

Sustainability Charter



Decarbonising the gas
grid as a key enabler for
a climate neutral society

February 2022



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1 — Foreword



Gas Distributors for Sustainability (GD4S) is committed to improving the sustainability of our business operations to ensure a better planet. Our seven member companies are committed in our shared drive towards a reliable, safe, and sustainable future gas network and, as an Association, we are united in contributing to the European objective of carbon neutrality by 2050.

Today, sustainability is at the heart of strategic planning in every industry.

As energy companies, our job is to help satisfy the energy needs of those who live and work in our Member States. We must do this sustainably by organising and managing our energy systems, using processes and technologies inspired by the highest standards of environmental protection, transparency, non-discrimination, and stakeholder involvement. Such actions will support the path towards energy transition and the building of a fairer society, while having a positive impact on the territories in which we operate.

The breadth of this challenge extends beyond the capabilities of individual market operators, it requires awareness and a radical change in the approach to business. Success requires collective ambition with shared purpose and the implementation of specific actions.

In 2021, GD4S published a White Paper: *'Gas grids: a key enabler of decarbonisation'*, containing 26 policy recommendations.

The Paper contributes to the vision of a carbon-neutral economy and contains three main sections:

- The potential of renewable gases
- The strategic role of gas distribution networks
- The commitment of Distribution System Operators (DSOs) to meet shared climate ambition.

In this document, our first Sustainability Charter, GD4S defines its approach to sustainability. The purpose is to focus specifically on our collective sustainability commitments. Signed and endorsed by our seven member companies, this Charter defines our commitments across the three sustainability pillars of Environmental, Social and Governance, all of which are aligned with the United Nations' Sustainable Development Goals (SDGs).

In presenting these commitments we are establishing our sustainability ambition and are proud to share this in our Charter. In defining these commitments, and by monitoring and measuring against scheduled reporting principles for each, we are striving to improve and enhance our sustainability credentials collectively.

As President of GD4S, I encourage you to review our Charter and join us on this sustainability journey. I hope it provides inspiration and, above all, promotes sustainable actions which will serve us all.

Together we are working to decarbonise the energy system, delivering a cleaner energy future for all.

Paolo Gallo

President, GD4S,
Chief Executive Officer, Italgas

2 — Charter Summary



Our commitments focus on three key areas:
Planet, People and Grids.



The nine commitments demonstrate our ambition to embrace all three pillars of the United Nations' Sustainable Development Goals:
Environmental, Social and Governance (ESG).



Each commitment is illustrated by **case studies from the members of GD4S** to highlight some of the work we have undertaken to date.

The roadmap below outlines the milestones which will contribute to the achievement of our long-term commitments. Prioritising certain activities, it reflects the nature of our operations and our role in driving forward the energy transition and sustainability discourse at a European level.

Timeline

2022	→	2022	→	2023	→	2025	→	2031
Publication of the Sustainability Charter		GD4S member companies collaborate to develop first Progress Report		Disclosure of the first Progress Report and new stakeholder dialogue		Second Progress Report and new stakeholder dialogue		Publication of an updated Sustainability Charter

This Sustainability Charter is a key initial step on our collective journey to deliver our sustainability commitments while strengthening our economic performance. It also takes a holistic approach to positioning gas Distribution System Operators (DSOs) as central in facilitating Europe's transition to a competitive, inclusive and sustainable economy.



Our vision is that gas DSOs will be key in Europe's transition to a more sustainable society and economy for all.

3 — Introduction

The energy sector is the biggest contributor to global greenhouse gas emissions. Decarbonising this sector is therefore imperative to reaching a carbon neutral future. This energy transformation will require considerable effort by all to achieve global, EU and national level decarbonisation targets.

Gas Distributors for Sustainability (GD4S) brings together the seven largest gas Distribution System Operators (DSOs) in France (GRDF), Greece (Edathess), Italy (Italgas), Ireland (Gas Networks Ireland), Portugal (Galp Gas Natural Distribuição), Spain (Nedgia) and Romania (Distrigaz Sud Retele) are united in contributing to the European objective of carbon neutrality by 2050.

A decarbonised energy sector can only be achieved with the help of a supportive network. Smart and flexible network integration is key to allowing alternative energy sources to reach customers. We understand that our role as gas Distribution System Operators (DSOs) during this transition is to support the development of such a network, which, in turn, supports the uptake, distribution and storage of alternative and renewable energy sources through a smart energy grid.

In this Sustainability Charter, GD4S members have agreed to shared commitments that contribute to the realisation of the European Green Deal, by 2050, and to the United Nations' Sustainable Development Goals (SDGs). Our collective commitments are divided into material topics on the aspects of Environmental, Social and Governance (ESG). For each category, we outline specific commitments. Best practice examples from our member companies demonstrate what we already have been doing to reach positive impacts. In charting such commitments, we recognise that their implementation may differ among our member companies, given the individual operations and territories of our members.

As we move towards a climate neutral world, renewable and decarbonised gases will be a key component of the distribution system and gas fuel market. Supply to consumers will evolve, with a more decentralised system of producing, storing and injecting gases (including renewable gases) in different parts of the distribution network. As such, gas DSOs will play a key role in reaching climate neutrality.

Finally, the energy transition requires multiple solutions to work in harmony, although these may look different depending on the industry and regional circumstances. This Charter is presented as a set of sustainability commitments and activities to inspire action and demonstrate what can be achieved. **Our objective is to foster positive change and formalise our commitment to achieving a sustainable future for all.**

This Sustainability Charter is a significant milestone for GD4S member companies. In sharing our commitments, we hope to engage proactively with our stakeholders to deliver a sustainable future for all.

4 — Development of the Charter

This Charter utilises the Environmental, Social and Governance (ESG) framework, outlining the positive changes we propose in our organisations and operations.

Each pillar is aligned with the United Nations' Sustainable Development Goals (SDGs) and relevant European policy objectives. The Charter highlights our **shared commitments** to contribute to the energy transition and decarbonisation of the economy, while also fostering a better society in terms of social inclusion and governance practices.

In developing this Charter, our intention is to reflect upon our role in energy transition and focus on the areas where **we can apply the most direct influence**. As Distribution System Operators (DSOs), we are eager to work with the various stakeholders to achieve this. We recognise our responsibility to act and leverage GD4S in a collaborative way to nurture positive change. In creating this Charter, we first had to understand the different levels of sustainability maturity in each member company and to focus on company-specific sustainability pathways.

Depending on geographic and regional market conditions, the gas sector may require different pathways to develop and distribute the various renewable gases (including hydrogen and biomethane). This explains why the integration of different energy sources may vary across GD4S members.

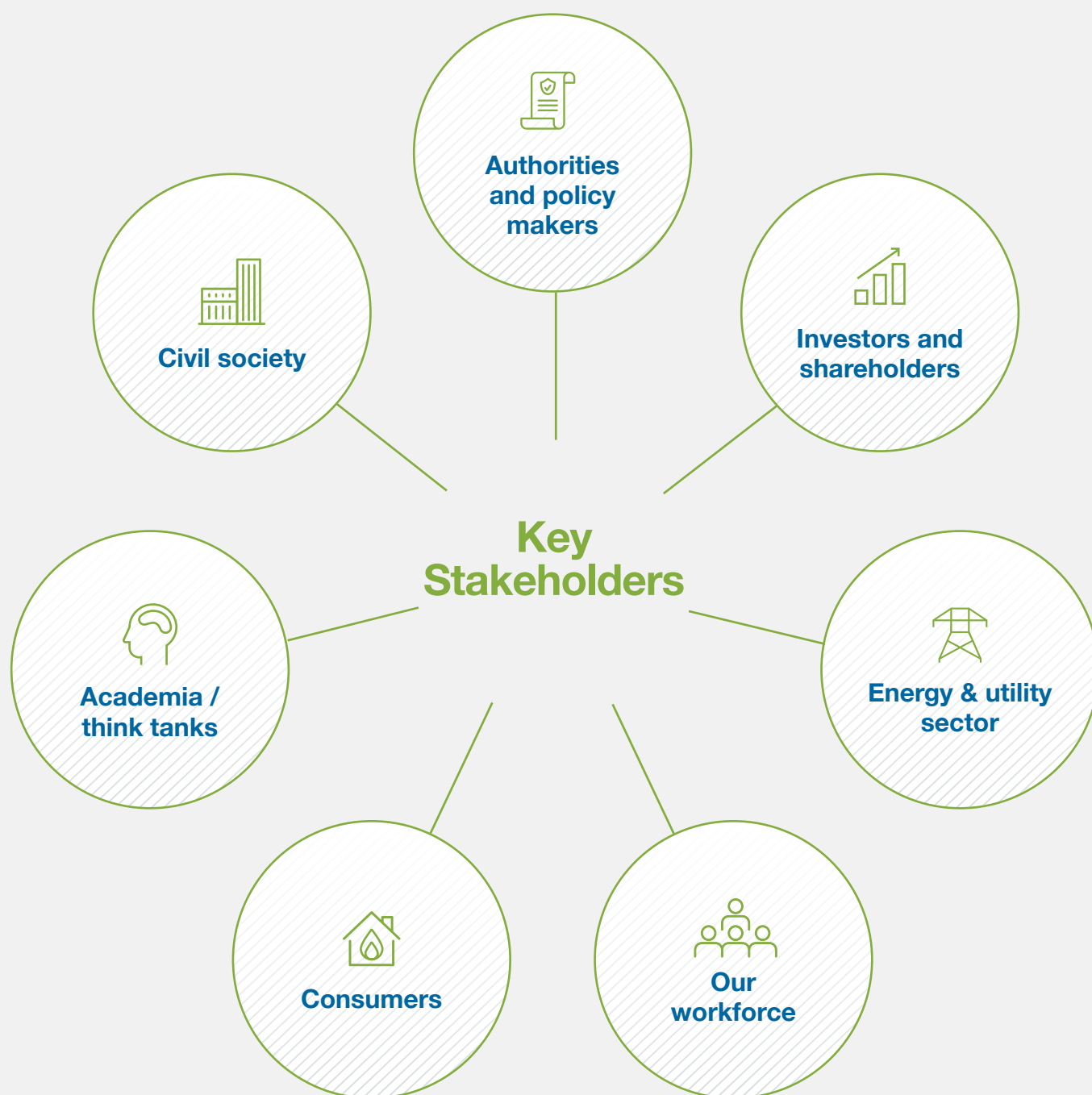
The Charter includes examples of best practice from our members to showcase how these companies are already contributing positively to sustainability. These examples are a useful mechanism to highlight shared learnings and promote future collaboration with key stakeholders.

We are committed to working together to share knowledge, further best practices, improve our networks and decarbonise our operations. We will also capitalise on the existing methodologies used by our member companies in their ESG commitments in designing this Charter.

By working collaboratively to develop this Charter, GD4S member companies have consulted with a wide range of stakeholders to ensure the delivery of a robust set of commitments. We are committed to assessing and reporting to a defined timeline on the progress achieved and we plan to publish our first progress report in 2023. We firmly believe that we will manage our commitments more effectively when we can measure them against performance. Our first milestone after the release of this Charter will be to work together on common metrics and collect data. The quality of the reporting will be decisive to ensure that we further integrate sustainability into our business model. Following this, target setting will be a key performance measure.

This charter has been developed with the support of CSR Europe. In partnership with CSR Europe and during the process of designing this Charter, GD4S facilitated stakeholder dialogue to encourage and nurture open conversation. This initiative brought together a wide range of stakeholders to review and discuss the materiality of our Sustainability Charter and its long-term commitments. Such stakeholder engagement is an integral part of our activities. Through open dialogue, we can better understand and address the material issues of our key stakeholders as we develop our long-term plans for the future.

4 — Development of the Charter



Through stakeholder dialogue, our contribution to material topics in the ESG framework was discussed. We engaged with stakeholders to prioritise and explore what they perceived as material issues. The materiality poll conducted during the event allowed us to analyse and compare the topics that are material for GD4S member companies with those perceived as material by our key stakeholders. Stakeholders were asked to rank the top three commitments, out of a total of nine, that require the strongest collective action from GD4S member companies.

This matrix of results shows the key areas of priority. Results were discussed during the panel session in 2021. The poll showed alignment with member companies on environmental and social visions, but a diverging vision when it comes to governance. Participants emphasised the need to develop further dialogue with stakeholders whereas GD4S members prioritised fair and transparent lobbying.

The table below compares the top 1, 2 and 3 perceived commitments from stakeholders and GD4S member companies.

GD4S members are committed to conducting regular materiality assessments with the objective of highlighting the most material topics and ensuring that these are reflected in the Charter.

CSR Europe Materiality poll

Results Top 1 comments per area and stakeholders

Stakeholders

GD4S



Environment

1	Reduce greenhouse gas and methane emissions in our operations and improve energy efficiency	Top 2	Top 1
2	Contribute to the development and distribution of renewable energy sources in our grids	Top 1	Top 1
3	Preserve resources and protect biodiversity	Top 3	Top 3



Social

4	Promote a corporate culture that fosters equal and fair treatment of our workers, and their continuous development in a safe workplace	Top 1	Top 1
5	Provide quality service and a safe supply of gas that meets the needs of our customers	Top 3	Top 1
6	Strive to positively impact society in the territories where we operate	Top 2	Top 3



Governance

7	Practise fair and transparent advocacy and prevent corruption	Top 2	Top 1
8	Disclose performance transparently	Top 3	Top 3
9	Enhance dialogue with stakeholders	Top 1	Top 2

5 — Charter Commitments Overview



Environmental commitments

GD4S member companies are committed to measure and report on:

1	Reduce greenhouse gas and methane emissions in our operations and improve energy efficiency	<ul style="list-style-type: none"> • Our companies' carbon footprint emissions and reduction • Reductions in methane emissions and network damage • Our companies' energy efficiency savings across our operations
2	Contribute to the energy transition through the distribution and integration of low carbon and renewable energy sources in our grids	<ul style="list-style-type: none"> • The increasing volumes of renewable gases in our network • Research and development programmes on renewable gases
3	Promote the circular economy and protect biodiversity	<ul style="list-style-type: none"> • The proportion of waste reduced and valorised • Our actions taken to protect biodiversity



Social commitments

GD4S member companies are committed to measure and report on:

4	Promote a corporate culture that fosters equal and fair treatment of our workers and their continuous development in a safe workplace	<ul style="list-style-type: none"> • The diversity in our workforce • The actions taken to upskill our workforce • The actions taken to promote safety in the workplace
5	Provide quality service and a safe supply of gas that meets the needs of our customers	<ul style="list-style-type: none"> • Our actions to keep our networks safe • Our actions to help our customers manage their energy consumption • Our actions taken to provide a quality consumer experience
6	Strive to impact society positively in the territories where we operate	<ul style="list-style-type: none"> • Our actions to raise awareness about energy and develop educational programmes • Our actions taken to create positive benefits in the territories where we operate • Our actions to embed sustainable procurement processes



Governance commitments

GD4S member companies are committed to measure and report on:

7	Practise fair and transparent advocacy and prevent corruption	<ul style="list-style-type: none"> • Our lobbying activities • Our internal processes to prevent corruption and promote ethical practices
8	Disclose performance transparently	<ul style="list-style-type: none"> • Our sustainability performance • Our economic contributions to society
9	Enhance dialogue with stakeholders	<ul style="list-style-type: none"> • Our stakeholder engagement frameworks • The development of our stakeholder engagement plans • Our regular materiality assessments

6 — Alignment of the Charter Commitments with Political Objectives

SDGs

EU ambitions

	  	<ul style="list-style-type: none"> Contribute to the EU's 2030 and 2050 Climate ambitions Supply clean, secure and affordable energy Build and maintain in an energy and resource efficient way Contribute to a holistic energy system integration Accelerate the shift to sustainable and smart mobility
	  	

We developed our commitments to align with European policy objectives and the United Nations' Sustainable Development Goals (SDGs). For GD4S, supporting the SDGs means playing our part in contributing to the sustainable development of the planet and wider society.

SDGs




EU ambitions

	  	<ul style="list-style-type: none"> Secure equal opportunities and access to the labour market, fair working conditions and social protection and inclusion Contribute to the right to quality and inclusive education, training, and lifelong learning Leave no one behind through the Just Transition framework
	  	
		

**SUSTAINABLE
DEVELOPMENT
GOALS**

SDGs

EU ambitions

	  	<ul style="list-style-type: none"> Finance the Green Deal Further embed sustainability into corporate governance Increase transparency in interactions with stakeholders

7 — Commitments in Detail



7.1 Environmental commitments

1 Reduce greenhouse gas and methane emissions in our operations and improve energy efficiency	2 Contribute to the energy transition through the distribution and integration of low carbon and renewable energy sources in our grids	3 Promote the circular economy and protect biodiversity
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We are committed to protecting the environment while ensuring the safe and sustainable delivery of our services. Our impact on the environment is multi-faceted as are the commitments that we make.

We are therefore committed to reducing the carbon footprint of our activities by reducing whole life-cycle emissions, improving energy efficiency, and reducing harmful emissions in general. We are committed to proactively reducing methane emissions as we continuously monitor and enhance our networks. We are striving to reduce our energy consumption and improve energy efficiency across our networks. Since the first and most efficient action to preserve resources is to reduce our energy consumption, we are also working to achieve reductions across all our operations.

Our sector has a decisive role in the energy transition, enabling the distribution and storage of alternative energies to facilitate their production and foster their wider use. Specifically, we aim to advance the development and deployment of renewable and decarbonised gases.

In addition, we strive to use energy efficiently, to fight against waste and build awareness of what can be done to protect biodiversity in a holistic approach in the territories where we operate.

1

GD4S members commit to reduce greenhouse gas and methane emissions in our operations, and improve energy efficiency

GD4S seeks to contribute to climate change mitigation by reducing the greenhouse gas (GHG) emissions caused by our operations in a full life-cycle approach and by acting to reduce their sources. We are committed to identifying all sources of our GHG emissions¹ and calculating and reporting on these emissions. Furthermore, we are committed to taking action to reduce these GHG emissions according to targets aligned to the Paris Agreement and EU Policy.

Methane is a large contributor to our carbon footprint. We are therefore engaging in the development of damage prevention and

striving to reduce fugitive emissions. We are also engaging internally to ensure that our operations are carried out responsibly in terms of energy efficiency. Our objective is to reduce our carbon footprint collectively with a specific target set for each member company.

GD4S member companies have developed plans to improve their resource and energy efficiency, fostering new technologies that support this goal. There are various ways to reduce energy usage in our operations, ranging from simple behavioural adjustments to extensive improvements of the network.

How will you know what we have achieved?

Every two years, GD4S will publish a progress report detailing:

- **Our companies' carbon footprint emissions and reduction**

In our operations' emissions (for example transport, fuel gas, fleets, purchases, buildings consumption) we will identify the direct and indirect sources of GHG emissions, set interim reduction targets and disclose how we are addressing these with the aim of showing continuous improvement.

- **The reduction in methane emissions and network damage**

We will highlight methane emissions and the volume of network damage on our grids, with shared indicators to reflect the results of our collective efforts to reduce them.

- **Our companies' energy efficiency gains**

We will highlight our operations' energy efficiency gains in various aspects and identify transferable best practices.

1. GD4S focuses on the greenhouse gas emissions identified in the GHG Protocol Corporate Standard and Kyoto Protocol, namely: carbon dioxide (CO₂); methane (CH₄); nitrous oxide (N₂O); hydrofluorocarbons (HFCs); perfluorocarbons (PFCs); and sulphur hexafluoride (SF₆).

7 — Commitments in Detail



Carbon footprint verification process

Best practice example by Gas Networks Ireland



In 2018, Gas Networks Ireland (GNI) signed up to the Low Carbon Pledge, a Business in the Community Ireland initiative for Irish businesses to invest time and resources into creating a more sustainable operation by being more energy efficient and reducing carbon usage.

The Pledge aims to practically demonstrate the commitment of Irish business to supporting the transition to a low carbon economy. To help ensure consistency and comparability of efforts across various companies, the internationally recognised Greenhouse Gas Protocol Corporate Standard is used as the underlying framework for the Low Carbon Pledge. Signatory companies commit to the following:

- Record all carbon emissions and reduce the intensity of such emissions
- Report individually through an annual report, or website or other publicly available equivalent source
- Review year-on-year carbon emissions with the aim of showing continuous improvement.

Gas Networks Ireland established its carbon footprint in 2019, selecting a baseline carbon year of 2010, i.e., a time before the Corrib gas field commenced supplies of natural gas to Ireland. Gas Networks Ireland has its carbon footprint independently verified to the Greenhouse Gas Protocol Corporate Standard ISO 14064-3:2019, and reports on GHG emissions in their annual Sustainability Report – www.gassustainability.ie. Gas Networks Ireland has recently committed to developing science-based targets and is now disclosing its carbon emissions via the Carbon Disclosure Platform (CDP) platform.



Participation in OGMP 2.0 Initiative

Best practice examples by Italgas, GRDF and Nedgia



The Oil & Gas Methane Partnership 2.0 (OGMP 2.0) is a Climate and Clean Air Coalition initiative, led by the United Nations' Environment Programme. It brings together industrial companies, governments, and NGOs to monitor and report methane emissions, and reduce them consistently in accordance with the environmental goals set at international level. In the second release, i.e. 2.0, the coalition plans on defining a broader and more ambitious methane-reporting framework, which will be extended to the entire gas value chain and to non-operated assets.

Participation in OGMP 2.0 offers Italgas, GRDF and Nedgia the opportunity to engage actively in the vital issue of reducing GHG emissions by contributing to the assessment of actual methane emissions, and to the definition and adoption of best practices for their reduction. It also offers a platform to communicate each company's voluntary commitments in reaching the goal of reduced emissions at the industry level.



2

GD4S members commit to contribute to the energy transition through the distribution and integration of low carbon and renewable energy sources in our grids

Achieving a carbon neutral energy transition requires a mix of renewable energy sources. The creation of a smart and flexible hybrid energy network is a prerequisite for success. Renewable gases (biomethane, hydrogen and synthetic methane), supportive infrastructure, as well as the inclusion of energy storage solutions such as power-to-gas, are essential components in this energy system. As DSOs, we already facilitate the physical injection of renewable energy, and we work with other stakeholders to facilitate the interoperability of the networks. We enable the integration of decentralised energy sources.

GD4S member companies contribute to the development of new, innovative approaches for a smart gas grid. We already welcome renewable gas in our networks and we commit to increase its share towards a gradual phase-out of fossil fuels. We play a key role in the energy transition by enabling the development, distribution, storage and use of renewable energy sources through ongoing improvements of our internal processes and investments in research and development.

How will you know what we have achieved?

In the regular progress reports, GD4S will provide an overview of:

- **The increasing volumes of renewable gases on our network**

We will disclose the number of new connection points for biomethane and hydrogen, the evolution of renewable gas volumes flowing through our networks and the reduced distribution of low carbon or fossil gas.

- **Our research & development programmes on renewable gases**

We will provide communication regarding our Research and Development programmes which are accelerating the uptake of renewable gases in terms of production and uses, developed by our members and/or collectively at GD4S level.



Inclusion of renewable gas into the Nedgia distribution gas grid Best practice example by Nedgia



The adoption of renewable gas in the gas infrastructure is a fundamental pillar in Nedgia's sustainability and energy transition strategy.

Elena's Landfill: the biomethane comes from the gasification of the closed cells of a landfill in the municipality of Cerdanyola del Vallés, Barcelona. The energy in the form of biomethane planned to be injected is 15 GWh/y and its start-up took place in June 2021.



UNUE project: biomethane is obtained from the anaerobic decomposition of biodegradable organic waste from industry, agriculture and livestock. The biomethane energy planned to be injected is 25 GWh/y and its start-up took place in September 2021.

Torre Santamaría Farm: biomethane comes mainly from the anaerobic decomposition of waste produced in a cattle farm. The biomethane energy planned to be injected is 30 GWh/y and its start-up took place in December 2021.

As a result, the number of projects injecting biomethane into the Spanish gas grid has multiplied by four in a year, going from 92 GWh/y to more than 160 GWh/y.

Green Pipeline Project – distributing the future Best practice example by Galp Gás Natural Distribuição (GGND)



GGND is developing the first power-to-gas (P2G) project in Portugal. This pilot project will inject up to 20% (volume) of hydrogen into a section of the existing gas grid, which will be isolated from the neighbouring grid, supplying 80 mostly residential consumers. This is a two-year trial, during which the impact of hydrogen on the pipeline network and consumers' gas appliances will be assessed.

The Green Pipeline Project is the first step to the decarbonisation of the Portuguese gas distribution network. The resources, expertise and knowledge applied in this project will be extremely useful to ensure the development and deployment of future P2G projects in a completely secure and efficient way.

3

GD4S members commit to promoting the circular economy and protecting biodiversity

In supporting the circular economy, we present our companies' potential to reduce operational waste and examine our capacity for reuse. We operate the grid to take preventative measures to mitigate the risk of pollution and reduce consumption of resources. Our emergency plans aim to reduce the impact of hazardous material in incidents of damage or leakage.

We are committed to reducing waste across our entire business operations with specific targets set by each member company. In tandem with our commitment to reducing waste to landfill, we are also committed to recover waste where possible.

We are committed to protecting biodiversity across our business and in the communities in which we operate. We develop and operate our grids, respecting the biodiversity and ecosystems surrounding our installations.

Each member company will develop specific indicators to protect biodiversity. These indicators could include the amount of land occupied by new installations in and outside natural areas, or the amount of land environmentally restored. The objective is to demonstrate a collective path with custom-made national approaches.

How will you know what we have achieved?

In the regular progress reports, GD4S will provide an overview of:

- **The proportion of waste reduced and recovered**

We will disclose the results of our efforts in terms of waste management, reduction, and recycling in our operations, both for hazardous and non-hazardous waste.

- **Our actions to protect biodiversity**

As a first step before setting goals, we will analyse our current impact on biodiversity, and we will disclose the individual actions taken relating to biodiversity and the programmes in which GD4S member companies are involved.



Biodiversity enhancement programme Best practice example by Gas Networks Ireland



Gas Networks Ireland's multifaceted Biodiversity Enhancement Programme started in 2017. Our Programme aims to increase awareness about biodiversity among our staff and stakeholders. In February 2019, at Ireland's first National Biodiversity Conference, Gas Networks Ireland was announced as one of 14 founding members of the Irish Business and Biodiversity Platform, and a signatory of the 'Our Seeds for Nature' Charter. This included a public pledge to manage all infrastructure, asset base and offices in Ireland and Scotland, in line with biodiversity best practice and to strive to have a net positive impact on biodiversity in all our operations.

In 2020, we developed a Biodiversity Action Plan, which outlines our strategic aims and actions to ensure biodiversity is valued and is an integral factor in decision-making across the business. Gas Networks Ireland currently implements a broad range of measures at several sites including reduced grass cuttings and pesticide use, installation of bird boxes, swallow barns, bug and hedgehog motels, biodiversity awareness signage and planting of native wildflowers.

Gas Networks Ireland is also a business supporter of the All-Ireland Pollinator Plan, which is an Irish Government-led initiative promoting support for farmers, local authorities, schools, gardeners and businesses to combine efforts to create a habitat where pollinators can survive and thrive. With assets all over the island of Ireland, we recognise the potential to create a network of pollinator-friendly habitats and to share our knowledge with other businesses.



Developing 'circular economy thinking' within the company Best practice example by GRDF



GRDF works on the implementation of the principles of the circular economy within the company. GRDF set up an internal network of waste advisor and actions – such as 'waste coffee' and 'Reduce, Reuse, Recycle' workshops – and is carrying out engagement initiatives with employees to creatively explore further opportunities to reduce resource consumption, improve sorting practices and recycle waste. As an example, while 11 million new smart meters are being deployed, the meters being removed are dismantled and their parts recycled. So far, 4,440 tons of steel, 77 tons of aluminium and 568 tons of cardboard have been recycled. GRDF also contributes to the emergence of new recycling solutions, such as those for professional clothes and polyethylene offcuts.



© Grégory Brandel
– GRDF, Elyx.



7.2 Social commitments

4 Promote a corporate culture that fosters equal and fair treatment of our workers, and their continuous development in a safe workplace	5 Provide quality service and a safe supply of gas that meets the needs of our customers	6 Strive to impact society positively in the territories where we operate
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Gas Distribution System Operators (DSOs), including GD4S members, are key actors in the energy sector and enablers of the clean energy transition. We are also important economic players and, as such, we have social responsibilities towards our employees, customers, and the territories in which we operate. We commit not only to provide safe workplaces but also to ensure our employees have life-long career opportunities.

We continue to promote an internal environment where safety and quality are core values at every level of our organisations, as these are key elements which foster customer confidence. We also have a central role to play in keeping our infrastructure safe and reliable.

As economic players we have a responsibility to participate in the creation of value for all segments of society. We want the energy and digital transitions to benefit all customers.



4

GD4S members commit to promoting a corporate culture that fosters equal and fair treatment of our workers, and their continuous development in a safe workplace

The well-being of our employees is a shared core value within GD4S member companies. Topics including work-life balance, positive working environments, and flexible ways of working are high on our agendas. We understand that workers thrive when presented with lifelong learning opportunities and that the development of skills is key to ensuring a successful just transition to a low carbon future. We therefore support our workers in their professional development and provide lifelong learning programmes to that end.

Diversity and equal work opportunities are central to our companies' activities. We are committed to fostering a workplace culture where diversity and inclusion are the standard,

where every worker (irrespective of gender, age, disability, or origin) has a sense of belonging. We strive to reflect the social diversity of society at all levels of our organisations.

We hold the health and safety of our workers above all other considerations. A proactive culture of safety is key to achieving a target of zero employee injury incidents. We promote a culture where incidents are communicated openly in a spirit of continuous improvement.

We are committed to mapping out our programmes to promote diversity, well-being, and lifelong learning within GD4S member companies. This will identify possible gaps and enable us to develop targeted solutions.

How will you know what we have achieved?

In the regular progress reports, GD4S will provide an overview of:

- **The diversity in our workforce**

Based on a recurring analysis and assessment, we will disclose the status of our workforce diversity and the efforts to diversify our organisations further, based on shared assessment tools. The analysis may include, amongst other criteria, the percentage of women in management and technical positions, diversity in executive and managerial positions, as well as the number of people with disabilities.

- **The actions to upskill our workforce**

We will put in place assessment tools to analyse our efforts to advance employee skills development. We will also report on key metrics, such as the training hours per employee, our employees' satisfaction, the percentage of people trained each year, and the percentage of people included in talent transformation programmes.

- **The actions to promote safety in the workplace**

We will disclose Health and Safety objectives and key metrics such as the Lost Time Injury Frequency Rate (Occupational Safety and Health Administration (OSHA) criteria), the severity rate of accidents with staff lost time (OSHA criterion), and the absenteeism rate due to common contingency.

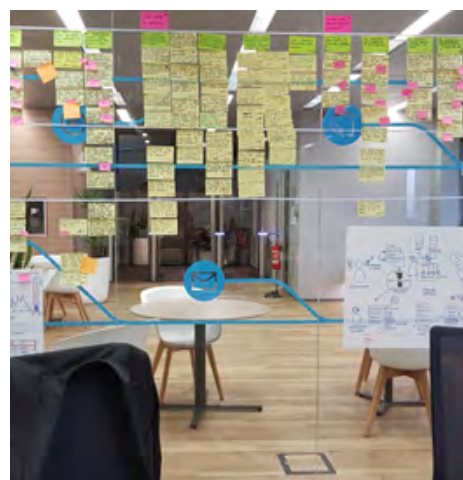
Digital Factory: changing people's way of working

Best practice example by Italgas



Created in November 2018, the Digital Factory is a place for generating ideas and innovative solutions which supports Italgas in its process of digital transformation. It is a place where 'learning by doing' matters. In their Milan offices, in four digital rooms, multifunctional teams work over 16 weeks to create new solutions and new working processes. After 16 weeks the rooms release a Minimum Viable Product (MVP), the minimum solution that meets the needs, ready to be adopted.

The Digital Factory may soon become a place for open innovation involving small to medium enterprises, start-ups and university research institutes. They will be able to propose and develop applications that will prove helpful to Italgas, its customers and the whole industrial ecosystem.



Safety culture programmes

Best practice example by Galp Gás Natural Distribuição (GGND)



GGND developed safety talks involving dialogues between supervisors and workers. These were based on observing work performance and focusing on the behaviours and conditions under which tasks are performed in order to ensure the safety of those activities. Through this initiative, GGND intends to improve the safety of its activities, bringing to light concepts and points of view that may not be fully understood. The main driver is to strengthen a safety culture that allows GGND to:

- Identify unsafe acts and conditions, correcting them immediately
- Understand the reasons why the work is not performed correctly
- Avoid accidents.



5

GD4S members commit to providing quality service and a safe supply of gas that meets the needs of our customers

GD4S seeks to empower customers to improve their own energy consumption in a responsible way. We also collaborate with stakeholders to help them improve their energy consumption through, for example, smart energy consumption in buildings, regular maintenance of equipment, and renovation of existing energy systems.

Our responsibility is to ensure that our energy knowledge is accessible. We conduct targeted programmes to raise consumer awareness of the safe use of their appliances. We regularly provide customers with clear and easy-to-understand information about their energy consumption and the implication of their choices. We enable customers to make informed choices about new, green solutions by offering the support and knowledge they may need, while ensuring customer data safety is maintained according to the highest standards. In the longer term, this may mean supporting them with customised consumption data that communicates climate impact and

supports them in switching to enhanced (decarbonised) solutions.

Another area where some GD4S member companies are focused on is the roll out and monitoring of the installation of smart meters. Smart meter systems/information systems help deliver efficient energy consumption. Exchanging old systems with 'smart' calculation meters allows customers to adapt to energy disruptions, and equips them with tools to address these, thereby allowing them to monitor and optimise energy consumption.

We monitor our networks continuously, with the aim of reducing damage as much as possible. We therefore implement best practice safety measures, especially for alternative energy sources such as hydrogen. In the rare cases of damage, we have put in place damage-preparedness plans, outlining specific procedures to remedy any damage as quickly as possible.

How will you know what we have achieved?

In the regular progress reports, GD4S will provide an overview of:

- **The actions to keep our network safe**

We will communicate about key actions taken to keep our network safe. Some of our actions will focus on the use of digitalisation to improve the maintenance of our infrastructures or the speed of reaction for intervention (i.e. response times).

- **The actions to help our customers manage their energy consumption**

We will disclose key actions carried out to help customers make more informed choices about their energy consumption. This may include digitalisation processes which will help them better understand their energy consumption through the use of smart devices.

- **The actions to provide quality consumer experience**

Our actions will be directed towards making our customer service accessible to those with different needs, such as blind or deaf persons, people who do not speak the language or who cannot read. We will also present our actions to effectively address any complaints arising.

Empowering consumers to improve their energy consumption through the provision of data
Best practice example by GRDF



GRDF has actively contributed to the establishment of the ORE (Energy Network Operators) agency, an association created in 2017 with electricity and gas network operators. The agency facilitates access to energy data by external stakeholders while also respecting GDPR and managing, in an exemplary manner, consumer consent for dissemination to third parties. At the heart of this system the deployment of 'smart meters' plays a key role. Resulting from the planned installation of 11 million meters in 9,000 French municipalities, by 2022, each resident will be better able to access, monitor and control their daily consumption. With the "My Customer Area" interface, customers can access their daily gas consumption.



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Safety awareness programme
Best practice example by EDA THESS



To raise its consumers' awareness, EDA THESS implements a communication strategy to provide regular updates to end customers regarding the safe use of natural gas and the optimal maintenance of their internal installations.

By focusing on consumer familiarity with the use of natural gas, the company developed annual information campaigns across local and national press, radio and television. In this context, EDA THESS also constantly informed consumers with leaflets, email, SMS, post and through its website about their obligations to maintain their internal installations. At the same time they used mobile customer service units to reach and inform customers in remote areas and from vulnerable groups. The company reminded consumers, on an annual basis, about their obligation for the four-year tightness testing required by the regulation. This was achieved by conducting approximately 5,000 inspections to confirm the existence of the relevant certificate. EDA THESS is also conducting spot inspections in existing commercial and industrial installations to verify their compliance with the relevant regulations.

Furthermore, in the case of extreme weather conditions, EDA THESS uses SMS to inform its consumers of the necessary preventive technical actions required concerning their internal installations.

Targeted publication of technical articles, in industry newspapers as well as energy-oriented websites and magazines, is used to raise professionals' awareness regarding cutting-edge technology, quality, efficiency and safety issues. EDA THESS also hosts workshops and information events with engineers, authorities, and unions on internal installations.



6

GD4S members strive to impact society positively in the territories where we operate

New energy sources and technologies, such as hydrogen gas and renewable gas, will require the acceptance and support of local communities to become viable in the long-term. It is important that local citizens understand what is happening in their community and how such changes are likely to affect them. As we provide a direct link to citizens and customers, we recognise that awareness-building plays a major role in the understanding and acceptance of new renewable energy sources. We are committed to continuing to harness a collaborative approach with local partners in order to improve their understanding of our company operations and associated impacts. We want to facilitate an inclusive energy transition by supporting local organisations in their social and economic development. GD4S member companies are collaborating with academic institutions as they work on innovative solutions for renewable energy sources and related educational programmes.

We will continue to integrate sustainability requirements in our procurement process. This ensures responsible purchasing and influences our business partners to meet core sustainability principles in their operations. We monitor and disclose our engagement with suppliers to optimise their contribution to the delivery of our sustainable commitments. As local economic actors, DSOs are attentive to local issues and dynamics, and are committed to contribute positively to them. We will continue to develop links with different local actors and embed various initiatives, including:

- Helping communities in the set-up of territorial energy plans
- Supporting bodies that contribute to community development with social impact
- Having local recruitment processes
- Purchasing ethically and locally, where possible.

How will you know what we have achieved?

In the regular progress reports, GD4S will provide an overview of:

- **Our actions to raise awareness about energy and the development of educational programmes**

We will release our actions aimed at sharing our knowledge of potential new energy sources and how they can be made accessible to customers. We will also disclose the number of initiatives carried out and the number of students reached.

- **The actions to ensure the creation of positive benefits in the territories where we operate**

We will report on our actions to contribute to the sustainable development of new energy sources and highlight the positive impacts on the territories in which we operate. We will disclose the number of initiatives carried out and the contribution made to key stakeholders, as well as the economic benefits for local suppliers.

- **The development of a sustainable approach to purchasing**

We will disclose the individual actions taken towards the development of a sustainable procurement policy. GD4S member companies will highlight actions with key indicators such as the percentage of green purchases and the percentage of CSR criteria incorporated into tenders.

Dual education programme 'Energy for my job'
Best practice example by Distrigaz Sud Rețele



A programme was developed by Distrigaz Sud Rețele, to guide and support young people (graduates of middle schools) to follow a dual vocational education plan, specialising in plumbing and gas installations. The three-year curriculum focuses on practical training (on average, 70% of the school curriculum in the final year) facilitated by Distrigaz Sud Rețele professionals whose goal is to bring their expertise and professionalism into the workshop practice of students.

The success of the project was marked by the unexpectedly high number of entries (two entries for each place available in one of the classes) and the international recognition received: the Special Employee Award at Engie Innovation Trophies 2020. In addition to the monthly scholarship granted by the Romanian state, the students also benefit from a monthly scholarship and, depending on the school results, a merit scholarship, both granted by the company. In addition, Distrigaz Sud Rețele covered the costs of pre-urban transport, dedicated urban transport and lunch during the internship period. In 2020, 38 out of 55 graduate students were employed by DGSR.



Sustainable purchasing
Best practice example by GRDF



For GRDF, purchases are an essential element of its CSR commitments in terms of developing energy efficiency, renewable energies and the circular economy. In 2018, more than 50% of these purchases were made from small and medium size enterprises and mid-cap companies, mainly located in France and/or Europe. GRDF's aim is to increase its contribution to the development of the economic fabric of the territories in which it operates, and to increase the volume of our solidarity purchases dedicated to the adapted and protected sector, to reach €3.5 million by 2023.

GRDF has initiated an action plan to develop our culture of responsible purchasing and to integrate these issues across our most significant markets. This includes the development of environmental and social clauses adapted to specific market conditions, and the design of practical tools for suppliers and buyers.



7.3 Governance commitments

7 Practise fair and transparent advocacy and prevent corruption	8 Disclose performance transparently	9 Enhance dialogue with stakeholders
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7

GD4S members strive to impact society positively in the territories where we operate

GD4S seeks to be transparent in our advocacy through clear and open communication of our positioning on policies related to the future of the gas grid. GD4S is registered on the EU transparency register with the identification number: 382692732615-35.

We promote a culture of transparency and have put in place clear guidelines to ensure that our business operations meet all relevant legal obligations. We have developed disclosure policies which are aligned with international and/or European standards.

The integrity and accountability of our business practices is key to the successful integration of sustainability in society. We commit to operate lawfully and pledge to uphold and enforce the support of human rights in our businesses and in collaboration with our business partners. We promote a zero-tolerance culture for corruption and fraud.

How will you know what we have achieved?

In the regular progress reports, GD4S will provide an overview of:

- Our lobbying activities**
 We will disclose all relevant meetings held with European institutions and all resources used for European advocacy.
- Our internal processes to prevent corruption and promote ethical practices**
 We will highlight the approach designed to prevent corruption and promote ethical practices and how we cascade these practices to our suppliers.

Policies and Codes of Conduct
Best practice example by Nedgia



Nedgia operates under corporate policies and codes of conduct. The commitments – especially those made to society and the environment – lead to a host of policies, criteria and codes that define Nedgia's development guidelines and guarantee its compliance. Values such as ethics, integrity, transparency, and a concern for the environment form part of Nedgia's strategic outlook and corporate culture. These principles are written in Nedgia's Code of Ethics which defines the guidelines for conduct for administrators and employees, with a specific code for suppliers.

The Compliance Policy supports the Code of Ethics and is intended to define the general principles that inform the compliance management system, as well as the company's main commitments regarding compliance. This guides its behaviour in all its fields of activity and in achieving its business objectives. Our anti-corruption policy establishes the principles that guide the conduct of all employees and managers across the group regarding the prevention, detection, investigation and redressing of any corrupt practice within the organisation. Our Human Rights Policy is aligned with the Code of Ethics and the 10 principles of the United Nations Global Compact.

Ethical and Anticorruption Charter
Best practice example by Italgas



The Code of Ethics, approved by the Italgas Board of Directors in 2016, represents the system of values underlying the group's ethical culture, and the thorough training and monitoring processes which ensure that the company lives up to the high standards it committed to. Key principles of this include transparency, compliance, corporate responsibility, and systematic methodology for stakeholder involvement. Sustainable development, protection and promotion of human rights and freedoms, non-discrimination, protection of labour rights and union associations constitute the pillars around which the Code of Ethics of Italgas is structured. All companies in the Italgas Group adopted a Policy for the Prevention and Fight Against Corruption and implemented a management system for same which obtained the certification pursuant to UNI ISO 37001:2016. The anticorruption systems are based on the principles of opposing without exception all the practices of corruption, managing the activities in compliance with the Anti-Bribery Laws, carrying out inspections and audits to assess performance and behaviour, and providing clear and appropriate procedures for the selection of suppliers, relationships with public officials and whistleblowing.



8

GD4S members commit to disclosing performance transparently

We believe that transparent disclosure is our responsibility and that it fosters better understanding of the consumption choices by customers. Our annual reports contain both financial and non-financial information. We commit to align our practices with the highest European standards and the commitments encompassed in the Taxonomy designed at European level.

Good governance fosters development and generates fair competition. As business partners, we have a responsibility to contribute proactively to combatting bribery and corruption. We are committed to meeting European and international standards of integrity and accountability, such as the ISO/PC 278 anti-bribery management systems. Each member company is committed to continuing our work on establishing and maintaining a culture of integrity, transparency and compliance.

How will you know what we have achieved?

In the regular progress reports, GD4S will provide an overview of:

- **Our sustainability performance**
We will define common disclosure standards, upon which our members will report annually via their company, corporate or sustainability reports.
- **Our economic contributions to society**
We will disclose the monetary impact of our business activities – such as our revenues, taxes paid at national level and our investment policy on sustainability initiatives. In addition, we will seek to make visible the link between our sustainability and financial performance.

Disclosure of sustainability performances Best practice provided by GRDF



Every four years, GRDF publishes the carbon footprint of its activities. This footprint covers direct emissions (scope 1) and indirect energy emissions (scope 2) as required by regulation. GRDF voluntarily includes other indirect emissions (scope 3) such as emissions linked to its purchases. The global view of its carbon footprint enables GRDF to identify and activate every means for reduction. Furthermore, GRDF is working to reduce its carbon footprint at a territorial level. For instance, such an exercise has been carried out for the City of Paris, with results presented locally. GRDF is a national company with strong roots in the communities where it operates and as such, initiatives are conducted to publish sustainability performance on a local scale.

9

Enhance dialogue with stakeholders

Our Charter is designed to support Europe in meeting its sustainability objectives. Partnerships are essential to ensure a successful transition to a sustainable future. GD4S member companies commit to ongoing dialogue with our stakeholders, with the aim of better understanding the issues in society and the environment and, in parallel, challenging our commitments. We aim to

foster continuous dialogue with stakeholders to ensure the adoption of meaningful and transparent sustainability commitments. We strive to engage and collaborate actively with these stakeholders both on current and future energy, environment and societal concerns. We are open to discussion on how best to define the implementation of the pathways, now and in the coming decades.

How will you know what we have achieved?

In the regular progress reports, GD4S will provide an overview of:

- **Disclosed stakeholder engagement frameworks**
We will disclose our stakeholder engagement frameworks. We will share best practice examples of the range of stakeholders that each organisation works with and indicate key areas of focus.
- **A focus on the development of our stakeholder engagement plan**
We understand the mutual benefits of dynamic engagement with all our stakeholders. We will continue to develop our stakeholder engagement plan and will disclose key engagement initiatives and progress.
- **Publication of our regular materiality assessments**
We understand the importance of maintaining regular contact with our stakeholders regarding sustainability topics. We will disclose the results of our materiality assessments within GD4S company reports and collective materiality assessments in progress reports.

7 — Commitments in Detail

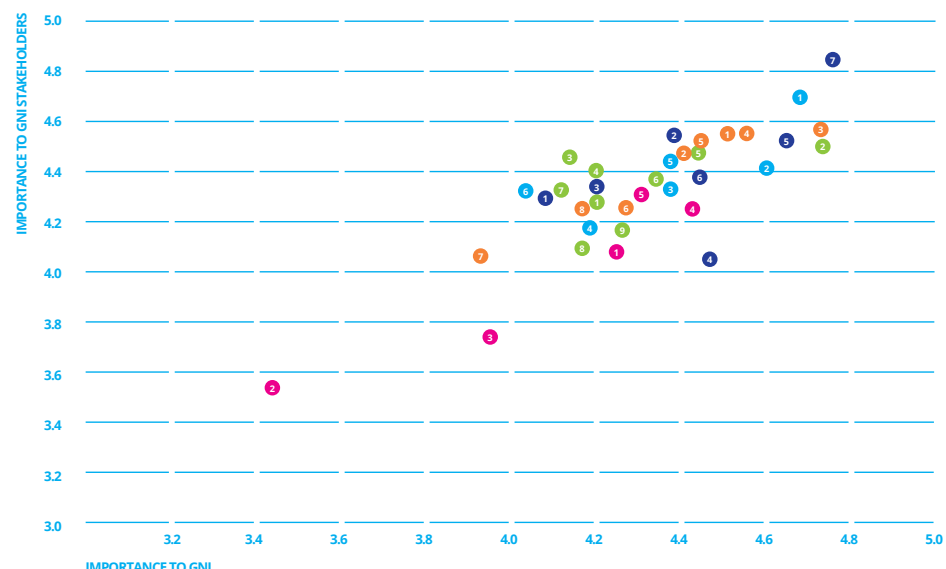


Materiality assessment process

Best practice example by Gas Networks Ireland



Gas Networks Ireland conducts regular materiality assessments aimed at engaging stakeholders to determine how important specific Environmental, Social and Governance (ESG) issues are to them. The insights gained are used to guide Gas Networks Ireland's sustainability strategy and communication and help tell a meaningful story about sustainability within the company. In developing this strategy, Gas Networks Ireland considered materiality feedback from over 30 external stakeholders and 230 employees. Gas Networks Ireland's current materiality analysis largely maintained results from previous years, with stakeholders rating sustainability topics like climate change and biodiversity higher than in previous assessments, with network safety and employee safety remaining as the highest material issues for the company.



Community

1. Community Engagement
2. Corporate Giving
3. Employee Volunteering
4. Promoting STEM
5. Environment in Community

Workplace

1. Employee Safety
2. Employee Health and Wellbeing
3. Training and Development
4. Employee Recognition
5. Employee Comms
6. Flexible Working

Marketplace

1. Sustainable Procurement
2. Human Rights
3. Data Protection
4. Product/Service Promotion
5. Responsible Prod/Service
6. Customer Relationships
7. Network Safety

Environment

1. Pollution Prevention
2. Waste
3. Carbon Emissions
4. Climate Change Adaptation
5. Energy
6. Transport
7. Water
8. Biodiversity

Environment/Economic

1. CR/Sustainability Governance
2. Public Policy
3. Regulatory Compliance
4. Stakeholder Engagement
5. Anti Bribery
6. Economic Sustainability
7. Risk Management
8. Diversity and Inclusion
9. Org Change Management

Digital interface to interact with clients

Best practice example by Distrigaz Sud Rețele

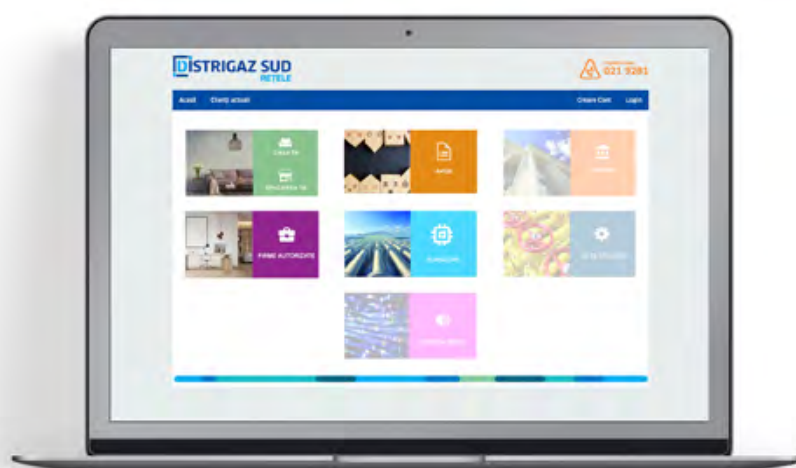


In 2018, Distrigaz Sud Rețele designed and put in place ePortal, a digital interface which provides a direct communication channel with clients. In just a few clicks future customers can: choose the type of connection needed; upload all necessary documents; give technical details in an easy way; check the status in real time; and pay all services online and then wait for the connection to be completed. Existing customers can: see their gas consumption in real time; group together multiple accounts; pay their bills based on real consumption; and view their local weather forecast.

The benefits include:

- the whole connection process is digitalised, and back-office aspects are automated, saving 25% of HR costs
- all documents are filed online and transferred directly to the computer system
- removal of paperwork
- the application process is 30% faster

Distrigaz Sud Rețele is the only gas distributor in Romania offering this service. According to market research, customer satisfaction has increased by 75%.



8 — Conclusions

With this Charter, we are affirming our collective commitment to going above and beyond to build a better future for all. We are already implementing additional voluntary initiatives and day-to-day actions to achieve our sustainability goals.

We believe that as gas Distribution System Operators (DSOs) we can be part of the solution to some of the most pressing environmental challenges. As a mixture of both state and private companies, we can also be part of the solution to meet increased social and governance expectations. We believe that sustainability is integral to being a successful business and we always strive to act in an ethical, transparent and responsible way.

Through this Charter and our commitments, we want to prove that it is possible to deliver economic performance while reducing our impacts on the environment, caring about our people and behaving with high ethical standards.

This Charter is a collective framework that complements individual company initiatives and shows our commitment to making a difference for the planet, for people and for our businesses. Highlighting the role of the gas DSOs, it lays out key strategies in areas that are critical to Sustainable Development, encompassing economic, environmental and social aspects which need to be addressed simultaneously.

With such ambition in mind, GD4S and its members will focus our actions and foster best practices in nine critical key areas, with aspirational and achievable ambitions. We call upon our stakeholders to join us in these efforts to create economic, environmental and social value, and we are determined to make it happen.

GD4S Sustainability Charter objectives: a framework for collective progress



Progressing the charter

After the general endorsement of the Charter, we will develop a tiered approach for each commitment.

Committing → **Reporting** → **Improving** → **Highlighting progress**

With the examples further developed in the Appendices, we are proving that we are already committed to this sustainability journey.

9 — Appendices: additional case study examples

9.1 Environmental commitments

9.1.1 Reduce greenhouse gas and methane emissions in our operations and improve energy efficiency

Preventive measures for mitigating methane emissions

Best practice example by Galp Gás Natural Distribuição (GGND)

GGND is committed to pursuing new forms of prevention and mitigation for methane emissions from third party damages. The company has set up an internal working group which is responsible for monitoring and analysing any such damages, their causes and consequences, and creating a future mitigation action plan. The main goal is to promote and establish direct communication channels between GGND, subcontractors and public/private entities that operate near the company's grid, as well as the municipalities responsible for such matters. Since the cause of damage is often connected to construction work, where existing pipe networks are not given due consideration, GGND provides construction companies with knowledge of pipeline locations, thereby reducing the possibility of any future damage.

Greenhouse gas emissions and net energy consumption reduction target

Best practice example by Italgas

Italgas Group has included specific new targets in its 2021–2027 Strategic Plan, committing itself to reducing net energy consumption and GHG emissions, thereby putting the Group ahead of the EU targets set for 2030. Thanks to the digital transformation of the network and the technological innovations implemented – from CRDS (Cavity Ring-Down Spectroscopy) technology to the solutions by Seaside (Group's ESCo) – Italgas expects to reduce greenhouse emissions (Scope I and Scope II market-based) by 30% by 2027, and net energy consumption by 25% by 2027, when compared to a 2020 baseline.

The emissions target will be reached thanks mainly to the increasingly widespread use of CRDS technology. Further contributions to the achievement of sustainability goals are expected from Seaside's energy efficiency activity, aimed at reducing civil and industrial gas consumption, as well as from more efficient management of the company's service vehicles fleet. Electricity consumption will fall thanks to cogeneration and turbo-expansion plants installed in the main city gates of the network, enabling the use of self-produced electricity.



9 — Appendices: additional case study examples

Setting up and implementing a company GHG reduction target

Best practice example by GRDF

Gas distribution is already an efficient activity in terms of greenhouse gas emissions. The total of our GHG emissions represents 0.2 % of France's emissions. But these emissions need to be reduced further to contribute to the EU climate neutrality objective. In 2019, GRDF's activities generated 939 ktCO₂eq. GRDF has reduced its carbon footprint by 8.2% in 10 years. To go further, the company set the objective to reduce its GHG emissions by 30% by 2030, compared to 2009, and has set up an action plan to reach this goal. The main actions target methane emission reduction but also other direct or indirect emission sources, such as professional fleet purchases. All company employees have a role to play and GRDF is proactive in promoting awareness-raising and mobilisation campaigns.

Energy efficiency boilers

Best practice example by Gas Networks Ireland

Gas Networks Ireland is an active participant in Ireland's Public Sector Monitoring and Reporting (PSMR) initiative. The scope of the PSMR applies to our office and fleet energy. While the PSMR aimed at achieving a 33% energy saving within the public sector by 2020, we have exceeded this ambition with 46% energy savings across our offices and fleet. Our energy savings are realised by metering and energy efficiency drives across all office locations, along with the replacement of inefficient lighting and heating solutions and choosing greener options for our fleet.



On the transmission network, Gas Networks Ireland identified aged and inefficient heating equipment on our gas processing sites. Our operations proactively commission higher efficiency boiler packages on Above Ground Installation (AGI) sites to preheat gas, removing older inefficient systems. These are actively being replaced with high efficiency module boiler packages, greatly reducing the carbon intensity of our operations. Policy decisions to reduce outlet temperatures also ensure less process gas is being used.

Preventive measures for reducing methane emissions

Best practice example by Nedgia

Nedgia implemented measures for emissions reduction, which include amongst others: the replacement of obsolete materials in pipes; improving response times in urgent repairs; establishing direct communication channels with the construction industry; and avoiding purging and intentional venting by collecting the gas and reinjecting it into the grid. The emissions intensity in Nedgia is currently well below the target values for the gas industry and close to 'near zero'. Our methane emissions mitigation strategy will be based on a reduction in emissions intensity, considering the volume of gas conveyed by the network in one year. In addition to this action, Nedgia is committed to increasing the frequency of LDAR (Leak Detection and Repair) campaigns in selected urban areas, as well as implementing a gas collection system by means of vacuum pumps in commissioning of new grids.

Gas network monitoring

Best practice example by Italgas

Italgas has adopted a new system of network monitoring. The CRDS (Cavity Ring-Down Spectroscopy) consists of a sophisticated sensing technology that offers important advantages in terms of speed and width of the areas subject to gas leakage detection. Different vehicles (including boats) are equipped with this technology which is highly sensitive in the detection of gas in the air. It is 1000 times more sensitive than traditional technologies. The new approach does not require the vehicle to follow the underground pipeline, thus removing the problem of potential obstacles (such as parked cars) and covers significantly more ground: 150–200 metres wide and 5–8 metres high, compared to 1–2 metres and 10–20 centimetres. This data, together with information on the direction and speed of the wind, and geo-referenced measurements makes it possible to provide extremely rapid and precise identification of the origin of any dispersion.

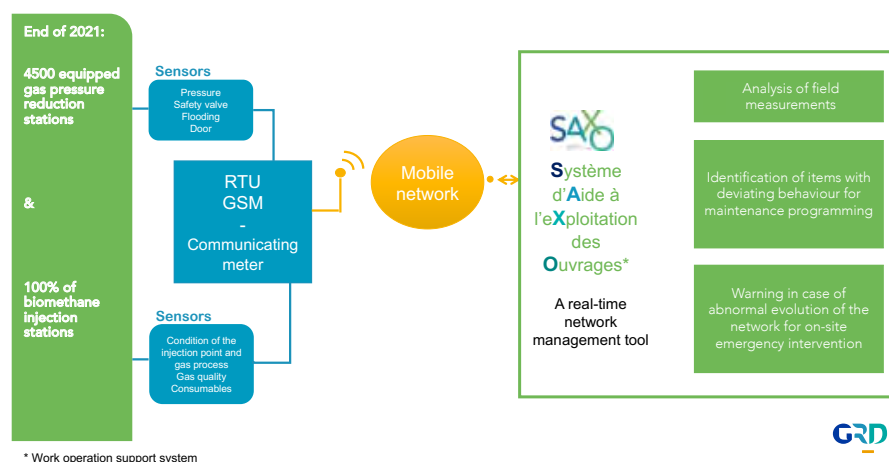


9 — Appendices: additional case study examples

Optimising resource efficiency: remote monitoring programme TEX Best practice example by GRDF

As a flagship industrial programme of GRDF, the TEX system allows remote monitoring of critical points on the network as well as remote operation of the network. Since 2014, almost 4,000 pressure reducing stations have been installed, of which 100% of the 200 biomethane injection stations are covered. TEX improves the quality of service by avoiding customer outages and reduces the number of large-scale incidents with potential negative impacts. This programme enables GRDF to optimise the management of its network and, ultimately, make energy efficiency gains.

Monitoring description



Network efficiency and digitalisation Best practice example by Italgas

Digitalisation of the network is a key strategic pillar for Italgas. Thanks to the Internet of Things (IoT), a multitude of sensors distributed along the network can communicate and interact with each other and the external environment to provide information and inform decision-making. This tool prevents faults through maintenance and quickly enables identification of potential leaks. By the end of 2022, Italgas will replace more than 5,000 pressure reduction stations with new digital solutions. The key innovation will be the widespread installation of remote-controlled sensors which will allow monitoring of the grid data and remotely control the valve system. Italgas will be able to manage the network according to innovative methods, criteria and algorithms, making it unique in Europe. A digital network enables analytics-based network management, supporting Italgas's operational efficiency. For instance, the company has started the analysis of network balancing: by comparing daily amounts of gas in different points of the network (e.g. redelivery points, end user meters), it is possible to identify consumer abuses or gas leakages promptly, in specific portions of the network. This could not have been possible without the extensive campaign of smart meter substitution over recent years (with more than seven million households converted).

Smart mobility: fleet conversion to CNG

Best practice example by Italgas

In 2019, Italgas completed the process of converting its vehicle fleet to CNG, replacing more than 1,500 cars, and installing several recharging points near local offices. In parallel, a system of fleet monitoring has been installed to guarantee a constant control of fuel consumption and emissions. The system will also support the monitoring of travel security for employees and field operators. Italgas also decided to create a service which offers local entities the opportunity to accelerate transition to a more sustainable, low-emission public transport fleet. This is already offered to the most important gas customers. Italgas is building a complete package of innovative, low-carbon services to support energy transition for local entities.

9.1.2 Contribute to the energy transition through the distribution and integration of low carbon and renewable energy sources in our grids

West Grid Synergy: adapting the grid to accommodate renewable gases

Best practice example by GRDF



GRDF is a partner of the West Grid Synergy demonstrator, which is investigating 'reverse flow installations' (also called 'intelligent compressors'). These installations allow for the increase in gas pressure level in order to circulate biomethane to additional areas of consumption. In 2017, two intelligent distribution-transport compressor pilot projects were initiated in Brittany (Pontivy) and Pays-de-la-Loire (Pouzauges) regions. These areas show proven demand for an intelligent compressor: i.e. production of biomethane higher than local consumption, sufficient maturity of the biomethane injection projects, a local dynamic favourable to the development of renewable gases and use of these renewable gases (bio-NGV mobility in particular), supported by strong involvement by communities (regions).

Power-to-Gas (P2G) Project in Sardinia

Best practice example by Italgas

Italgas is developing an innovative P2G pilot project in Sestu, on the island of Sardinia, where the company is completing a new fully digitalised distribution grid. The plant will generate renewable electricity and transform it into green hydrogen or synthetic natural gas (through methanation) for residential and industrial users, and mobility applications. With blends from 3–5% (for households) to 10–20% (for industries), the project will be the testing ground for the nascent green hydrogen market, its use as a clean energy vector in many end-uses, and the decarbonisation of gas distribution.



9 — Appendices: additional case study examples

Supporting project owners in the development of their biomethane plant Best practice example by GRDF

GRDF assists biomethane project owners in various ways. GRDF conducts different studies for project owners and local authorities to facilitate the development of biomethane injection into the grid. These studies include estimations of the feedstock potential in the area to assess the development of biomethane plants and the needs to increase the distribution network capacity. GRDF provides support to project owners to connect their biomethane plant to the grid. It plans and builds the required extension and develops and operates the injection station. Once the biomethane plant is finalised, GRDF controls the quality and the volume of biomethane injected. GRDF also helps project owners by fostering a dialogue around the acceptability of the biomethane plant for the local community. The scope of GRDF's work is strictly defined by the regulatory framework. It does not allow GRDF to produce biomethane or to build or finance any anaerobic digestion units.



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9.1.3 Promote the circular economy and protect biodiversity

Smart Tracker for reducing smart meter waste Best practice developed by Italgas

Smart Tracker was designed and developed inside Italgas Group's Digital Factory – a real corporate 'innovation factory'. This application optimises management of a smart meter's life cycle. Smart Tracker is able to check the status of faulty meters and, if the malfunction is battery related, these are replaced, and the meter reused. Smart Tracker extends the useful life of the meter, thereby significantly reducing waste.

9.2 Social commitments

9.2.1 Promote a corporate culture that fosters equal and fair treatment of our workers and their continuous development in a safe workplace

Apprenticeship: a springboard to the future Best practice example by GRDF

In order to address the needs of our companies, GRDF has run an ambitious apprenticeship programme which delivers qualified training and development. This has been progressed over many years and achieves standards above those legally required. Every year, GRDF trains over 600 apprentices (6% of employees). Our goal is to prepare them for the labour market. In 2018, 97% of apprentices received their diploma and 42% were recruited by GRDF. Those not recruited benefited from personalised support for entry into the labour market. Training and upskilling offer opportunities for GRDF to diversify the expertise of its apprentices further.



Apprenticeship: a springboard to the future Best practice example by GRDF

Health and Safety Plan 2021–23 Best practice example by Nedgia

The Health and Safety Plan 2021–23 allowed Nedgia to make relevant changes to its safety culture and its management. It also has a significant impact on contractor companies since Nedgia does not distinguish between its own and external personnel regarding health and safety. This reinforces a strategy based on early detection and management with a focus on events and deviations that can lead to serious and fatal injuries. It aims at eradicating precursors to serious and fatal injuries, with more effective controls and the objective of zero accidents. It is focused on:

- Detecting and preventing risks from events that have the potential to cause serious or fatal injuries
- Investigation of the root causes of all inputs to establish effective action plans to anticipate situations with a high potential for severity
- Generating a culture and shared awareness on the most important risks, with the leadership team involved to achieve greater operational discipline in the application of security measures.

9 — Appendices: additional case study examples

An accelerated pathway for women in the technical workforce Best practice example by GRDF

For several years, GRDF has pursued a policy to ensure women are represented as part of its technical workforce. With less women choosing a technical career, a framework to encourage their applications for technical roles was considered appropriate. GRDF has therefore deployed a recruitment technique called 'MRS' (recruitment methodology via simulation). This technique consists of establishing technical workshops, which allow us to identify the technical appetite of the candidate and the required skills which are crucial for those positions (rigour, precision, team spirit, sense of security and customer satisfaction). These workshops are evaluated by a manager and a HR officer to identify applicants who could integrate successfully into GRDF, either as a permanent employee or as an apprentice.



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Digital upskilling Best practice example by Italgas

For a successful digital transformation, people are key. To address this change, Italgas is promoting a new 'digital mindset'. We are pursuing a gradual development which starts with the capillary mapping of the digital skills in the company and continues with the identification of Italgas Digital Ambassadors. These Ambassadors – trained according to the 'train-the-trainer' model – have become responsible for the promotion of the company's digital transition. The company has also activated an extensive programme for the strengthening and acquisition of new skills (upskilling and reskilling) which, thanks to the active involvement of employees, has made it possible to significantly reduce the foreseeable rate of resistance to change and align it with the company's new digital identity.



IngegnerE, femminile plurale

Best practice example by Italgas

To reduce the gender gap in the technical and operational areas, traditionally occupied by men, specific recruitment sessions were dedicated to the search for female talent. The 'IngegnerE, femminile plurale' initiative – a pun that exploits the gender distinction of the Italian word for 'engineer' – searches for women with a master's degree in engineering (the faculties of Energy, Civil, Environmental Management). The success of this initiative has already led to the employment of 35 female engineers who are working in engineering, territorial technical services, investments, plants, and commercial development.



Committed to employees' knowledge and awareness of renewable gas

Best practice example by Nedgia

Nedgia supports continuous education and training of its employees, with an average of 13 courses per employee per year, and more than 32,000 hours of training annually. It is also committed to renewable gas and the circular economy and has extended its commitment to training plans, consolidating a specific programme on sustainability and environment which includes six webinars and ten training sessions. Of 300 spots available for the Renewable Gas and Environment webinars, registration achieved 100%, with 85% attendance and a weighted average satisfaction of 8.8 / 10.

Committed to employee training

Best practice example by Italgas

Italgas developed Share View, augmented reality viewers which allow field operators and remote experts to share the same view through a video call. In cases of maintenance failure or emergency service, the remote expert can provide support to operators in the field, providing instructions and guidance through augmented reality. Thanks to the introduction of these viewers, most complex cases may be recorded, creating training opportunities for new technicians, fostering generational turnover, and enabling a more efficient allocation of human resources.



9 — Appendices: additional case study examples

Nurture safety cultures

Best practice examples by Italgas and Galp Gás Natural Distribuição (GGND)

The ‘safety walks’ are events organised by Italgas in different Italian cities, during which the company’s management shares updates on the implementation of significant practical activities with operating staff, and addresses and comment on safety issues. Training programmes on the dangers arising from operational activities, in addition to specific awareness-raising actions that involve all operating personnel, are primary tools for improving the health and safety performance of employees. Four events were organised in 2019.

At GGND, we are committed to the prevention of incidents and a culture of safety. To that end, a bi-monthly leadership meeting was created to debate and analyse safety performance. Site visits form part of the agenda and present the opportunity for senior management to observe the day-to-day activities of the organisation, including how tasks are performed and the inherent risks involved. This promotes an attitude of compliance with safety measures.

Modernisation and automation process of natural gas metering control stations across the distribution network

Best practice example by Distrigaz Sud Rețele

In 2019, Distrigaz Sud Rețele started an extensive modernisation and automation process of natural gas metering control stations across the distribution network. The project was developed over three years and includes nine sector control stations across seven cities, with an average investment of €700,000 per station. The purpose of this investment is to permanently monitor the parameters of the distribution network. This investment ensures operational safety of the network. At the same time, it also contributes to the traceability of the necessary data in the process of monitoring and calculating technological consumption. The redesign process of the stations will continue for the period 2023–27, with the modernisation and automation of more than 30 measuring control stations (an investment of approximately €21 million).



9.2.2 Provide quality service and a safe supply of gas that meets the needs of our customers

Accessibility of our services to vulnerable persons

Best practice example by GRDF

GRDF's objective is to ensure that every customer receives the same level of service. Since October 2016, a designated customer support hotline has been available to those who are deaf or hard of hearing. From GRDF's website, customers can be connected to a sign-language interpreter or an automatic and instantaneous speech transcription, thus enabling a dialogue with a customer advisor. By implementing this service, GRDF acted swiftly and responsibly, two years before it became law.

New customer relationship model finalist in DEC Association Awards 2020 (Best Customer Journey category)

Best practice example by Nedgia

Nedgia implemented a personalised, real-time, intuitive, digital, and bi-directional communication system, utilising push messages. This has changed the way we interact with our customers as we inform both them and the installer of the key moments in the gas connection process. This new customer relationship model developed and implemented by Nedgia was a finalist in the DEC (Development of Customer Experience) awards in 2020, and was rated very positively by 75% of customers. The DEC Association is the highest standard in its field in Spain and has more than 140 leading brands as partners. Nedgia uses communication as an essential driver of business improvement.

Supporting vulnerable groups within society through the CIVIGAZ programme

Best practice example by GRDF

Since 2015, GRDF supports the fight against energy poverty through the deployment of a civic service mission named CIVIGAZ, in cooperation with FACE (Actions Against Exclusion Foundation) and OMEGA. As precarity and security are often linked, volunteers tackle issues including home advice on the safety of indoor gas installations and eco gestures. This way, CIVIGAZ participates in the detection of energy insecurity while also raising awareness.

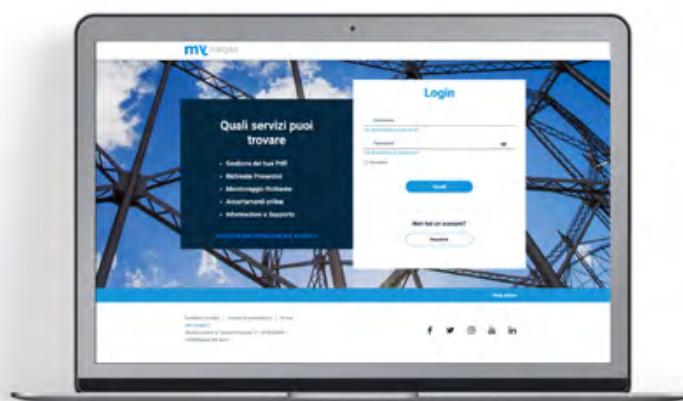


9 — Appendices: additional case study examples

Improving customer experience through the rollout of smart meters and the development of apps for end-users

Best practice example by Italgas

With the goal of improving the customer experience and of delivering an ever more efficient service, Italgas's Digital Factory has developed several services. The most popular of these is MyItalgas, through which the customer can ask for a price quotation or request appointments for our services, verify their delivery point's status, request meter-readings, and have meters repaired or replaced. The platform also allows the customer to file complaints, make enquiries, and resolve issues thanks to more than 100 website FAQs. This project complements the digitalisation of the grid and the massive rollout of smart metering technologies, through which Italgas currently has smart meters installed for over 90% of its residential end-users, and 100% of its industrial customers.



Smart Metering (NB-IoT) – Pilot Project LisboaGás

Best practice example by Galp Gás Natural Distribuição (GGND)

Between 2019 and 2020, GGND developed a proof of concept (PoC) application of smart gas meters (SM). Given the Narrowband-IoT (NB-IoT) communication technology applied, this pioneering project was the first smart gas metering project with this type of wireless IoT solution in Portugal. The pilot project was deployed in Lisbon by GGND (Lisboagás), and by NOS, as the communications operator. During the project, 100 smart meters were installed in the premises of non-residential consumers. The project's main goal was to test and evaluate the performance of the chosen IoT solutions. It also assessed their technical and economic viability through a cost-benefit analysis, which was to be submitted to the regulatory authority for cost recognition, thus enabling a possible national roll-out.



9.2.3 Strive to impact society positively in the territories where we operate

Light Mobility Project – Hydrogen Bicycle

Best practice example by Galp Gás Natural Distribuição (GGND)

In 2019, the Municipality of Aveiro (Portugal) created the ‘Aveiro Urban Challenges’. This initiative, designed for start-ups, scale-ups and R&D institutions aimed to reward the best ideas and solutions to address urban challenges. As a mentor of the initiative, GGND proposed the challenge of developing a hydrogen-powered bicycle. The goal was to contribute to sustainable urban mobility while promoting hydrogen as an energy solution and stimulating the application of emerging technologies.

The winner of the challenge was the PEMFC Sudoe Bike project, led by the University of Cantabria/Apria Systems in Spain. The prototype allows two different uses: personal mobility (tourist use, bike sharing programmes, fast delivery services, among others) and adaptation of the prototype for urban waste collection (industrial partnership with Veolia).

‘I like energy’ – Meeting with secondary schools

Best practice example by Italgas

In partnership with Confindustria, in 2018, Italgas launched the touring project, ‘Energia mi piace’ (‘I like Energy’). This was designed to show young people – with a focus on secondary school pupils – the impact of simple actions such as pressing a switch or lighting the hob at home, as well as raising their awareness about the careful use of resources. The training activity also provided information to help them understand what we can expect in terms of the future of energy and what role gas infrastructures can play in energy decarbonisation. This helps make the younger generations more aware of the strategic options available to Italy in terms of energy supply. In this way, pupils were introduced to discussions that would otherwise be restricted to technicians and specialists in the sector. Launched for the first time in Turin, the programme continued during the 2018–19 academic year in Sardinia. It continued into the 2019–20 academic year in Southern Italy, with sessions for middle school children, and was extended to certain municipalities in the so-called ‘seismic crater’ in 2019, covering such topics as safety in the event of an earthquake.



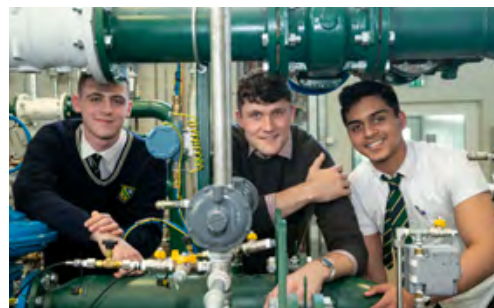
9 — Appendices: additional case study examples

Supporting STEM education

Best practice example by Gas Networks Ireland

Gas Networks Ireland's involvement in the community varies from assisting charitable and voluntary groups to supporting a wide range of educational initiatives. Our core programmes focus on three key areas of social inclusion: education, employability, and accessibility. We support several impactful initiatives across Ireland, promoting Science, Technology, Engineering and Maths (STEM), literacy, employability, and the development of life skills. As an engineering organisation, STEM skills are at the core of our business, and we aim to inspire an interest in STEM subjects amongst the workforce of the future.

Gas Networks Ireland has partnered with Junior Achievement Ireland, a globally recognised educational non-profit organisation, to deliver science education to young people across Ireland for the past ten years. In all, 25,000 young people have been introduced to science through initiatives designed to encourage students to continue with STEM through second and third level education. Our flagship STEM programme 'Energize' incorporates modules on energy awareness and safety in the home. These are two of the company's core business messages. In addition, 8,000 students received a wide range of educational programmes over the past ten years thanks to volunteer mentors from within the company. These volunteers helped young people of all ages to understand fully the important role that education plays in shaping their futures while also equipping them with the skills, knowledge, and confidence they need to succeed in the changing world of work.



Innovation in our cooperation with territorial ecosystems

Best Practice example by GRDF

To strengthen its territorial roots and its contribution to local value creation, GRDF, accompanied by Ouishare, is revisiting its participation in local dynamics and territorial ecosystems. Ouishare is an international network which deciphers societal changes, connects unexpected ecosystems, and conducts local experiments. With its help, GRDF further develops its knowledge of emergent ecological and social trends and local actors and is advised on the new forms of local cooperation which could be imagined around worthwhile projects for the territories. GRDF and Ouishare work together to create a community to share this change of practice within the company.

ouishare

Supply chain engagement, the case for green logistics

Best practice example by Italgas

Italgas is aware that a strong sustainability positioning cannot ignore the impact of the activities along the value chain. Therefore, Italgas has promoted initiatives to engage suppliers and contractors while raising awareness on sustainability topics. In 2020, Italgas held a Virtual Convention aimed at presenting its suppliers Italgas's purchasing model and vision. A survey on sustainability issues has been sent to more than 245 key suppliers (with 80% participation) to identify best practices and areas of improvement. Sustainability has also been included in the rating evaluation during the supplier selection phase. In 2020, each supplier was required to complete a questionnaire indicating action plans or projects to improve ESG impacts. This initiative established a more accurate assessment of suppliers' solidity in their approach to ESG criteria by attributing a specific "Sustainability Index" rating for the first time. Italgas also constantly monitors the Environmental, Social and Governance impact of its entire supply chain, and strives for an increase in the percentage of suppliers holding additional ISO certificates.



Green logistics project

Best practice example by Italgas

In 2020, Italgas launched a reorganisation of its logistics system, identifying opportunities for digitisation and improved sustainability. The project impacted three separate areas of the logistics chain:

- **Transport:** a new central warehouse was built in a strategic location, where all materials provided by any supplier are delivered and stored, according to the needs of the Territorial Poles. This rationalisation started by means of tender, involving the leading suppliers for transport. In the technical scoring and final assessment, significant weight was assigned to sustainability and fostering the use of low emissions vehicles. This reorganisation of logistics combined with the transport tender will result in significant CO₂ emission savings.
- **Handling vehicles:** the current fleet of traditional handling vehicles will be replaced by a new all-electric rental fleet using next-generation batteries, inducing a reduction in emissions and increasing efficiency.
- **Shelving:** while restructuring numerous Italgas offices, shelving has been standardised by opting for products of higher quality, and higher technical and sustainability standards.

9 — Appendices: additional case study examples

Scuola Enrico Mattei

Best practice example by EDA THESS

At the core of EDA THESS's strategy is leveraging expertise and the dissemination of knowledge to optimise distribution services throughout the country. 'Scuola Enrico Mattei' includes gas educational laboratories at EDA THESS's facilities in Thessaloniki and Thessaly.

The laboratory is a real simulation of the gas distribution network, both upstream and downstream of distribution stations. It simulates hydraulic installations across all pressure levels, steel and polyethylene pipeline, cathodic protection device, metering and pressure regulation stations, safety devices, household reducers and natural gas meters, as well as the internal installation for the final consumer.



Interested parties and stakeholders of the natural gas value chain are trained periodically, both theoretically and practically in natural gas operation and maintenance activities, safe execution of works, safe use of natural gas and technical specifications. EDA THESS also offers integrated e-training courses. In 2020, EDA THESS was the first company in Greece to provide training programmes in all activities of CNG technology to more than 250 interested parties.

9.3 Governance commitments

9.3.1 Practise fair and transparent advocacy and prevent corruption

Ethical Charter

Best practice example by GRDF

To achieve the ambitions of GRDF's business project, in a demanding environment, GRDF requires its customers, employees, partners and other stakeholders to place their trust in them. From this perspective, an ethical approach guides their professional practices. Four fundamental principles apply to all GRDF executives and employees, and stakeholder relations: acting in compliance with the laws and regulations; behaving with honesty and promoting a culture of integrity; showing loyalty with stakeholders; and respecting others and their dignity. Each year, GRDF employees must complete a questionnaire to test their knowledge about our Ethical Charter.



9.3.3 Enhance dialogue with stakeholders

WWF France and GRDF partnership

Best practice example by GRDF

Since 2018, GRDF has been working with WWF France to define the conditions for the sustainable development of biomethane in France, to enable this solution to be deployed optimally and contribute to the energy transition. This partnership aims at promoting the development of sustainable agricultural practices which can provide the organic raw materials needed for methanisation. Simultaneously, the partnership identifies how such practices can contribute to an agro-ecology model focusing on fertilisers and soil health. The conditions for sustainability of agricultural methanisation are defined in the report: 'Agricultural anaerobic digestion: what are the conditions for the sector's sustainability in France?', released in March 2020. To help answer this question, WWF France and GRDF brought together research institutes, farming and biomethane representatives, institutions and associations working for the environment or active in the field of renewable energy.

Engagement with Consumer Associations

Best practice example by Italgas

In March 2018, Italgas and 19 Consumers Association members of the National Council of Consumers and Users (the Italian CNCU) signed a Memorandum of Understanding (MoU) which lays the foundation for a mutual commitment: Italgas organises information sessions dedicated to the Consumers Associations on the Group's activities and manages the reports from the associations through dedicated channels. Consumer Associations support the development of Italgas's operating activities. In 2019, the Italgas Digital Factory in Milan hosted three local meetings in the areas of new methanisation, and three virtual meetings with a local manager of the Consumer Associations in Sardinia, Calabria, and Sicily.



9 — Appendices: additional case study examples

Creation of the association France Gaz Renouvelables **Best practice example by GRDF**



Renewable gases, starting with anaerobic digestion, are at the crossroads of the future challenges of agriculture, territorial integration, energy and climate. The scale of the decarbonisation ambition requires dialogue between stakeholders across relevant sectors: this is the mission of the association France Gaz Renouvelables. It brings together and aligns actors to build a collective understanding and voice. Specifically, around an agricultural focus (FNSEA, AAMF and APCA), it brings together major representatives of gas infrastructures (GRDF, GRT gas), the Territories (FNCCR), think tanks (France Biomethane) and the technical sector (ATEE Biogas Club).

Dialogue and engagement with stakeholders **Best practice example by Nedgia**

Nedgia is involved in various stakeholder engagement initiatives, dedicated to specific topics such as: renewable gases, environmental regulation, health and safety, emission reduction, infrastructure, customers, and sustainable mobility. The company is committed to the development of the territories in which Nedgia operates and works closely with both national and local installer associations promoting business opportunities, upskilling, and reskilling. Nedgia also facilitates networking amongst stakeholders themselves.

Examples include:

- training sessions about CNG (technical) and sustainable mobility organised with AGREMIA (regional installers' association) and CEIM (business owner association, regional scope).
- grants for specialised technical studies with AGREMIA.
- networking session in CONAIF Congress promoted by Nedgia (national installers' association).

10 — Glossary of terms

Anaerobic digestion: Anaerobic digestion is the process whereby biogas and biomethane are produced. During this process, animal and/or plant organic matter is decomposed by micro-organisms. This produces a gaseous mixture (biogas) that is saturated with water and composed of 50 to 65% methane. This biogas can be purified to attain the same quality as natural gas. It is then called biomethane.

Biomethane: Biomethane is the fuel produced by anaerobic digestion or gasification of biomass. It is made from organic matter or woody biomass. Biomethane can be directly injected into the grid.

(Bio)NGV: (Bio) natural gas vehicles run either on natural gas or biomethane. (Bio)NGVs can be used for light-duty or heavy-duty applications, e.g. buses, agricultural vehicles etc.

Carbon dioxide (CO₂): Carbon dioxide is a powerful greenhouse gas. It is naturally part of the air we breathe. However, human activities like burning of fossil fuels and deforestation have led to an increase in CO₂ in the air that contributes to climate change.

Carbon emissions: Carbon emissions are created when gases are released into the air from activities like burning fossil fuels for energy. It includes gases like carbon dioxide and methane. This is because they both contain carbon. 'Carbon emissions' is sometimes used as shorthand to describe all greenhouse gases.

Carbon footprint: It measures the carbon emissions linked to a particular activity or product. It includes emissions involved in all stages of making and using a product or carrying out an activity. The lower the carbon footprint the less a product or activity contributes to climate change.

Carbon leakage: This is when one country's carbon emissions are lowered, and it results in another country's emissions being increased. This can happen when production moves from one country to another. The overall result is that the world as a whole does not experience a decrease in emissions.

Carbon neutral: This means that the amount of greenhouse gas released into the air equals the amount removed from the air.

Circular economy: This type of economy uses a more efficient and low-carbon approach. It ensures that we reduce and reuse products and materials so that less waste is produced.

Decarbonisation: It refers to all measures through which a business sector, or an entity – a government, an organisation – reduces its carbon footprint, primarily its greenhouse gas emissions, carbon dioxide (CO₂) and methane (CH₄), in order to reduce its impact on the climate.

Distribution System Operator (DSO): According to Article 2 of Directive 2009/73/EC, a gas DSO is a natural or legal entity that carries out the function of distribution and is responsible for operating, ensuring the maintenance of, and, if necessary, developing the distribution system in a given area. Where applicable, it is also responsible for its interconnections with other systems, and for ensuring the long-term ability of the system to meet reasonable demands for the distribution of gas.

Emissions: These are gases or particles released into the air that can contribute to global warming or poor air quality.

Greenhouse Gas Emissions/GHGs: Gases that trap heat from the Earth's surface causing warming in the lower atmosphere and slowing down loss of energy from Earth. The major greenhouse gases that cause climate change are carbon dioxide, methane, and nitrous oxide.

Green hydrogen: Hydrogen produced by splitting water by electrolysis. This produces only hydrogen and oxygen. We can use the hydrogen and vent the oxygen to the atmosphere with no negative environmental impact.

Hydrogen energy: it involves the use of hydrogen and/or hydrogen-containing compounds to generate energy to be supplied to all practical uses needed with high energy efficiency, overwhelming environmental and social benefits, as well as economic competitiveness.

Methane/CH₄: This powerful greenhouse gas comes from sources like agriculture, fossil fuels and waste. It can be used as a fuel. For example, natural gas is mostly methane.

Net zero emissions: This refers to achieving an overall balance between greenhouse gas emissions produced by human activity and greenhouse gas emissions taken out of the atmosphere.

Power-to-Gas: Power-to-Gas is a process to produce renewable hydrogen.

Sustainable Development Goals (SDGs):

These are goals (17 in all) developed by the United Nations to address the urgent environmental, political, and economic challenges facing our world. Their ultimate goal is to end poverty, while protecting the planet and building economic growth. The 17 goals are: 1. No poverty, 2. Zero hunger, 3. Good health and well-being, 4. Quality education, 5. Gender equality, 6. Clean water and sanitation, 7. Affordable and clean energy, 8. Decent work and economic growth, 9. Industry, innovation and infrastructure, 10. Reduced inequalities, 11. Sustainable cities and communities, 12. Responsible consumption and production, 13. Climate action, 14. Life below water, 15. Life on land, 16. Peace, justice and strong institutions, and 17. Partnerships to achieve the goals.

GD4S: who we are

Gas Distributors for Sustainability (GD4S) brings together the seven largest gas Distribution System Operators (DSOs) in France, Greece, Italy, Ireland, Portugal, Spain and Romania. 86% of gas vehicles in the EU are used in these seven countries.

Our convictions

- Biomethane makes natural gas renewable.
- Biomethane should be clearly incentivised in reaching the EU's renewable energy objectives. Other renewable gases such as hydrogen need to be supported.
- Gas mobility improves air quality.
- Natural gas is a sustainable alternative fuel for transport. 86% of NGVs in the EU are in use in our respective countries.
- Gas networks to distribute and store renewable energies already exist and are very flexible.
- Innovative gas solutions and existing gas distribution infrastructure must be better incorporated in the European decarbonisation vision.
- Gas offers efficient and affordable technological solutions.
- The introduction of renewable gas objectives would accelerate the greening of the gas network with concrete impacts on several sectors (heating, cooling, and transport).
- Gas is the best alternative fuel for a sustainable economy. Natural and renewable gases can enable a gradual and smooth transition to a low-emission society.



GD4S: who we are



Distrigaz Sud Retele
operating in Romania

1.9 million delivery points
20,200 km of network
860 gas vehicles in use in Romania



Galp Gás Natural Distribuição
operating in Portugal

1.1 million delivery points
13,000 km of network
503 gas vehicles in use in Portugal



Nedgia
operating in Spain

5.4 million delivery points
54,000 km of network
30,000 gas vehicles in use in Spain



Gas Networks Ireland
operating in Ireland

706,000+ delivery points
12,140 km of network
80 gas vehicles in use in Ireland



GRDF
operating in France

11 million delivery points
201,716 km of network
23,000 gas vehicles in use in France



Italgas
operating in Italy

7.7 million delivery points
72,700 km of network
971,830 gas vehicles in use in Italy



Gas Distribution Company Thessaloniki – Thessalia S.A. (EDA THESSE)
operating in the Regional Unit of Thessaloniki and the Region of Thessaly, Greece

406,000 delivery points
2,750 km of network



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