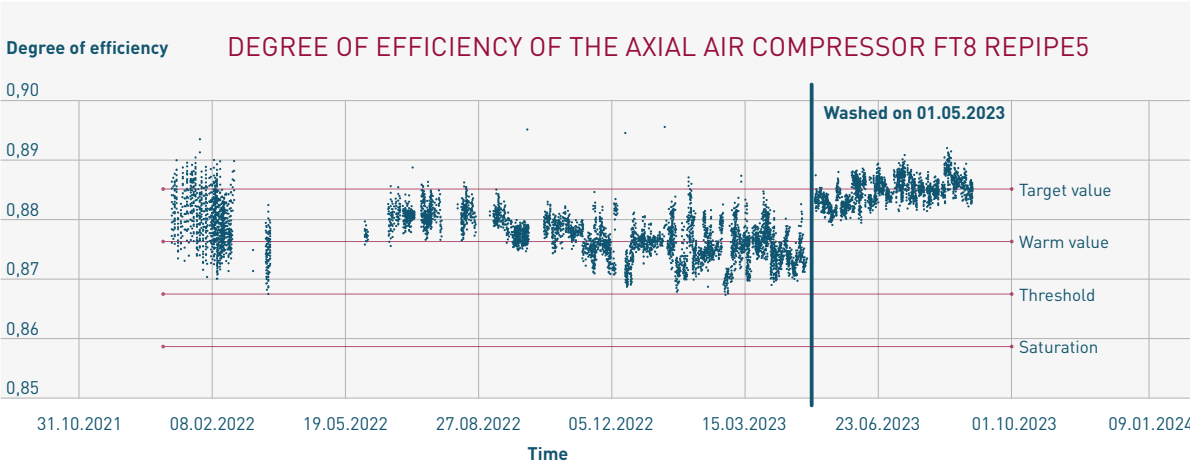
Through our certified energy management in accordance with DIN EN ISO 50001, it is our clear goal to increase energy efficiency of GASCADE and NGT and to support the individual sub-areas in implementing measures to reduce energy consumption. In this way, we identify efficiency potential, evaluate and leverage it, and realize cost savings. In 2023, for example, we were able to save not only energy but also emissions through the following measures:

Washing of the axial air compressor

The combustion air (ambient air) drawn in by gas turbines contains impurities that can be deposited on the surface of the air compressor. The associated changes to the blade surfaces, such as roughness, lead to a reduction in the air flow rate and the efficiency of the air compressor. This in turn has a negative effect on the shaft power and the efficiency of the gas turbine. Due to the increase in efficiency after washing, an exemplary plant can reach energy savings of approx. 500,000 kWh.

Installation of air-to-water heat pumps at the Bunde compressor station

The electrical frequency converter rooms of the compressors are used on many of our compressor stations currently heated with conventional three kW electric heaters.



With a total of four heaters, each with three kW, up to 288 kWh of electrical power is required per day. This corresponds to the consumption of two to three single-family homes.



As part of ideas management, employees at the Bunde compressor station an improvement proposal was made to replace these undersized electric heating systems with energy-efficient air-to-water heat pumps.

This proposal was unanimously accepted by the ideas management committee, meaning that heat pumps are now to be successively installed in all FU rooms in compressor stations that are currently still operated with electric heaters. This will save 9,371 kWh of energy per year. This corresponds to a CO<sub>2</sub> equivalent of four tons.

#### Concept for low-emission heat supply

As part of energy management, a concept study on low-emission heat supply of our stations is being carried out. At present, the heat for gas preheating and heating the buildings is mainly generated using natural gas. The aim of the study is to create a basis for investment decisions. This includes, for example, which stations are prioritized, which technologies with renewable energies/energy efficiency are suitable for the stations and what the different variants cost.

#### Reduction of power consumption through pressure reduction

At one of our largest feed-in points, we were able to significantly change the power supply at two stations in a test using pressure and volume control. This results in potential electricity savings of around 8.6 GWh per year. We are looking into implementing this measure as early as 2024, which would enable us to reduce the purchase of fossil-fuel-generated electricity in particular and thus also our Scope 2 emissions.

#### Technical optimization of network operation

During repair or maintenance work, large volumes of gas are extracted from the transport pipelines and pumped into other pipe sections as a standard measure instead of being blown out into the atmosphere.

In 2023, a total of 1,310,863 cubic meters of natural gas were pumped over and reused in various operational measures. This corresponds to a CO<sub>2</sub> equivalent of 23,800 tons.



To further reduce our methane emissions, we have also been using a lower gas volume for maintenance work since 2022, for example during maintenance work at our stations, mobile pumping compressors are used. The majority of the stations already have the technical equipment to avoid methane emissions during maintenance and repair work.

Since 2022, if pumping over is not possible during maintenance and servicing, GASCADE uses a mobile flare so that CO<sub>2</sub>, which is less harmful to the environment, is emitted instead of methane. GASCADE also uses two infrared cameras to detect methane. With the help of these cameras, we can flexibly and independently monitor our systems for methane emissions and leaks.

#### **Optimization of exhaust emissions**

Environmental compatibility and the avoidance of emissions play a key role in decision-making processes and the construction of new plants. For this reason, we rely on hermetically sealed electric compressors when building new compressor stations or expanding existing ones, such as Reckrod 2.

#### **Reduction of process-related methane emissions**

Our aim is to permanently eliminate the sealing gas gasket as a source of emissions. With this in mind, avoidance concepts are being developed for these process-related methane sources. In the course of developing the concept, technical alternatives were examined and compared. The most ecologically effective solution is the recompression of direct emissions. Following the commissioning of a first prototype in 2023, this concept will also be applied to other compressor stations.

At the same time, we are working on minimizing methane emissions as part of our gas quality analysis.



#### 4.4 Environmental Protection, Ecology, and Biodiversity

##### Compensation and replacement measures for the construction of new compressor stations

Based on the current Gas Network Development Plan (NDP 2020-2030) and due to changing requirements for our infrastructure, GASCADE is currently planning the construction of two additional compressor stations in Hesse and Lower Saxony. One was approved in 2023 so that construction could begin. The approval process for the second was started in 2023. In the district of Fulda in Hesse, GASCADE is cur-

rently expanding the Reckrod compressor station with four electric compressor units with a total drive power of approx. 64 MW, including the associated auxiliary equipment. The „Reckrod 2 compressor station“ will be built largely on land previously used for agriculture, directly to the south of the existing plant.

In the district of Diepholz in Lower Saxony, GASCADE is planning to expand the existing Rehden compressor station immediately to the north by adding three electric compressor units. The „Rehden 2 compressor station“ is to be built here.

The construction of the two compressor stations will

interfere with nature and the landscape. In advance, the planned impact is assessed on the basis of the Federal Nature Conservation Act and balanced with the planned compensatory and replacement measures. Through protection and avoidance measures before and during construction we ensure that animals, plants, and biotopes are affected as little as possible. Unavoidable adverse effects are compensated for as far as possible by compensatory and replacement measures. One example of compensatory measures is the greening of the outside of the stations with a hedge of native shrubs.



### **Replacement measures for the Reckrod 2 compressor station**

For the construction of the Reckrod 2 compressor station, GASCADE took up intensively used farmland. Part of the station area is fully or partially sealed by buildings, paths, parking areas, etc. In order to compensate for the biotopes and soil affected, around eight hectares of intensive grassland and arable land in the district of Fulda will be converted into extensively used meadows.

Extensive meadow use is characterized by the ab-

sence of fertilizers and pesticides. The meadows are only mowed once or twice a year and the cuttings must be cleared away. In addition to the aforementioned conditions of use, a late first mowing date ensures that many plant species can flower and ripen their seeds. In addition, breeding clutches are protected so that the young of native meadow breeders can fledge before the first mowing.

Extensively used grasslands are among the most species-rich habitats in the agricultural landscape. They are habitats for numerous plant and ani-

mal species, e.g. for many species of flowers and grasses, some of which are rare, for grasshoppers and butterflies, for birds and mammals. Extensive meadows are used as breeding habitats by the following bird species, for example: Yellowhammer, yellow wagtail, meadow pipit, whinchat, partridge, and quail. Red kite and black stork find food here. The landscape is also enriched by flower-rich meadows. The measures thus make a significant contribution to the preservation of biodiversity.

### **Replacement measures for the compressor station Rehden 2**

GASCADE will also use intensively used agricultural land for the construction of the Rehden 2 compressor station. In this case, GASCADE uses an eco-account to compensate for the impact on nature and the landscape. As part of an eco-account, nature conservation and landscape management measures are brought forward by an area owner, for example, at their expense - i.e. without being allocated to a project - and implemented. The responsible nature conservation authority confirms the ecological enhancement through the eco-account measure and the number of value units generated (so-called eco-points).

For the „Hof Hahnenberg“ eco-account in the district of Diepholz, the landowners have established extensively used grassland meadows with damp and wet grassland on moor and mineral soils. As part of the eco-account measures, terrain depres-



sions were also created as temporarily dry meadow ponds and embankments were built to reduce surface water runoff.

#### 4.5 Water and Waste Management

Due to our core business of energy transportation, our transport companies generate unavoidable waste. This is collected by local waste disposal companies. Paper, plastic, and metal waste is recycled, and residual waste is thermally recovered. Wood waste is further processed by the recycler.

As part of our statutory and internal reporting obligations, we collect and evaluate the necessary data on waste disposal. Since 2015, GASCADE has prepared an annual waste balance sheet for waste such as wood, residual waste, paper, packaging, hazardous waste, and special waste.

In 2023, GASCADE and NGT generated a total of around 486 tons of waste (including 414 tons of hazardous waste), which was disposed of professionally and partially recycled according to its properties. Wastewater at our sites is disposed of in accordance with local regulations. The volume of wastewater amounted to 7,327 cubic meters in the reporting year.

#### 4.6 Mobility

Mobility is necessary for our day-to-day work, but it is also associated with emissions. We are therefore working on a future-proof and sustainable mobility concept for our transport companies.

The trend in the use of the job ticket for local public transport is very pleasing. With the introduction of the Deutschlandticket, the number of users among our employees increased from 25 in 2022 to over 80 in 2023. This is partly due to the attractiveness of the ticket, which can be used throughout Germany, but also to the additional financial promotion by our transport companies. In any case, the newly introduced ticket has incentivized some employees to use public transport more often to get to work.

For some time now, we have been offering all employees an employer subsidy for the purchase of leased bicycles, which many employees have already opted for. More than 200 bicycles were purchased for our employees in 2017.

The option of mobile working, which has been anchored in a company agreement at our transport companies, also helps to reduce commuting emissions.

In 2023, we again tried to reduce all emissions caused by the mobility of our employees. In order to determine the emissions caused by work-related commuting, we conducted a company-wide mobility survey in 2022 to obtain reliable results. We will continue to rely on the results of this survey for 2023.

Further emissions are caused by the use of motor vehicles, trains, and airplanes for business trips. To calculate the emissions from business trips, we used the passenger kilometers traveled per means

of transport and the emission factors of the Department for Environment, Food and Rural Affairs (DEFRA).





The table adjacent provides an overview of our traf-  
fic-related emissions.

In the 2023 reporting year, we were able to reduce  
our emissions from the mobility sector by an aston-  
ishing 28% compared to the previous year. This is  
primarily due to a significant reduction in the use of  
cars for business trips. Emissions from commuting  
increased slightly. This was to be expected, as the  
lifting of coronavirus-related contact restrictions  
has led to an increase in presence at the place of  
work. At the same time, however, significantly more  
employees used public transport, which is why the  
increase is moderate.

Emissions		in t CO <sub>2</sub> e	
Business trip	2022	2023	
Car	1142	672	
Train	6	16	
Plane	41	36	
Rental Car	15	20	
Commuting	2022	2023	
Car	276	298	
Train	6	8	
Public Transport	5	16	
Total	1491	1066	



## 5 PEOPLE

With a team of around 530 employees, GASCADE has realized some of the largest pipeline projects in Germany. We benefit from 30 years of experience in pipeline construction and gas transportation, as well as the innovative spirit and commitment of our employees. We have employees with diverse backgrounds working on interdisciplinary projects that are highly relevant to safe gas transportation and enabling the energy transition.

### 5.1 Occupational Safety and Accident Statistics

As a certified transmission system operator and responsible employer, we place the highest priority on health, safety, and environmental protection. They are the basis of our actions and always take precedence over economic concerns. This applies to both companies and each individual employee. Our HSE awareness is the result of many years of experience in the construction and operation of transmission grids as well as regular reviews in the form of analyses, audits, and our own company suggestion scheme.

We take our social responsibility towards our environment and the public seriously and demand the same from our business partners and service providers. Safe and health-promoting workplaces

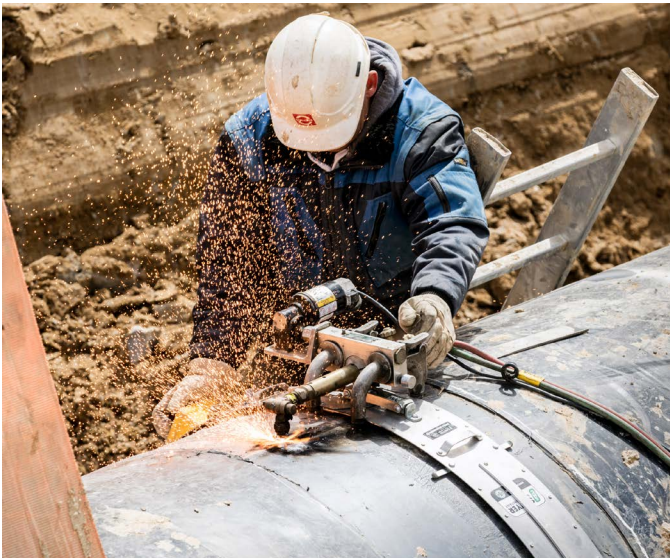
are the focus for our employees and business partners or service providers.

We are very pleased that our accident statistics will remain at a consistently low level in 2023. This is particularly noteworthy since working hours have increased significantly, especially for contractors, and many of these additional working hours have taken place in the offshore sector, where a slightly higher risk of occupational accidents can be assumed.

HSE guidelines and employee training on occupational safety

In order to ensure a high level of occupational safety for all our employees, we have implemented various guidelines that are tailored to the specific requirements of our employees’ day-to-day work. We have our own installation manual covering all safety standards for our employees on construction sites. Our service providers are subject to the strict requirements of our HSE contractor guidelines. This becomes a binding part of the contract when an order is awarded, in addition to regular HSE pre-qualifications. The HSE guideline is placed above all HSE manuals, which are part of the HSE management system. The manuals are aimed at different units and areas of activity with clear „des-

ignations“. Topic-specific instructions are regularly provided in risk assessments and operating and work instructions, which are fully documented. The training plans for all employees are set out in individual manuals.



Accident Statistics 2023 (per: 31.12.2023)

	Own employees	Contractors	Over all
FAT (fatality)	0	0	0
LTI (lost time incident)	1	1	2
RWC (restricted work day case)	0	0	0
MTC (medical treatment case)	0	1	1
Working Hours	943,236	880,983	1,824,219
LTIF rolling average (lost time injury frequency; last 12 months; and 1,000,000 working hours)	1.06	1.14	1.10

Numbers partially rounded

Accident Statistics 2022 (per: 31.12.2022)

	Own employees	Contractors	Over all
FAT (fatality)	0	0	0
LTI (lost time incident)	1	1	2
RWC (restricted work day case)	0	0	0
MTC (medical treatment case)	0	1	1
Working Hours	910,362	313,181	1,223,543
LTIF rolling average (lost time injury frequency; last 12 months; and 1,000,000 working hours)	1.10	3.19	1.63

Numbers partially rounded



5.2 Employment Relationships

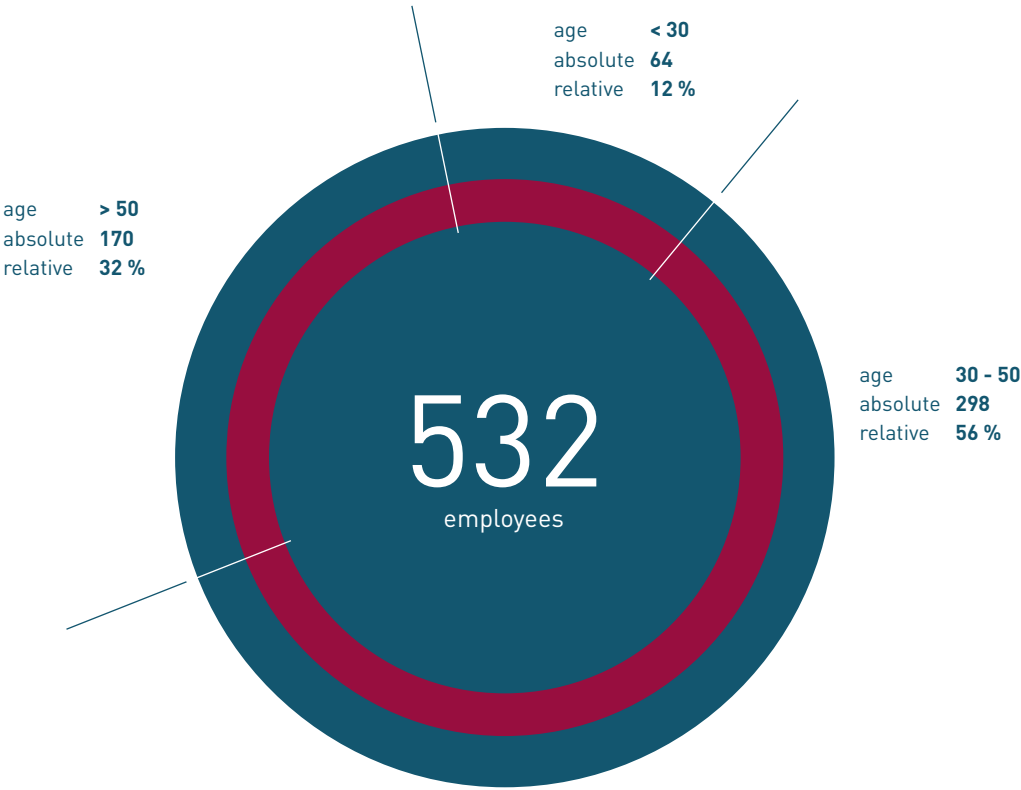
GRI 2-7, 2-8

532 employees

Compared to the previous year, the number of employees has risen by almost seven percent. This growth is necessary in order to meet the future challenges of our business.

Employment relationships

Employees at GASCADE have a secure and long-term future. 89% of the 532 employees are employed on a permanent basis, the majority (81%) full-time. Both the proportion of permanent employees and the ratio of full-time to part-time employees are at a very constant level compared to the previous year. Significantly more women work part-time than men. We determine the number of our employees as of December 31 of each year. In 2023, GASCADE also employed six temporary workers (all male). In all cases, they worked for us for the intended period of employment, which is why there was no fluctuation in temporary employees.



**Age structure**

The age structure of our employees shows a balanced mix and has changed only slightly compared to the previous year in 2023.

**Sickness rate and employees with disabilities**

The sickness rate in the reporting year was just under four percent, slightly lower than in the previous year. Around three percent of our employees have a disability.

**New hires and employee turnover**

In the 2023 reporting year, 14 employees left and 46 new employees joined our team (not including working students).

Measured against the total number of employees, the fluctuation rate is 1.95%. This means that we were able to reduce our already very low fluctuation rate by another percentage point compared to the previous year.

	Entry	Exit
Permanent Staff	38	12
Temporary Employees	8	2
Working Students	17	17
<b>Fluctuation Rate</b>	<b>1.95%</b> (previous year)	

**5.3 Worker Participation**

**GRI 2-30**

Both our companies are committed to freedom of association, collective bargaining, and the protection of our employees’ representatives. Particular importance is attached to a trusting and continuous cooperation with all company co-determination bodies.

**Our works council**

Our transport companies have a Works Council at the Kassel site with nine members, a Works Council in the East and West operating areas with five members each and a General Works Council. The latter consists of six members who are delegated from the three works council committees.

The Works Council is responsible for representing both tariff and non-tariff employees.

A new works council is elected every four years. The elected body in turn chooses from its rows to elect the Chairperson and the Deputy Chairperson. The last election took place in 2022.

The Works Council has concluded numerous company agreements with the employer on the adjacent topics:

- Arrangements for a retirement plan (pension fund)
- Working time regulations
- Remuneration
- Appraisal interviews
- Representative body for severely disabled persons
- Work-life balance



These company agreements can be viewed by all employees on the intranet.

At the Kassel site, there is also a representative body for severely disabled employees, which participates in the meetings of the Works Council and General Works Council and has its own agenda item at all meetings. The representative body for severely disabled employees advises employees on applications from severely disabled persons and equivalent persons as well as in the design of workplaces suitable for the disabled and participates in the meetings of the Occupational Health and Safety Committee.

However, the works council is not the only form of actively organized co-determination at our company. We also conduct regular surveys of our employees, successfully operate an ideas management system, and are covered by a collective agreement of the industrial trade union Mining, Chemical and Energy Industrial Union (IG BCE).

We have agreed our own collective wage agreement with IG BCE. The currently valid collective agreement applies until December 31, 2024, and is renegotiated together with the collective bargaining commission. In addition to the employer representative (Head of Human Resources) and the IG BCE bargaining secretary, the members of the bargaining committee include a total of six employee representatives.

The contents negotiated in our general collective agreement and in the other collective agreements

within our scope of application apply without exception to all our tariff and non-tariff employees.

### Idea management

In April 2023, a new ideas management system was rolled out across the company and has since been very popular. Over 260 employees were active on the new online platform in the reporting year. Whether as interested readers, commentators or as submit- ters or authors themselves. The positive response is also reflected in the figures. While an average of 25-30 suggestions for improvement were submitted per year in the years up to 2022, this figure rose to 51 in the reporting year.

A total of 50 different authors became active in the new network and were able to leverage added value for performance and corporate culture through meaningful and creative suggestions. The implementation rate in 2023 was 16%. The aim is to increase this even further by streamlining processes and decision-making channels and accelerating implementation.

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**2023**

**51 suggestions for improvement**

**50 authors**

**16 % conversion rate**

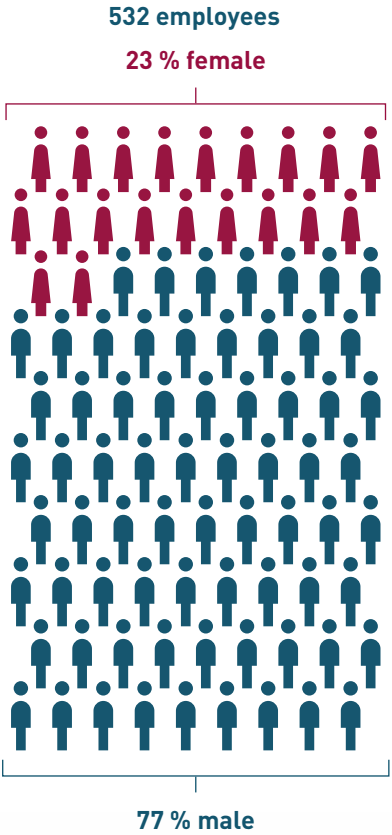
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5.4 Diversity and Equal Opportunities

Our employees come from different countries of origin and bring with them a rich experience and various professional specializations. Experienced employees and those just starting their careers complement each other, work together on exciting projects, and contribute to the success of our projects and the achievement of our goals by sharing knowledge.

We live respect, openness, and tolerance and are convinced that diversity promotes a wealth of ideas and strengthens our innovative power. Equal opportunities for all our employees are a matter of course for us. We currently employ people from 19 different nations.



In total, 5.5 percent of our employees have a nationality other than German. Women are under-represented among our employees with a share of 23 percent. The same applies to the proportion of female managers, which currently stands at nine percent. We are aware that we are trying to attract more women to the jobs at our transport companies and want to get more women into management positions.



**Women@GASCADE**

GASCADE is currently undergoing a phase of change and we are working hard to ensure that we successfully face the challenges of the future as a company. Such times of upheaval offer the opportunity to question established structures and working methods in order to successfully master the future as a company. We want to continue to be an attractive employer for all genders. In light of the current

shortage of skilled workers, this principle is more important than ever. Genuine equal opportunities, responsibility, and participation of our employees are particularly important to us.

In order to achieve this, recognizing and promoting different skills and talents as well as appreciating and dealing with this diversity are crucial, not only for reasons of equal opportunities and participation, but also for economic considerations.

A large group of committed female employees at Women@GASCADE, the newly founded women's network, have made it their mission to exploit this potential.

The considerations and plans to establish our own network date back to the summer of 2023 and the first digital exchanges took place with more than 60 employees.



In December 2023, a workshop was held under professional guidance in which interested women from different departments and hierarchical levels jointly identified areas for action and developed measures to promote diversity. The newly founded Women@GASCADE network aims to address these issues. One aim is to empower women at GASCADE and support them in their professional development. Through targeted measures, Women@GASCADE aims to not only that women become more present at various hierarchical levels, but also, for example, that more women choose GASCADE as an employer. The network is convinced that networking and a lively exchange benefit all employees, regardless of gender, age or cultural background.

	Woman	Men	Total	Woman	Men
Management Board / Head of Department	0	3	3	0 %	100 %
Department Management	2	16	18	11 %	89 %
Team Leader	2	20	22	9 %	91 %
Total	4	39	43	9 %	91 %



### 5.5 Reconciling Family and Career

As a modern employer, we know that an essential prerequisite for good performance is a good work-life balance.

We support our employees during parental leave with flexible working time models and when returning to work. In 2023, a total of 26 employees completed their statutory parental leave, of which

17 were men and nine women. This figure confirms that the parental leave model is an established and lived practice at our company and that many male employees also take advantage of the parental leave offer in the interests of equality. In the previous year, there were 25 employees on parental leave (14 men and eleven women). The statutory entitlement to parental leave exists as long as the child has not yet reached the age of eight. In 2023, this included a total of 58 employees (42 men, 16 women). This means that just under 45% of those entitled in the reporting year opted for parental leave.

In addition, working hours can be arranged according to individual life situations in order to look after children or relatives in need of care. In addition, our employees receive a financial allowance for child-

care. In 2023, every employee was able to apply for a childcare allowance of 300 euros per month per child in a childcare facility to cover the actual costs incurred.

For employees who would like to take a career break, we offer the option of a sabbatical year. In this case, the time off entitlement for the sabbatical phase is taken in advance during a working period built up.

Mobile working and teleworking are valuable organizational models that also make it easier to balance work and private life.





### 5.6 Training and Further Education

As a medium-sized company, we benefit from the advantages of flat hierarchies. The freedom to help shape the company and to be creative and work together constructively are key prerequisites for us to be successful together in the future. It is important to us that all employees can contribute their professional and personal strengths, but also develop and expand them. Our holistic personnel development is the prerequisite for this.

Every year, all employees are offered the opportunity

to complete further training in the form of seminars or training courses. In 2023, 274 employees took advantage of this offer, 86.1% of whom were male and 13.9% female. Even though our workforce already has a higher proportion of men, it is striking that the further training opportunities are once again used significantly less by women. We want to take countermeasures at this point and try to motivate our entire workforce to take advantage of the opportunity for further training and the available opportunities. In 2023, the trained employees spent an

average of 11.02 hours on this.

We don't just focus on further training through seminars or development in your own area of responsibility. Anyone wishing to expand their specialist knowledge or acquire new knowledge can benefit from two personnel development measures that are rather atypical for medium-sized companies. We offer our employees the opportunity to complete internal internships of up to four weeks in other departments. This gives them an insight into day-to-day business and strengthens interdisciplinary collaboration. In



2023, ten employees took up this opportunity. This is a pleasing development, as it represents a significant increase on the previous year (3 in 2022). It shows that our employees are still happy to take advantage of this measure.

Another way to expand your own specialist knowledge is to transfer to another unit for a limited period of time. This gives employees in-depth insights into a different area of work and tasks over a longer period of time, but with a guaranteed option to return to their previous position. Three employees opted for this development opportunity in 2023.

Some employees are also seconded to our European industry association „European Network of Transmission System Operators for Gas“ (ENTSO-G) in Brussels. This enables these employees to gain in-

ternational experience and contribute their valuable expertise to the development of the European gas market. We also employ more than 30 work students at GASCADE. We want to get potential employees interested in our business as early as possible and at the same time give young people the opportunity to gain important insights into professional practice.

## 5.7 Health and Retirement Care

### Health management

Occupational health management is an integral part of HR work and occupational safety at GASCADE. It aims to provide a holistic and sustainable concept for the promotion, planning, and implementation of health aspects. Our transport companies also have a health management working group made up of employer and employee representatives. They work together on topics relating to the health of our employees. Since 2015, we have been running annual health campaigns with a changing focus and giving employees the opportunity to take a closer look at their health throughout the year through specialist presentations, workshops, and campaigns. In recent years, the main topics have included heart health, Nutrition, allergies, skin health, ergonomics, thrombosis, and mental stress. In 2023, the focus was on mental health. One in four Germans already suffers from depression at some point in their lives, and the trend is rising.



This year, we therefore wanted to raise awareness of the fact that mental health should no longer be a taboo subject, and gave an insight into the topics through presentations and activities:

- Mental health
- Offers of assistance
- Stress management
- Activities & social contacts
- Addiction prevention

These topics were also accompanied by the „Prevention and Support“ working group, which was able to present its work and offers of assistance to all employees.

### Company sport

We offer a variety of different sports to promote the interdisciplinary team spirit, collegiality among all employees, rapid integration of new employees, and physical activity as a balance to everyday working life. With 13 company sports groups ranging from yoga and back training to soccer and ice hockey, we have a diverse range of activities. We are also exploring new concepts for company fitness throughout Germany, from which our employees at external sites can also benefit more.

### Retirement provision

In Germany, state pension provision is primarily financed via a pay-as-you-go system by employees subject to social insurance contributions. In response to demographic change and a further increase in life expectancy, the pension level has been reduced. At the same time, the German government is calling for supplementary private provision. Our employees can take up the offer of a pension fund in order to save up additional entitlements for old age as part of a company pension scheme. Our two companies encourage this. We also support all employees in the event of serious and protracted illness by paying sick pay supplements based on length of service. We also offer participation in a share program, which can be a further building block in our employees' wealth creation.





## 5.8 Social and Local Commitment

### Volunteering at GASCADE

Many of our employees are already privately involved in social and voluntary projects. In addition, many social projects are supported through donations. In order to further promote the willingness to do good among our employees and at the same time fulfill our social and local responsibility as a company, we have set up a corresponding project. With "Freiwillig bei GASCADE" (Volunteering at GASCADE), we are taking the next step towards becoming a socially sustainable company. We now enable our employees to spend one working day a year getting involved in a selected social or en-

vironmental project. GASCADE is responsible for selecting the projects and organizing the dates. Employees can use an online booking portal to conveniently choose the date that suits them best.

We have chosen the Kasseler Tafel as our cooperation partner for the launch. As food prices have risen sharply in recent years, more and more people no longer have enough money to provide for themselves and their families. The Kasseler Tafel provides food to these needy people in the region. Helping hands are needed every day to sort, repack, and distribute the large quantities of food provided. This job does not require a great deal of training, which is why it is ideally suited to the short-term

commitment of an individual employee.

After just a few weeks, we can already say that the project has got off to a successful start! A total of 25 employees have already joined our project in the first quarter of 2024, including our managing directors and department heads. The feedback has been consistently positive. The employees come back strengthened and with the positive feeling of having done something good.

We believe that this also increases the overall life satisfaction of our employees. Perhaps an employee's participation in Volunteering at GASCADE will also result in further social commitment.



We now need to consolidate this initial success and motivate our employees to participate in the project on an ongoing basis.

### **Donations and sponsoring**

In 2023, our transport companies made donations to charitable causes and non-profit organizations amounting to a total of EUR 40,930. We were therefore pleased to be able to increase our donations by over 25 percent compared to the previous year. The largest single measure, at around 13,000 euros, was once again the Kassel Mini Marathon.

As in previous years, GASCADE 2023 once again enabled many children and young people to take part in the mini-marathon in Kassel. The entry fee for 1,100 starting places was paid for and thus once again supported around a third of the pupils taking part. Without GASCADE, it would not have been possible for many children to take part in the run. The other individual measures are spread across Germany and include projects by environmental and educational institutions, fire departments, and cultural associations.

At our annual Christmas donation organized by the Works Council, our employees donated a total of 6,000 euros. This year, half of the money collected was donated to the Soziale Hilfe Panama association and half to the Jewish community in Kassel. The Soziale Hilfe association looks after people in need who often have no fixed abode or live in precarious circumstances or who are simply poor and lonely.

They all come to the Panama day care center and take advantage of the wide range of help on offer. In the Jewish community, the money will be used for training courses and materials to educate people about the history of the past and present. Teachers with classes with a strong migrant background in particular would see a need to act and react in the classroom in the face of anti-Semitic comments and in school playgrounds. At the same time, textbooks lack a portrayal of modern Jewish life in Germany. It is therefore important to create low-threshold offers that are inclusive and participation-oriented.

In 2023, there was also another fundraising campaign for war victims in Ukraine. Once again, our employees were very generous, raising a considerable sum of 10,000 euros, half of which was donated to the UNICEF Children's Fund and half to „Aktion Deutschland hilft“.



## 6 GOVERNANCE



### 6.1 Sustainability Management

GRI 2-13

The regular review and analysis of material topics, identification, and management of sustainability measures, compliance with reporting obligations, and publication of an annual sustainability report are managed centrally by the Hydrogen and Sustainability department. Two employees deal exclusively with sustainability issues. Many other employees from other departments contribute to the success of our „twenty thirty!“ sustainability program through their involvement in projects and individual measures. This illustrates the importance

attached to environmental, social, and governance (ESG) issues. It is our declared objective to improve in all areas of ESG and to develop new projects. The Hydrogen and Sustainability department is also responsible for analyzing the opportunities and risks associated with climate change.

Our management board is informed about our sustainability activities at regular intervals and is involved in the decision-making process regarding future measures and projects. Targets are addressed by the sustainability management team to our management board and decided by them. The supervisory bodies of the transport companies, as the central management bodies, are informed about all sustainability measures and targets at regular meetings at least every six months. Close coordination with WIGA Transport Beteiligungs-GmbH & Co. KG also takes place in the course of the consolidated reporting.

In order to gradually adapt our sustainability reporting to the requirements of the CSRD, we initiated a process to apply double materiality in 2024. To this end, we conducted a stakeholder survey on material topics and then categorized materiality in expert committees according to the principles of inside-out and outside-in. We would like to structure the upcoming report thematically on this basis. In 2024, we are also working on an IT solution to centralize the database for reporting.

In 2023, GASCADE underwent a sustainability rating by the EcoVadis agency for the first time and was



awarded the bronze medal. GASCADE was among the top 28 percent of companies rated worldwide by EcoVadis last year. The rating shows us that we are already well positioned but that we can still improve in all areas on our way to becoming a holistically sustainable company.



**6.2 Compliance and Business Ethics**

GRI 2-23, 2-24, 2-26, 2-27

Business conduct in accordance with all applicable laws and regulations, the compliance with company regulations as well as ethical and moral principles is subsumed under the term compliance.

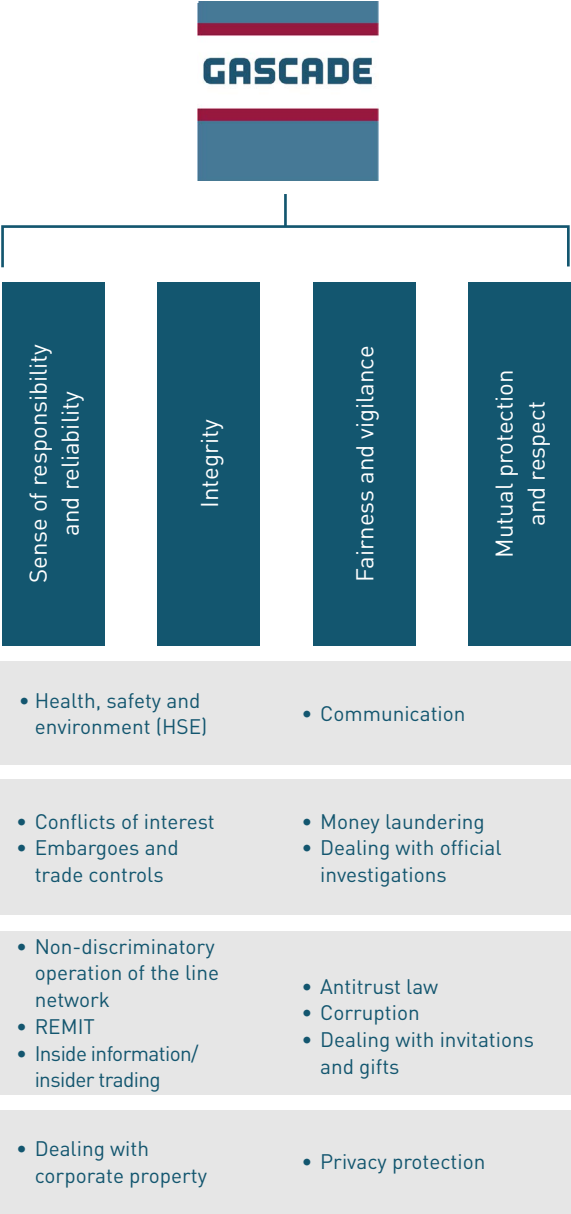
Compliance is an integral part of the sustainable value orientation of our transport companies, which gives us all guidance in our daily work processes. With our compliance management system, we have set up a comprehensive program to ensure that our values are upheld, and our conduct is proper. It supports us in complying with external and internal regulations and protects our companies from damage.

All managers and employees are given mandatory training to help them internalize our Code of Conduct and apply it to their daily work. The training courses, which are mandatory for all employees,

are held within six months of joining the company and are regularly refreshed every three years. The quality and efficiency of our compliance program are monitored and confirmed in regular audits. Compliance audits and the documentation of compliance incidents ensure the greatest possible transparency and support for our team. Our employees from the Legal and Insurance departments provide support in the event of questions and uncertainties. It goes without saying that the application of all our compliance requirements, guidelines, and regulations is also always an important concern for our management board.

We take our social responsibility very seriously and demand the same from our business partners and service providers. Here we rely on our internal Business Partner Compliance Program. Our entire compliance program focuses on both prevention and early detection of potential risks with the aim of quickly limiting or eliminating possible dangers. This includes a well-established and structured data protection management system, which we have integrated into our compliance program.

Our Code of Conduct serves as a fundamental interface between the sustainability values and goals of our companies, our employees, and the desired behavior of third parties. The Code of Conduct is a central building block and supports us in all our business activities when dealing with people, the environment, assets, information, and business partners.



We expect the same standards from our business partners and do not tolerate any kind of direct or indirect corruption or influence peddling.

You can find our code of conduct for suppliers here: [GASCADE Gastransport: Suppliers](#)

Since the end of 2023, we have complied with our legal obligation to set up a whistleblowing hotline. In doing so, we are not only implementing applicable whistleblower protection legislation but also ensuring that we all work in an environment of integrity. The whistleblower system offers the opportunity to report violations within the company anonymously and securely, without the risk of personal consequences. A whistleblower is someone who, by making a report, helps to identify misconduct within the company in good time to put an end to it, and prevent it in the future. We therefore encourage all those working in our company to provide information, even if it later turns out to be unfounded. The solution we have introduced ensures that data protection and anonymity are fully guaranteed. It is not possible to trace tips technically.



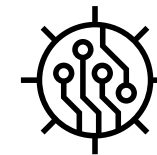
### 6.3 Information Security

Our transmission system operators are part of the so-called critical infrastructures (KRITIS) in Germany in accordance with Section 2 of the Ordinance

on the Determination of Critical Infrastructures under the BSI Act. Our IT security team works hard to protect our network infrastructure from external attacks and at the same time raise employee awareness for the issue. As one of the largest transmission system operators in Germany and Europe, we play a pioneering role in information security across the industry. In the Initiative for Cooperation between Industry and Government for the Protection of Critical Infrastructures in Germany (UP KRITIS), we have been leading the gas industry working group since 2016, monitoring and commenting on upcoming legislative changes and advising and discussing all topics with industry representatives, associations, and authorities.

In 2023, our Security Operations Team checked over 1,300 suspicious emails and attachments. In total, more than 6,000 security events were detected and processed. We put the number of external scans and attempted attacks at around five million, presumably carried out by more than 15,000 attackers. This is a significant increase compared to the previous year. The general IT security situation remains tense and requires us to be as vigilant as possible. As part of our ongoing awareness and phishing campaign, we sent over 3,000 emails to our employees in 2023 with an average detection rate of more than 92%. IT security training was completed by almost 97% of our employees in the same period. We maintain a consistently high level of awareness among our employees. We have also carried

out audits of attack detection systems and technical security audits. IT security is also essential for our supplier management. We therefore carried out 27 audits of relevant processes at our suppliers and service providers in the reporting year.



### 6.4 Digitization

Digitization is one of the central future topics at GASCADE, which was identified in our corporate strategy. A cross-departmental, interdisciplinary team has developed a comprehensive strategy for digital transformation.

#### Procedure

In the internal analysis, the current status, including the strengths and weaknesses of digitization at GASCADE was analyzed. It was determined that a large number of digitalization initiatives already exist today. This was followed by an external analysis of the environment and an assessment of the opportunities and risks of digitalization.

Based on the strengths and weaknesses of the inventory and the opportunities and risks identified, standard strategies were developed in a SWOT analysis.





These standard strategies were translated into specific measures, which are divided into four sub-areas:

#### **New technologies/innovations:**

The aim is to use new technologies sensibly and maximize their benefits.

#### **Processes/data/automation:**

Large volumes of data need to be collected and processed efficiently in order to gain benefits and insights. The focus is also on the continuous automation of processes.

#### **Competence/learning:**

Targeted education and training of skills that are valuable in the company. This applies not only to digital skills, but also to new topics such as hydrogen. Furthermore, an open culture of error shall promote further development.

#### **Culture/Leadership/Organization:**

As an initial measure, a specialist department was appointed as the central point of contact for the topic of digitalization. From now on, this will serve as a central coordination point for measures and ideas.

For the year 2024, GASCADE is focusing on digitalization, among other things. Measures will be implemented or evaluated in the following areas:

- Use of modern sensor technology and analysis of the collected data
- Evaluation of cloud services
- Ongoing automation of supporting processes
- Chatbot
- Knowledge management
- App development

We are confident that this strategy will support us on our path to the digital future. GASCADE remains open to innovation and is committed to sustainable, future-oriented development.



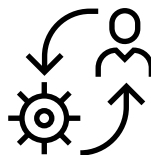
#### **6.5 Sustainable Procurement**

In the area of procurement and along the supply chain, compliance with HSE standards is of the utmost importance as it is in our own operations. Our aim is to procure products and services that not only meet our business requirements but also satisfy social and environmental criteria. To this end, we have introduced guidelines and standards to ensure that our suppliers and partners act responsibly. In addition to a code of conduct for suppliers, we also have

an HSE guideline for contractors, which clearly defines our requirements for the protection of people and the environment.

We actively work to identify and select suppliers who are committed to environmental protection, fair working conditions, and social justice. Transparency plays a crucial role in our efforts towards sustainable procurement. We strive to fully understand our supply chain and monitor the business practices of our contractors with due diligence. To this end, we carry out audits at regular intervals, in particular to ensure compliance with HSE standards at suppliers and contractors.

In 2023, we also conducted an extensive supplier survey. The aim was to find out whether our suppliers have already introduced a sustainability strategy and a sustainability reporting system, and which social and environmental aspects have been considered. In this context, we were also interested in specifically recording the emissions generated in our supply chain. It turned out that some companies have already implemented initial approaches but that it will still take time before sustainability information can be made transparent across the board. We are trying to set a good example in this area in order to encourage our suppliers to be more transparent in this area.



## 6.6 Management Systems

### 6.6.1 Energy Management

Since 2016, we have implemented an energy management system (EnMS), which is operated and continuously improved in accordance with the requirements of DIN EN ISO 50001. Energy management is an integral part of the overarching HSE management system. The aim is to optimize our energy consumption.



### 6.6.2 IT Security

Since the end of 2017, our information security management system (ISMS) has been certified in accordance with the IT security catalog and in accordance with Section 11 (1a) of the Energy Industry Act and ISO/EIC 27001:2022. In 2023, GASCADE was successfully re-certified in accordance with ISO/EIC 27001 and NGT was successfully certified for the first time simultaneously.



### 6.6.3 Quality Management

The development and maintenance of the quality management system is based on the internationally recognized DIN EN ISO 9001 standard and the applicable technical standards and regulations. We monitor this standard in our day-to-day business and through regular internal and external audits. Certification in accordance with DIN EN ISO 9001 is renewed every three years.



### 6.6.4 Environmental Management

GASCADE already successfully operates various certified management systems, which enable us to handle complex cross-divisional management and control tasks. Clear roles, rules, and processes are used to manage issues such as quality, IT security, energy efficiency, knowledge, and occupational safety in a structured manner.

Beyond this, however, further key management issues and challenges are developing as part of our „zwanzig dreißig!“ („twenty thirty!“) sustainability



program and the associated strategic goals:

What impact does our company have on the environment? And how can we measure that impact and improve?

In order to be able to answer these questions specifically and implement them in ongoing monitoring, in 2023, GASCADE has also decided to start setting up and introducing an environmental management system in accordance with DIN EN ISO 14001.

As part of our preparations for DIN 14001 certification, we will first carry out an assessment of the environmental aspects. To mitigate our own impacts and risks, we will then define operational environmental targets and derive measures that we will pursue as part of targeted monitoring. The environmental objectives are derived from an environmental policy that needs to be introduced, the environmental aspects, the legal obligations, the requirements of relevant stakeholders, the environmental analysis, and our strategic corporate objectives and are then specified:

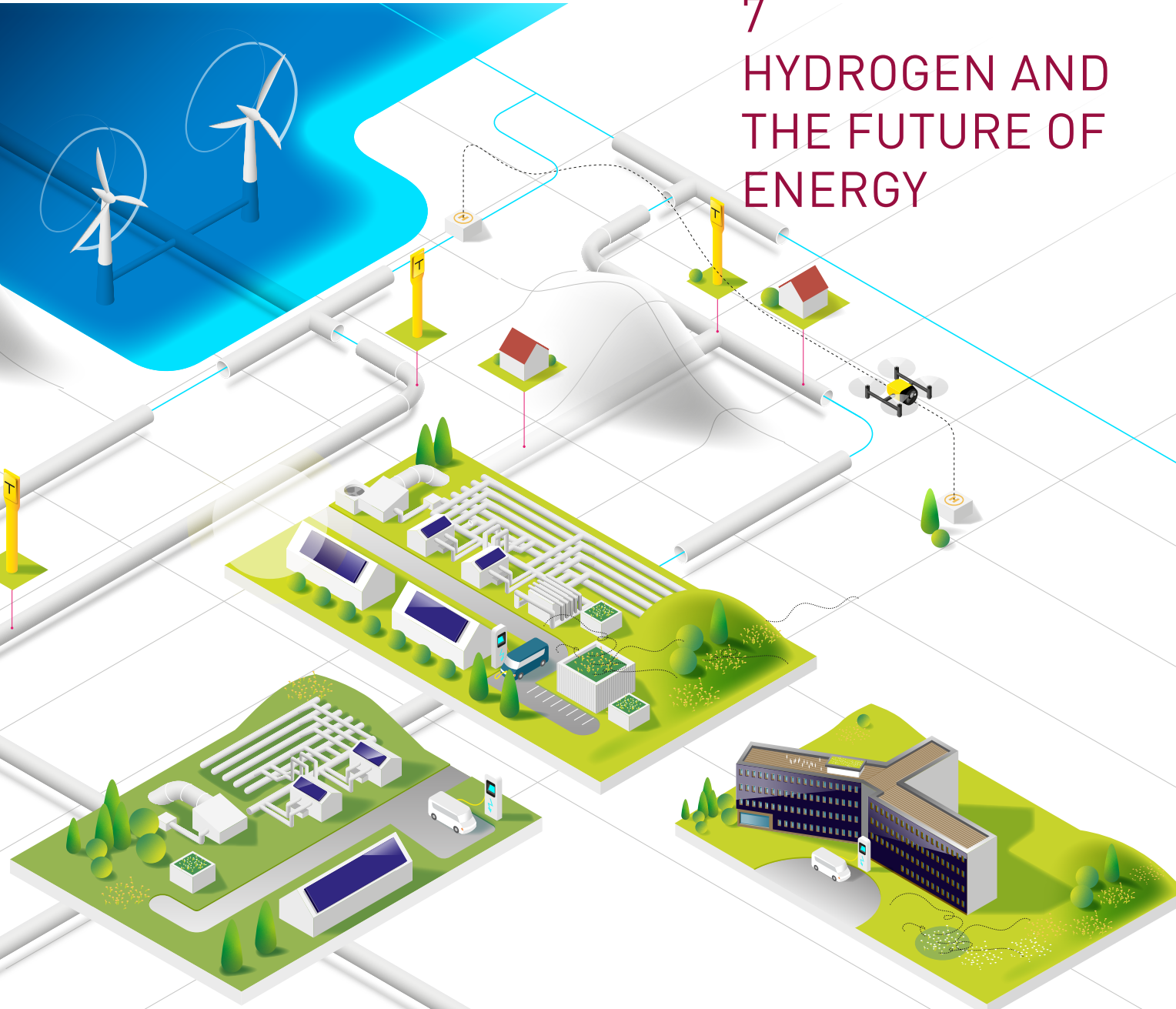
- Certification of our environmental management in accordance with ISO 14001
- Introduce and maintain environmental processes effectively
- Integration of our energy and climate balances into an environmental management system
- Resource conservation and environmental compatibility during the construction and operation of our pipeline network
- Strive for energy efficiency and resource conservation in business activities
- Disposal of waste in accordance with the principles of prevention, reprocessing, reuse, recycling and, proper recovery
- Maintain the safe handling of chemicals and hazardous substances

With the introduction and certification of our environmental management system, we want to ensure that PLAN-DO-CHECK-ACT also applies to our environmental issues in order to pursue them sustainably.

# 7 HYDROGEN AND THE FUTURE OF ENERGY

## 7.1 Hydrogen - Energy Carrier of the Future

Hydrogen will play a key role in achieving energy and climate targets. As a flexible and easily transportable energy source, it has a wide range of applications. In order to reduce greenhouse gas emissions, the energy supply is to be switched from fossil fuels such as natural gas, oil, and coal to renewable energies. Hydrogen is a central component of this project. The areas of application for hydrogen range from steel production and gas-fired power plants to cover peak loads to the mobility sector, where hydrogen can be used as a fuel for heavy-duty transportation, shipping, and aircrafts.





## 7.2 Current Political Developments

The development of the German hydrogen infrastructure is imminent: the amendment to the Energy Industry Act has created the financial cornerstones for the German hydrogen core network, which is to be financed by the private sector. In addition, the legal framework is now in place for the further development of the core network as part of a joint network planning process for the natural gas and hydrogen infrastructure. The 9,700 km core network, which will largely consist of converted natural gas pipelines, is to be confirmed by the Federal Network Agency in 2024.

Germany will cover its high demand for hydrogen not only through its own production, but in particular through imports of hydrogen and its derivatives. The update of the National Hydrogen Strategy and various studies predict an import requirement of over 50%. Pipeline-based transportation from the North Sea and Baltic Sea regions is particularly important in this context. GASCADE is very well represented in this context with its two major hydrogen projects, the AquaDuctus offshore pipeline and the „Flow - making hydrogen happen“ onshore project.

## 7.3 Hydrogen Projects of our Transmission System Operators

### AquaDuctus

As part of the AquaDuctus project, a gigawatt-scale hydrogen pipeline with a transport capacity of 20 GW will be built. The AquaDuctus project consists of an offshore section in the German Exclusive Economic Zone (EEZ) of the North Sea and an onshore section for integration into the downstream onshore hydrogen pipeline network. From 2030, this pipeline will offer open, non-discriminatory grid access to several grid users (producers of green hydrogen from offshore wind turbines) and European and non-European countries bordering the North Sea. The project will connect large quantities of green hydrogen produced in the North Sea to the European mainland and the emerging onshore hydrogen infrastructure. AquaDuctus will form the core of a new offshore infrastructure that can connect Germany with the North Sea countries. In this way, the European production and demand centers for green hydrogen will be interconnected.

The AquaDuctus project partners are relying on a scalable, demand-oriented infrastructure in two sections:

Initially, AquaDuctus will connect the first large hydrogen wind farm site SEN-1 (special energy generation area) with a generation capacity of around one gigawatt. SEN-1 is located in the German EEZ northwest of the island of Helgoland.





The 200-kilometer offshore pipeline will transport the green hydrogen generated from offshore wind power into the Wilhelmshaven area to the German mainland, from there via a 100-kilometer onshore pipeline to Bunde and from there to downstream European consumers.

In the second section, the offshore pipeline is planned to be extended by a further 200 kilometers. AquaDuctus will then extend to the tip of the so-called duckbill in the German EEZ and will thus open up the possibility of connecting further hydrogen wind farm sites and connect with neighboring offshore hydrogen infrastructures from Norway, Denmark, the Netherlands, Belgium or the United Kingdom. This opens the door to pipeline-based offshore hydrogen transportation across Europe. Especially with Norway, intensive negotiations are underway to connect a Norwegian hydrogen pipeline to AquaDuctus. However, Scotland has also already expressed its interest in a pipeline connection in Germany as a high priority.

In 2023, the European Commission granted AquaDuctus the status of a „Project of Common Interest“ (PCI). The project was also designated an „Important Project of Common European Interest“ (IPCEI) by the Federal Ministry for Economic Affairs and Climate Protection and is therefore eligible for funding under the national hydrogen strategy.

#### „Flow – making hydrogen happen“

Together with cooperation partners from all rele-

vant stages of the value chain, GASCADE is pursuing the goal of quickly creating an efficient transport corridor for climate-neutral hydrogen with the „Flow - making hydrogen happen“ project. Existing pipelines are to be gradually converted from natural gas to hydrogen in several stages in order to transport hydrogen from the German Baltic Sea coast to Baden-Württemberg from 2028. The first section to Saxony-Anhalt is scheduled to go into operation at the end of 2025. The project is to be expanded internationally from 2030. A connection with the Baltic Sea Hydrogen Collector (BHC) is planned to link various countries bordering the Baltic Sea in Lubmin, as well as connections to Poland and the Czech Republic. Connections to Austria and France are also to be realized via cooperation partners. The final expansion could result in an international hydrogen system with an hourly output of up to 20 gigawatts. Both the flow route from the Baltic Sea to the Czech Republic and the BHC have been listed as PCIs with the European Commission since the end of 2023. By converting most of the existing infrastructure to hydrogen transportation, GASCADE is laying the foundations for the ramp-up of a climate-neutral hydrogen economy. This is the only way to connect production capacities and imports in northern Europe with hydrogen storage sites along the pipelines and the consumption centers in eastern and southern Germany. The switch from natural gas to hydrogen will enable massive savings in CO<sub>2</sub> emissions in steel and cement industries, other en-





ergy-intensive industries, the mobility sector, and the heating market. The embedding in the European internal hydrogen market increases security of supply and guarantees a market with many producers, traders, and customers at an early stage.

#### **7.4 Green Gas Capability of our Transport Networks**

In practice, we devote ourselves to extensive investigations to check whether our gas infrastructure including all its components is fit for hydrogen transportation. Only if this is the case, can we help to lead Germany towards a climate-neutral hydrogen economy and achieve the German government's decarbonization targets.

##### **Conversion and operation of gas pipelines for hydrogen transportation**

For the conversion of our gas pipelines and for the operation of these with hydrogen, numerous requirements must be met. Some requirements are object-related and concern the technical assets themselves. The relevant requirements are defined in particular in the DVGW regulations and are the subject of the technical reassessment of systems for operational readiness for hydrogen. A reassessment of the technical systems with regard to operational readiness for hydrogen must be carried out where these are not designed for operation with hydrogen from the outset, i.e. in existing systems. The basic prerequisite for the use of hydrogen in

our existing gas pipelines is the technical suitability of the system. In particular, the possible changes caused by hydrogen must be considered separately. Above all, the influence on the pipeline material requires precise testing and evaluation and forms the basis for the conversion of a gas pipeline to the transportation of hydrogen in accordance with the DVGW regulations (including DVGW-G-409 (M), DVGW-G-405 (M), DVGW-G-464(M)). According to the specifications of the underlying DVGW regulations, a conversion of a gas pipeline to the transportation of hydrogen is a significant change. In order to verify that the conversion of piping systems complies with the regulations, we involve experts in our ongoing inspections, who in turn certify the evidence required by the authorities.

As part of numerous DVGW research projects, further findings on the suitability of assemblies and products for operation with hydrogen, for example, are constantly being developed, incorporated into the regulations and used for the conversion of gas infrastructures. As a result of extensive material tests of steel materials from a representative cross-section of installed pipelines (DVGW research project SyWeSt H2 and own research projects), the suitability of the steel materials for hydrogen could be proven. The required fracture toughness - the resistance of a material to uncontrolled crack propagation - of our pipeline steels corresponds to our expectation of decades of safe availability of the pipelines for hydrogen transportation.



Another prerequisite for the conversion of existing gas infrastructures to the transportation of hydrogen is that the suitability of existing fittings for hydrogen as an energy source can be proven. Fittings form an important link in the gas transport system and are complex components whose H2 compatibility must be ensured both for the materials and in terms of functionality and tightness. With extensive theoretical and practical investigations as part of the DVGW Hydrogen Innovation Program created qualified foundations for the expansion of the DVGW

regulations (DVGW-G-405 (M)) at the end of 2023 - as practical assistance for all network operators. However, the safety-oriented design and guarantee of the intended function of gas pipes and systems alone do not allow them to be operated with hydrogen in accordance with the regulations. There are other practical, organizational, and legal requirements, such as the implementation of operation and maintenance in accordance with DVGW regulations, regulations on organizational safety - technical safety management (TSM), and legal approval

requirements for operation in accordance with the High-Pressure Gas Pipeline Ordinance.

### **TSM certification (H2 Ready)**

The requirements for the qualification and organization of companies for the operation of pipelines and systems for the pipeline-based supply of gas and hydrogen to the general public are described in the relevant DVGW Code of Practice G 1000 as part of technical safety management.

We are one of the first German network operators to be recertified by the German Technical and Scientific Association for Gas and Water (DVGW) with regard to the requirements of G 1000 - now for the operation of systems with gas and hydrogen. This means that we have already created an important prerequisite for being able to act as a gas and hydrogen network operator in 2023 - with added value for our „Flow - making hydrogen happen“ project. The renewed TSM review itself covered topics such as structural and process organization, occupational health and safety and environmental protection, risk and crisis management, planning and construction, as well as gas disposition, and emergency management.

### **Preparation for operation started: First H2 practical training courses**

We are continuously driving forward the transformation from a natural gas to a hydrogen network operator. We want to offer the market substantial



transport capacities for hydrogen in 2025 as part of the „Flow - making hydrogen happen“ project. The conversion of the first pipeline sections of our network is running ahead of this. Our colleagues in technical operations, who will be the first to be affected by the changeover, are already being prepared for this. As part of our „Future Gas Infrastructure Technology (ZGIT)“ project, a training and further education program has been developed that focuses in particular on practical training in handling hydrogen as a medium. We want to enable our operational employees to gain experience with hydrogen at an early stage and in a safe environment compared to natural gas. Learning about and respecting the effects of incidents has practical added value for the company. In 2023, a total of three training courses were held for 30 employees. Further training courses for 60 employees from our plants are planned for 2024.

In addition to the opportunity to acquire specialist knowledge in handling hydrogen in practical training courses, the ZGIT team is working with technical operations to develop a concept for setting up its own hydrogen training facility. In addition to the practice-oriented training courses, further specialist topics are to be addressed in the medium and long term in terms of hydrogen-specific training in accordance with the regulations.

# 8

## GLOBAL REPORTING INITIATIVE (GRI)-INDEX

### Declaration of use

GASCADE Gastransport GmbH has reported in accordance with the GRI Standards for the period 01/01/2023-31/12/2023

Applied GRI 1

GRI 1: Foundation 2021

Applicable GRI Sector Standard

GRI 11: Oil and Gas sector 2021

GRI Standard/ Other source	Specification	Location	Omission			Pages
			Requirement(s) Omission	Reason	Explanation	
GRI 2: General Disclosures 2021	2-1 Organizational details	2.1				p. 6
	2-2 Entities included in the organization's sustainability reporting	2.1				p. 6
	2-3 Reporting period, frequency and contact point	2.1				p. 6
	2-4 Restatements of information	2.1				p. 6
	2-5 External assurance	2.1				p. 6
	2-6 Activities, value chain and other business relationships	2.1				p. 6
	2-7 Employees	5.2				p. 39
	2-8 Workers who are not employees	2.1				p. 39
	2-9 Governance structure and composition	2.2				p. 8

GRI Standard/ Other source	Specification	Location	Omission			Pages
			Requirement(s) Omission	Reason	Explanation	
	2-10 Nomination and selection of the highest governance body	2.2				p. 8
	2-11 Chair of the highest governance body	2.2				p. 8
	2-12 Role of the highest governance body in overseeing the management of impacts	2.2				p. 8
	2-13 Delegation of responsibility for managing impacts	6.1				p. 51
	2-14 Role of the highest governance body in sustainability reporting	2.1				p. 6
	2-15 Conflicts of interest		not specified	Restrictions due to a duty of confidentiality	We treat information on the employment relationships of our control bodies confidentially	
	2-16 Communication of critical concerns		not specified	Restrictions due to a duty of confidentiality	We treat information on the employment relationships of our control bodies confidentially	
	2-17 Collective knowledge of the highest governance body		not specified	Restrictions due to a duty of confidentiality	We treat information on the employment relationships of our control bodies confidentially	

GRI Standard/ Other source	Specification	Location	Omission			Pages
			Requirement(s) Omission	Reason	Explanation	
	2-18 Evaluation of the performance of the highest governance body		not specified	Restrictions due to a duty of confidentiality	We treat information on the performance evaluation of our control bodies confidentially	
	2-19 Remuneration policies		not specified	Restrictions due to a duty of confidentiality	We treat information on the remuneration of our controlling bodies confidentially	
	2-20 Process to determine remuneration		not specified	Restrictions due to a duty of confidentiality	We treat information on the remuneration of our controlling bodies confidentially	
	2-21 Annual total compensation ratio		not specified	Restrictions due to a duty of confidentiality	We treat information on the remuneration of our employees confidentially	
	2-22 Statement on sustainable development strategy	1, 3.6				p. 5, p. 21
	2-23 Policy commitments	6.2				p. 52
	2-24 Embedding policy commitments	6.2				p. 52
	2-25 Processes to remediate negative impacts	2.5				p. 10
	2-26 Mechanisms for seeking advice and raising concerns	6.2				p. 52
	2-27 Compliance with laws and regulations	6.2				p. 52



GRI Standard/ Other source	Specification	Location	Omission			Pages
			Requirement(s) Omission	Reason	Explanation	
	2-28 Membership associations	2.3				p. 9
	2-29 Approach to stakeholder engagement	3.3				p. 15
	2-30 Collective bargaining agreements	5.3				p. 40
Material topics						
GRI 3: Material topics 2021	3-1 Process to determine material topics	3.2				p. 14
	3-2 List of material topics	3.2				p. 14
Material topics (GRI 11: Oil and Gas Sector 2021)						
11.1 GHG emissions						
GRI 3: Material topics 2021	3-3 Management of material topics	3.2				p. 14
GRI 302: Emissions 2016	302-1 Energy consumption within the organization	4.2				p. 29
	302-2 Energy consumption outside the organization		not specified	Information unavailable / incomplete	Information is currently being collected in a project to record Scope 3 emissions. We cannot foresee an exact date for the first publication.	
	302-3 Energy intensity	4.2.1				p. 29

GRI Standard/ Other source	Specification	Location	Omission			Pages
			Requirement(s) Omission	Reason	Explanation	
GRI 305: Emissions 2016	305-1 Direct (Scope 1) GHG emissions	4.1.1				p. 24
	305-2 Energy indirect (Scope 2) GHG emissions	4.1.2				p. 26
	305-3 Other indirect (Scope 3) GHG emissions	4.1.3	explanation on project Scope 3 in 4.1.3	Information unavailable / incomplete	Information is currently being collected in a project to record Scope 3 emissions. We cannot foresee an exact date for the first publication.	
	305-4 GHG emissions Intensity	4.1.3				p. 27
11.2 Climate-related adaptation, resilience and transition to a low-emission economy						
GRI 3: Material topics 2021	3-3 Management of material topics	3.2				p. 14
GRI 201: Economic performance 2016	201-2 Financial implications and other risks and opportunities due to climate change	3.4	incomplete declaration	Information unavailable / incomplete	We do not yet have valid information or estimates of the financial implications. We cannot foresee an exact date for the first publication.	p. 18
GRI 305: Emissions 2016	305-5 Reduction of GHG emissions	3.7				p. 23

Topics from the applicable GRI sector standards that were classified as not material

Topic	Explanation
<b>GRI 11: Oil and gas sector 2021</b>	
11.3 Air emissions	Issue is currently classified as non-significant, as we currently classify the severity of the negative impact as not significant. The severity is to be prioritized less compared to the other issues. However, we will continuously assess the issue and present the most important aspects in our report.
11.4 Biodiversity	Issue is currently classified as non-material, as we currently classify the severity of the negative impacts as not material. The severity level is to be prioritized less compared to the material topics. However, we will continuously assess the topic and present the most important aspects in our report.
11.5 Waste	Issue is classified as non-material as we do not consider the severity of the negative impacts to be significant. The severity level is to be prioritized less compared to the material topics. However, we will continuously assess the topic and present the most important aspects in our report.
11.6 Water and effluents	Issue is classified as non-material as we do not consider the severity of the negative impacts to be significant. The severity level is to be prioritized less compared to the material topics. However, we will continuously assess the topic and present the most important aspects in our report.
11.7 Closure and rehabilitation	We currently consider the probability of a negative impact occurring to be low, which is why we currently classify the issue as non-material. We assume that we will continue to use our infrastructure for the transportation of climate-neutral gases in the future.
11.8 Asset integrity and critical incident management	We currently consider the probability of a negative impact occurring to be low, which is why we currently classify the issue as non-material. However, we will continuously evaluate our management of critical incidents.
11.9 Occupational health and safety	Although the topic is material for our business activities, we do not see any negative effects from our current handling of the topic, which is why we do not consider it to be material.
11.10 Employment practices	The topic is classified as non-material as there is no severity.

Topic	Explanation
11.11 Non-discrimination and equal opportunity	The topic is classified as non-material as there is no severity.
11.12 Forced labor and modern slavery	Not applicable, as not compatible with the regulatory framework in Germany.
11.13 Freedom of association and collective bargaining	The topic is classified as non-material as there is no severity.
11.14 Economic impacts	The topic is classified as non-material as it is not significant. In the definition of GRI 11.14, the economic impact on a local community must be significant, which we do not consider to be the case for our business activities.
11.15 Local communities	The topic is classified as non-material as it is not significant. In the definition of GRI 11.15, the impact on a local community must be significant, which we do not consider to be the case for our business activities.
11.16 Land and resource rights	Not applicable, as not compatible with the regulatory framework in Germany.
11.17 Rights of indigenous peoples	Not applicable, as we operate exclusively in Germany.
11.18 Conflict and security	Non-material topic, as we classify the probability of occurrence in Germany as low.
11.19 Anti-competitive behavior	Non-material topic due to low probability of occurrence, as we are regulated transportation companies.
11.20 Anti-corruption	Non-material topic due to low probability of occurrence, as we are regulated transportation companies.
11.21 Payments to the governments	Non-material topic due to low probability of occurrence, as we are regulated transportation companies.
11.22 Public policy	Non-material topic, as we were unable to identify any materiality of our political influence.



# LIST OF ABBREVIATIONS

EEZ	Exclusive Economic Zone	CH <sub>4</sub>	Methane
BHC	Baltic Sea Hydrogen Collector	CO	Carbon monoxide
BlmSchV	Ordinance on the Implementation of the Federal Immission Control Act	CO <sub>2</sub>	Carbon dioxide
CSRD	Corporate Sustainability Reporting Directive	NO <sub>x</sub>	Nitrogen oxides
DEFRA	Department for Environment, Food and Rural Affairs	GW	gigawatt
DEHSt	German Emissions Trading Authority	GWh	gigawatt hour
DVGW	German Technical and Scientific Association for Gas and Water	ha	hectare
EnMS	Energy management system	kW	kilowatt
ENTSO-G	European Network of Transmission System Operators for Gas	kWh	kilowatt hour
ESG	Environment, Social, Governance	MW	megawatt
ESRS	European Sustainability Reporting Standards	t	tons
GWP	Global warming potential	TWh	terawatt hour
GRI	Global Reporting Initiative	%	percent
HSE	Health, Safety, and Environment		
IG BCE	Mining, Chemical, and Energy Industrial Union		
IMEO	International Methane Emission Observatory		
ISMS	Information Security Management System		
IPCEI	Important Project of Common European Interest		
IT	Information Technology		
PCI	Project of Common Interest		
THG	Greenhouse gas		
TSM	Technical Safety Management		
WGTH	W & G Transport Holding GmbH		
ZGIT	Future Gas Infrastructure Technology		

## DISCLAIMER

This report contains forward-looking statements that are based on current assumptions and information available at the time of preparation. Factors that cannot be foreseen today may have a lasting effect on these forecasts and cause actual developments to deviate from the estimates given here. We therefore accept no responsibility for the accuracy of these statements. GASCADE assumes no obligation to update the forward-looking statements contained in this report beyond the statutory requirements or to adapt them to future events or developments.

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