

Financial disclosure on climate change 2019  
Change today, for the climate tomorrow



## Company profile

Snam is one of the world's leading energy infrastructure operators and one of the largest Italian listed companies in terms of capitalization. The company's sustainable and technologically advanced network guarantees security of supply, enables energy transition and promotes development in the areas in which it operates. Through its international subsidiaries, it operates in Albania (AGSCo), Austria (TAG, GCA), China (Snam Gas & Energy Services Beijing), France (Terēga), Greece (DESFA) and the United Kingdom (Interconnector UK). Snam is also one of the main shareholders of TAP (Trans Adriatic Pipeline), the final section of the Southern Energy Corridor.

The company has the most extensive transmission network among European peers (over 41,000 km including international activities) and greatest natural gas storage capacity (approx 20 billion cubic meters, including international activities). It is also one of the main regasification operators in Europe, an activity it carries out through its Panigaglia terminal and its stakes in the Livorno (OLT) (\*) and Rovigo (Adriatic LNG) plants in Italy and in the Revithoussa (DESFA) plant in Greece, with a total pro rata regasification capacity of around 8.5 billion cubic metres per year.

As part of its €6.5 billion plan that runs to 2023, Snam is investing €1.4 billion in the Snam Tec project (Tomorrow's Energy Company) which aims to reduce the environmental impact of its activities through innovation (with the aim of a 40% reduction in methane emissions by 2025 and direct and indirect CO<sub>2eq</sub> emissions by 2030 and contributing to decarbonisation through its new energy transition businesses: sustainable mobility (distributors of compressed natural gas – CNG and bio-CNG – and liquefied natural gas – LNG and bio-LNG, Small-scale LNG), biomethane infrastructure from organic waste and agricultural and agro-industrial waste, energy efficiency services for apartment buildings, the public administration and industry. Snam was the first European company to trial the introduction of hydrogen mixed with natural gas into its network.

The corporate business model is based on sustainable growth, transparency, the development of talent and diversity and the protection and social development of the areas through the Snam Foundation.

(\*) The acquisition of a 49.07% share of the OLT regasification terminal was completed on 26 February 2020.

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# Snam's report



## THE ANNUAL REPORT

It provides a comprehensive view both on the financial performances through the Directors' Report, the Consolidated Financial Statement, the Statutory Financial Statement and on the non-financial ones through the Non-Financial Statement drafted according to the 254 Legislative Decree.



## THE CORPORATE GOVERNANCE REPORT

It provides detailed information about the company, its governance system and structure, the ownership structure, the internal control and risk management system and related topics



## THE REMUNERATION REPORT

It describes the company's remuneration policy of Directors and Executives specifying the goals, the involved bodies, the procedures for its adoption and implementation in addition to the remuneration paid.



## THE SUSTAINABILITY REPORT

It describes performances and future goals regarding the environmental, social and governance topics (ESG), strengthening the relationship and collaboration with a wide audience of stakeholders.

# Financial disclosure on climate change

## THE REPORTING PROCESS

Snam has long started an integration track of its reporting processes because “**integrated reporting means integrated thinking**”. This approach has allowed a comprehensive and integrated overview on all the stakeholders and shareholders demands, offering a wide, transparent and responsible corporate disclosure leading to a complete view on the activities, performances and challenges which Snam faces today.

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This report describes the Company's approach to climate change and serves as a statement of its commitment to guiding its choices and initiatives towards a sustainable energy transition, towards achieving national and European decarbonisation targets. In particular, this document is drafted in accordance with the recommendations of the “**Task Force on Climate-related Financial Disclosures**” (TCFD) of the Financial Stability Board (FSB) and describes: the global energy and climate scenarios taken into consideration by the Company; the strategy developed ad hoc to respond to the needs arising from the scenarios analysed; the risks and opportunities related to climate change, with its impacts and management approaches; the roles and responsibilities of the organization for the management of climate change issues; the performance and climate objectives set in the medium to long term.

# 2019

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# Letter to the shareholders and stakeholders



**Luca Dal Fabbro**  
Chairman



**Marco Alverà**  
Chief Executive Officer

## Dear Stakeholders,

Snam has confirmed its role in energy transition through the new 2019-2023 Strategic Plan, renewing and strengthening commitments and objectives striving for an increasingly decarbonised business and world. This document, created after taking the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) of the Financial Stability Board of which Snam is a member on board, represents a transparent commitment to our stakeholders in the dialogue on climate change, and it is an important opportunity for illustrating our business model and our governance aimed at long-term sustainable growth.

We set ourselves challenging targets of reducing methane emissions by 40% by 2025 and, for the first time, of reducing greenhouse gas emissions by 40% by 2030 (Scope 1 and 2 emissions). The definition of the target for reducing CO<sub>2eq</sub> emissions is one of the main innovations of the Company's four-year strategy, a demonstration of our desire to take a leading role in energy transition, on a journey in line with the most important international climate agreements and with the EU-defined targets, not only through the continuous growth of our business, thanks, for example to the progressive phasing out of coal, but also, and above all, through the development of green gases, such as hydrogen, biomethane and synthetic methane.

In effect, the new Strategic Plan with over 20% of investments to 2023, equal to €1.4 billion (+65% compared with the previous year), destined to the SnamTec project - Tomorrow's Energy Company, very clearly reinforces Snam's undertaking to increase our presence

in the biomethane sector, confirms our commitment to sustainable mobility and energy efficiency and be among the pioneers in the use of hydrogen as the clean energy source of the future.

Snam continues to promote the development of the production of biomethane, a renewable and sustainable source that is flexible as well and can be programmed allowing high effectiveness and efficiency thanks to the use of existing infrastructures with an obvious benefit from the point of view of the energy system end users. The ultimate goal is to develop a vertical awareness of the industry, increasing skills in the management and operating of plants both in the agricultural biomethane supply chain and in the FORSU chain (organic fraction of municipal solid waste). This project includes the acquisition of IES Biogas, a subsidiary of Snam and the leading company in the design and construction of biogas and biomethane facilities in Italy and abroad, and Renewaste, one of the largest companies operating in Italy in biogas and biomethane infrastructure.

With regard to sustainable mobility, Snam has continued to develop agreements and partnerships with the goal of supporting the increase in the Italian network of compressed natural gas and liquefied natural gas distributors. Agreements were signed with Tamoil in March 2019 and with IP in July for the construction, respectively, of 5 and 26 new natural gas supply facilities in Italy and on 31 December another 50 CNG/L-CNG, biomethane and bio-LNG refuelling stations were contracted.

Within the Group we are also improving the efficiency of processes by promoting a series of energy efficiency initiatives aimed at reducing environmental impact, increasing the use of renewable energy sources and



purchasing green electricity (+55% by 2030), installing highly efficient gas technologies for the generation of heat and new cogeneration/trigeneration power plants, as well as improving the energy efficiency of buildings. In recent years energy efficiency has become so vital that it has even become a new business sector. We operate in this area through our subsidiary TEP Energy Solution and we have implemented our role as a leader by gaining control of TEA Servizi, an ESCO (Energy Service Company) active in the design of thermohydraulic and electric plants and in the offering of energy saving solutions for public and private entities. The Business Unit Energy Transition, dedicated to new green activities (biomethane, sustainable mobility and energy efficiency) was established for this purpose. In addition, aware of the need nowadays more than ever to all find new solutions together that can accelerate the decarbonisation process, we strongly believe in the potential of hydrogen as a clean energy source. For Snam, 2019 was "the year of hydrogen": we created the Business Unit of the same name, dedicated to the development of the business of this new energy source and, in April, we launched the first trial in Europe of a mixture of natural gas and 5% and then 10% hydrogen injected into the gas transportation network. Snam also organised The Hydrogen Challenge on 10 and 11 October at Lanterna di Fuksas in Rome, during which the potential of hydrogen as a clean energy source was illustrated. It was attended by institutions, associations and around 70 companies from throughout the world. As evidence of the effectiveness of the efforts underway to reduce emissions and climate risks, Snam is on the Climate Change A - List, confirmed among the companies recognised globally by the CDP (Carbon Disclosure Project)

for its commitment to fight against climate change. Snam also joined the CDP supply chain programme for the first time, the CDP programme aimed at the involvement of its supply chain in the climate change questionnaire. The Company's participation in and the results obtained from the CDP Climate Change questionnaire and in other sustainability indices (DJSI, FTSE4good, Vigeo), are further evidence of Snam's focus on environmental, social and governance (ESG) sustainability developed over the years. We hope that reading this document, in its second edition, will make it even more obvious to our stakeholders how serious we at Snam are when it comes to the fight against climate change.

Snam's commitment will continue in 2020 with strengthening a corporate model that is sustainable for all ESG factors, starting with those that have an impact on the climate and the environment, and defining a virtuous cycle in the direction of climate neutrality by 2050.

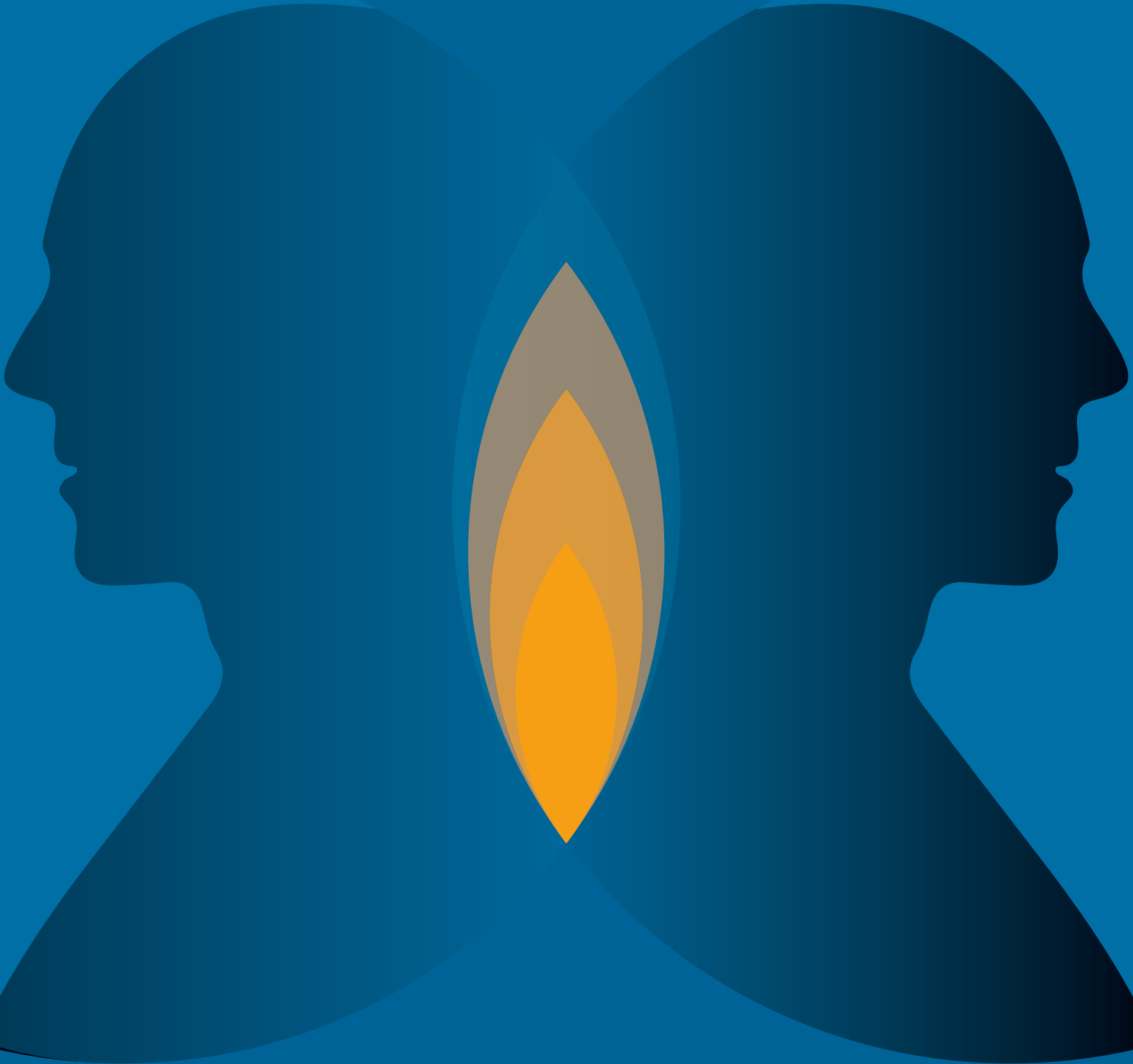
18 March 2020

The Board of Directors

The Chairman

The Chief Executive Officer

# Executive summary



This document represents a transparent commitment to Snam's stakeholders in the discussion on climate change. It's an important opportunity to illustrate the Company's approach to directing its strategy in the context of energy transition, as well as its commitment to reaching the energy and climate goals defined at a European level.

This document has been prepared in accordance with the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) of the Financial Stability Board (FSB) and describes the global energy and climate scenarios, the scenarios and strategy adopted by Snam to deal with energy transition, the model adopted for the management of risks and opportunities and related impacts, the roles and responsibilities of the organisation for the management of climate change, performance and climate goals set for 2025 and 2030.

## THE DEVELOPMENT OF THE ENERGY AND CLIMATE SCENARIO

This chapter describes the transformation of the Italian energy system, with special reference to the role of natural gas, in the light of the possible developments of the energy and climate scenario globally, in line with the European decarbonisation strategy and with the internationally-defined agreements for slowing down the rise in temperatures and limiting the effects of global warming.

In this context, different scenarios for gas supply and demand prepared by Snam over a time horizon to 2040 were presented: the **Business-As-Usual (BAU)** scenario, which projects current trends and features technological development based solely on economic merit, the **Centralized (CEN)** and **Decentralized (DEC)** scenarios, which, respectively involve growth of programmable renewable energies such as green gases, using existing gas infrastructure, and an even more rapid development of electric power and non-programmable renewable energy sources.

Based on these scenarios and, specifically the development scenarios, Snam demonstrates how, in the long-term, gas is no longer considered as a source of transition but, also thanks to the rapid development in future years of green and decarbonised gases, such as biomethane, synthetic methane and hydrogen, but as a pillar of a decarbonised world.

## A STRATEGY FOR THE FUTURE

This chapter illustrates Snam's business, developed taking into consideration the projections of the global energy scenarios, which aims to actively promote the use of gas as the best candidate to support non-programmable and difficult to store renewable electricity (such as wind and solar power) in the decarbonisation of the country.

For this reason, Snam's strategy, rolled out in the new 2019-2023 Strategic Plan, is based on three fundamental pillars: **improvement of the core business, internationalisation and leadership towards energy transition**. Snam actually believes that a strategy "aimed at the future" should, at the same time, guarantee continued growth both for the Group itself, nationally and internationally, and for the country.



## THE RISKS AND OPPORTUNITIES OF CLIMATE CHANGE

This chapter describes the risks and opportunities relating to the energy and climate scenarios that could affect the Company's business and that Snam evaluates to continue to operate sustainably in the long-term as well, directing its strategies and monitoring changes in the surrounding conditions.

The actual and prospective risks and opportunities associated with Snam's corporate strategy are identified, assessed and managed through the **ERM model** (Enterprise Risk Management), which integrates the risks and opportunities related to climate change. The risks identified through the ERM model are classified as **financial risks, operational risks, legal and non-compliance risks** and **strategic risks**, which, in turn include the risks related to climate change.

Snam identifies **transition risks** and **physical risks** under risks related to climate change. Specifically, the former includes **political and legal risks, technological risks, market risks, reputation risks**, while the latter include the risks due to **acute** or **chronic** phenomena. An evaluation has been carried out for each of these risks of the related impacts and appropriate measures have been identified that allow these impacts to be adequately managed.

## ROLES AND RESPONSIBILITIES FOR THE MANAGEMENT OF CLIMATE CHANGE

This chapter presents Snam's governance system which, among other things, has the task of overseeing ESG issues and, specifically, aspects related to climate change in accordance with the recommendations of the Task Force on Climate-related Financial Disclosures. The activities of the **Board of Directors (BoD)** and the **Chief Executive Officer (CEO)** who supervise the risks and opportunities related to climate change come into this category as well as those of **management**, aimed at ensuring the correct management of these aspects in carrying out business. Following its appointment and for its entire mandate, the BoD is informed with regard to climate change aspects and initiatives including through **board induction** sessions and it periodically oversees these aspects, assisted by different committees, including: the **Environmental, Social & Governance ("ESG") Committee**, the **Control, Risks and Related-Party Transactions Committee** and the **Remuneration Committee**. The management functions have specific responsibilities as part of climate change and report directly to the Chief Executive Officer, developing their activities in line with the Company's climate strategy.

## ACTING FOR TOMORROW

This chapter describes Snam's practical commitment to promoting decarbonisation, implemented through the monitoring and improvement of its performance and its targets for reducing climate-altering emissions and increasing energy efficiency.

Under the scope of the ambitious plan to reduce climate-altering emissions, rolled out in its Strategic Plan, Snam has set a target of reducing **direct (Scope 1)** and **indirect (Scope 2) CO<sub>2</sub>eq emissions by 40%** by 2030 compared with 2016, which will be achieved through strengthening the target previously set for reducing **methane emissions** which has changed from -25% to **-40%** compared with 2016 figures and the definition of a new target related to the use of **55% green electricity** by 2030.

In order to achieve these challenging targets, Snam has initially introduced specific **natural gas emission reduction** programmes, developed through the progressive implementation of best practices, that involve both the innovative and maintenance aspect of its infrastructures, and **energy efficiency** programmes, which include, among other things, the production of electricity from photovoltaic plants, purchasing green electricity, the installation of LED systems and the renovation of buildings.

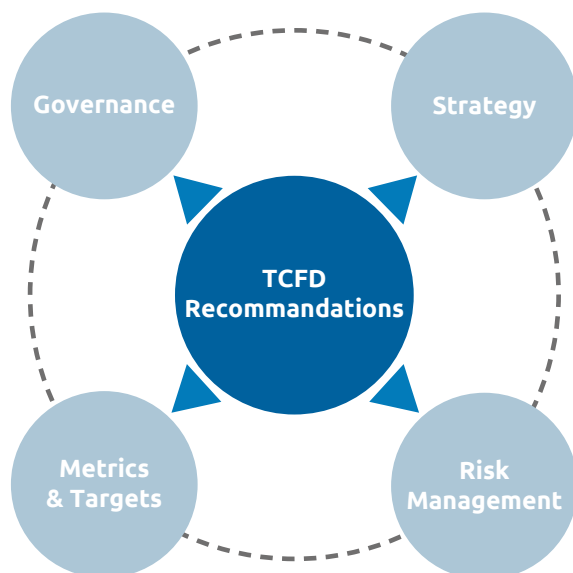
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## TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES

The Task Force on Climate-related Financial Disclosure, established by the **Financial Stability Board (FSB)** at the request of the **G20 (Group of 20) Finance Ministers and Central Bank Governors**, has the objective of developing voluntary policies consistent with the financial risks related to the climate, that can be used by Companies in providing information to investors, lenders, insurers and other interested parties.

The Task Force on Climate-related Financial Disclosure has defined **four areas of recommendation** with reference to the financial reporting related to climate change, applicable in all organisations, indiscriminately. The four areas and the recommendations are:

- **Governance:** declaring the governance model of the organisation in relation to the risks and opportunities related to climate change;
- **Strategy:** declaring the actual or potential impacts of the risks and opportunities related to climate change on the business, strategy and financial planning of the organisation;
- **Risk Management:** declaring how the organisation identifies, assesses and manages the risks related to climate change.
- **Metrics & Targets:** declaring the metrics and targets used by the organisation to assess and manage the significant risks and opportunities related to climate change.



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The adherence to the Task Force on Climate-related Financial Disclosures (TCFD) is our engagement to transparency

# The development of the energy and climate scenario

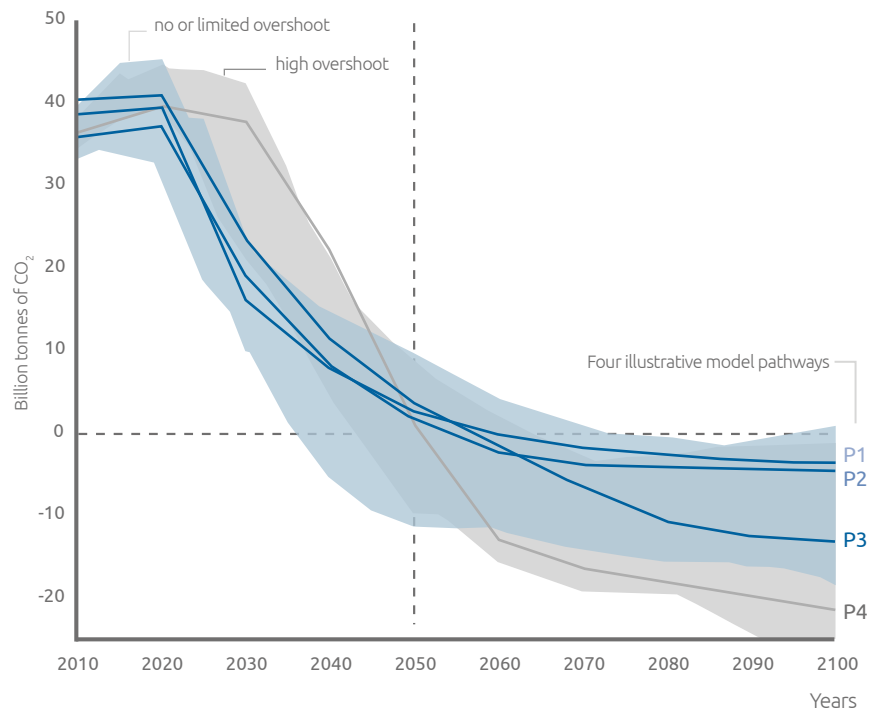


## Intergovernmental Panel on Climate Change (IPCC)

The companies that operate in the energy sector are facing constant challenges to guarantee the market's energy demands at accessible prices, using sources and processes leading in the direction of decarbonisation. Growing awareness of the effects of climate change on the planet have led organisations and authorities, both nationally and internationally, to ask themselves about possible strategies to slow down the increase in temperatures and limit the effects of global warming.

As confirmation of the importance of taking action in the fight against climate change, in 2018 the Intergovernmental Panel on Climate Change (IPCC) published the Special Report on the impacts of Global Warming of 1.5°C, which highlights the effects that global warming has already had on the planet and the importance of curbing the rise in temperatures to below 2°C. The report stresses how human activities have actually already caused global warming of around 1°C compared with pre-industrial times, with visible effects such as the intensification of heat waves and extreme weather events, a rise in sea levels and a decline in coral reefs, a decrease in biodiversity, a decline in Arctic sea ice and continental ice sheets, and the fall in agricultural crop yields. At current production rates, greenhouse gas emissions will cause a temperature increase of +1.5°C by 2040, exceeding +2°C in later years, with catastrophic effects for the planet. To curb global warming to values below 2°C it is anticipated the CO<sub>2</sub> emissions need to be decreased by around 25% by 2030 and reach zero around 2070. In an even more ambitious scenario with a maximum increase of one limited to 1.5°C, global CO<sub>2</sub> emissions, on the other hand, would fall by around 45% compared with 2010 levels by 2030, reaching the zero emissions target by around 2050.

### Global total net CO<sub>2</sub> emissions



In pathways limiting global warming to 1.5°C with no or limited overshoot as well as in pathways with a high overshoot, CO<sub>2</sub> emissions are reduced to net zero globally around 2050.

Source: "Summary for policy makers" of the "Special Report on the impacts of Global Warming of 1.5°C" prepared by the IPCC

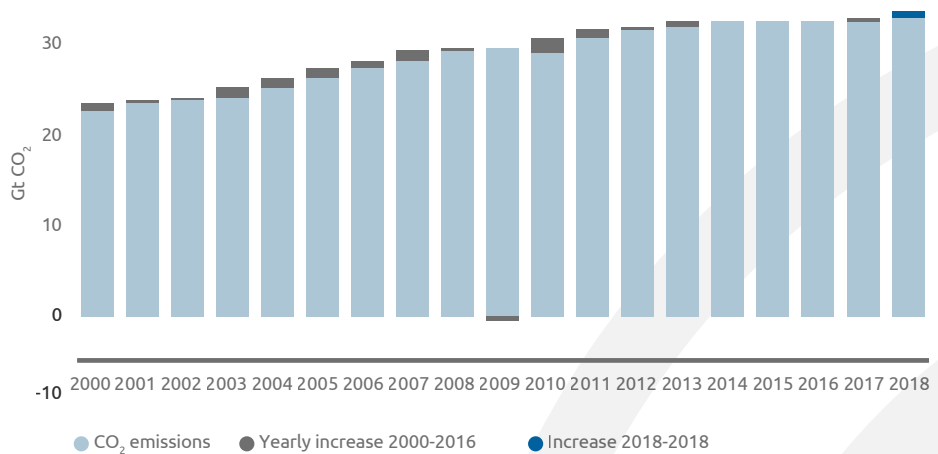


The route to take to achieve this goal requires global intervention in all areas of the economy and industry, which leads to rapid, forward-looking actions.

In this context, the energy-emissions duo represents the key factor for guaranteeing the sustainability of the planet because energy consumption represents the overwhelming part of the origin of CO<sub>2</sub> emissions.

The Global Energy & CO<sub>2</sub> Status Report, published by the International Energy Agency (IEA) shows how in 2018 global CO<sub>2</sub> emissions related to energy consumption grew by 1.7% compared with 2017, up further compared with the already consistent increase recorded between 2016 and 2017 (+1.4%), reaching an all-time high of 33.1 gigatonnes (Gt).

This trend was already confirmed by the World Meteorological Organization (WMO) which, in the Provisional Statement on the State of the Global Climate in 2019, highlighted how in 2018 the global atmospheric concentration of the three main greenhouse effect gases (CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O) reached record levels with the annual increase recorded higher than the average increase recorded in the last decade.



Source: Global Energy & CO<sub>2</sub> Status Report, IEA, 2018

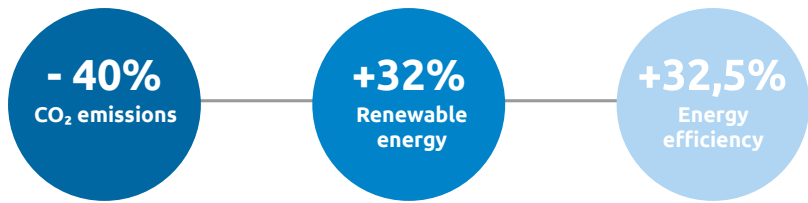
### EUROPEAN OBJECTIVES AND NATIONAL ENERGY STRATEGY

In 2018, the European Union expressed its commitment within the framework of the Clean energy for all Europeans programme by 2030 and the EU 2050 Climate Long-term Strategy, which aim not only to reduce CO<sub>2</sub> emissions (-40% by 2030 and -100% by 2050), but also increase the share of energy produced from renewable sources (+32% by 2030) and improve energy efficiency (+32.5% by 2030). In addition, as confirmation of the growing commitment to tackling climate-related problems, in December 2019 it presented the new European Green Deal, which summarises the collection of initiatives that the new European Commission team intends to adopt during its term in office (2019 – 2024) in order to set out on the journey to climate neutrality by 2050.

Following the direction taken by the European Union, the Italian government, like all EU countries, expressed its commitment to curb global warming. The new Integrated National Plan for Energy and the Climate (PNIEC), definitively approved in December 2019, aims to chart a course that makes the national energy system more competitive, secure and sustainable, operating in line with the decarbonisation targets defined at a European level.



## European targets for 2030



## THE ROLE OF GAS

With a view of setting sights on the ambitious European targets, and in the light of the national decarbonisation strategies already in progress, together with nuclear power and renewable energy plants, national gas can play a vital part in guaranteeing that energy demand is met in full. Natural gas features the possibility of being used to replace coal and oil, sources of high CO<sub>2</sub> emissions and to support non-programmable renewable sources such as wind power and solar power.

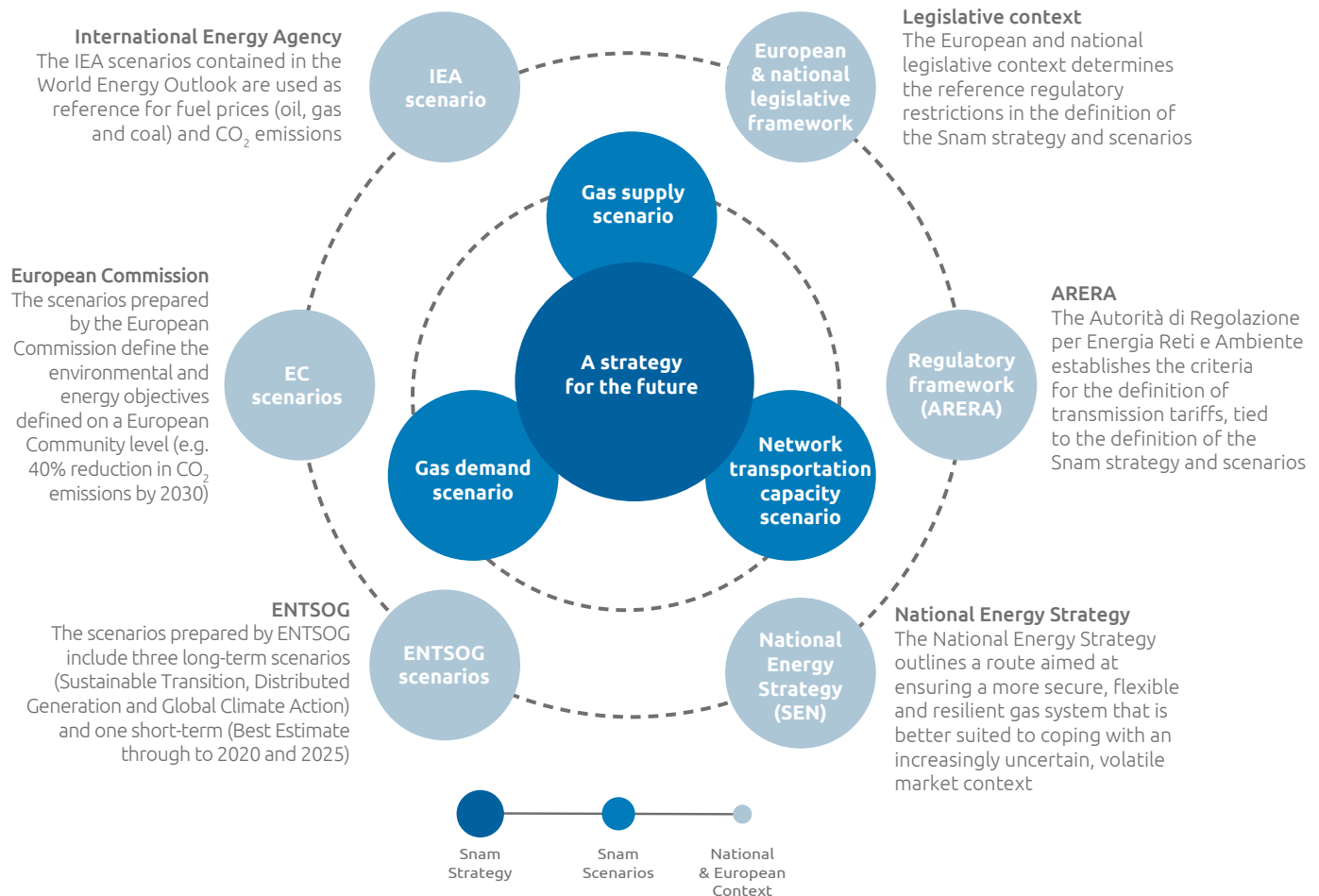
The entire gas sector and particularly all companies operating in the area of natural gas transportation, embrace the vision and targets set by the European Union, affirming their commitment by adopting the targets of European associations such as the TSO (Transmission System Operators) for electricity and gas (ENTSO-E and ENTSOG). ENTSOG (European Network of Transmission System Operators for Gas) is a European association, that Snam belongs to, established in 2009 to improve cooperation between national gas transmission operators (TSOs) throughout Europe in order to guarantee the development of a European transmission system in line with the EU energy and climate targets. Every two years ENTSOG and ENTSO-E prepare the Ten-Year Network Development Plan (TYNDP), which sets out the development strategies and plans of the European electricity and gas network which is drawn up based on national development plans. The TYNDP is based on scenarios developed jointly by ENTSOG and ENTSO-E which, in turn, are defined on the basis of calculations of community level energy and environmental policy scenarios and objectives and the scenarios developed by the International Energy Agency (IEA – World Energy Outlook), used as a reference for fuel prices and CO<sub>2</sub> emissions. There are three long-term scenarios included in the TYNDP, plus one short-term scenario:

- **Best Estimate 2020 and 2025**, reflects the current national and European policies and considers a sensitivity analysis with regard to the role of coal and gas in the energy sector to 2025;
- **National Trends**, considers the best knowledge available in the electricity and gas sector, in line with the National Energy and Climate Plans (NECP) 2021-2030 which all member states are required to draw up in order to comply with the energy and climate targets defined at a community level;
- **Global Ambition**, considers a centralised development of the energy system, in line with the main targets defined by the Paris Agreement at EU level, through the development of economies of scale that lead to a significant reduction in the costs of emerging technologies (e.g. offshore wind power) and the importation of energy from competitive sources;
- **Distributed Energy**, considers a decentralised development of the energy system, in line with the main targets defined by the Paris Agreement and at EU level, through the growth of the role of the end user in the energy market which guides carbonisation thanks to small scale solutions and a circular approach.

# Snam scenarios



In order to define its strategy, Snam develops scenarios of gas supply and demand taking into consideration the national and European legislative situations which are the backdrop for its operations. In addition to national and European energy policy targets, the scenarios developed take into account important information on prices, economic growth trends and the development of the availability of energy sources from the IEA, ENTSOG and ENTSO-E scenarios and from European Commission studies.



## THE GAS SUPPLY AND DEMAND SCENARIO TO 2030 AND 2040

With the goal of being able to achieve a share vision of possible Italian energy system developments, Snam and Terna have launched a partnership to define provisional energy scenarios<sup>1</sup> that has involved the main stakeholders of the energy industry, including institutional players, industry operations and research institutions, with the aim of gaining insights and suggestions that are useful for the purpose of the study. These scenarios were developed taking into consideration the Italian energy and environmental policy guidelines (PNIEC), the European ones (ENTSOG and ENTSO-E and EU ones to 2030 and 2050) and the global one (IEA scenario). There are essentially three scenarios used by Snam to calculate the gas supply and demand projections to 2040:

- **Business-As-Usual (BAU)**, which projects current trends and features

<sup>1</sup> Document describing the 2019 scenarios" prepared jointly by Snam and Terna in conformity with resolutions 654/2017/R/EEL and 689/2017/R/GAS.

technological development based on economic merit alone;

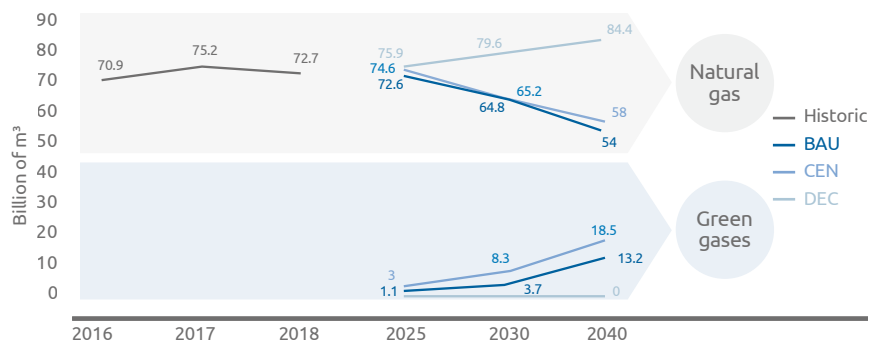
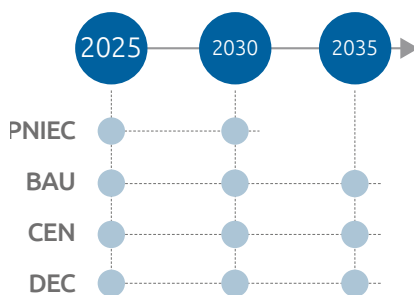
- **Centralized (CEN)**, which achieves the 2030 decarbonisation targets, renewable energy sources and energy efficiency quota and non-binding guidelines to reduce long-term CO<sub>2</sub> emissions by curbing consumption and the development of programmable renewable energies such as green gases, using existing gas infrastructures.
- **Decentralized (DEC)**, which achieves the 2030 decarbonisation targets, renewable energy sources and energy efficiency quota and non-binding guidelines to reduce long-term CO<sub>2</sub> emissions thanks to an even more rapid development of electric power and non-programmable renewable energy sources.

In addition to the BAU, CEN and DEC, the PNIEC scenario has also been defined based entirely on the Integrated National Plan for Energy and Climate, that enables the EU-defined targets to be reached.

These scenarios take into consideration a time frame of around 20 years (2018-2040) and highlight how the role of gas, also thanks to the gradual replacement of natural gas with green gases, is being confirmed in all the scenarios analysed in order to facilitate energy transition.

The development of the demand for gas by 2030 and 2040 remains around 70 billion cubic metres (or bcm) in all the scenarios analysed demonstrating a growing trend in the BAU scenario (+9.5% by 2030 e +16.2% by 2040 compared to 2018) and CEN (+1.2% by 2030 and +5.3% by 2040) and slightly downward in the DEC scenario (-5.6% by 2030 and -7.5% by 2040).

### Scenarios / time frame



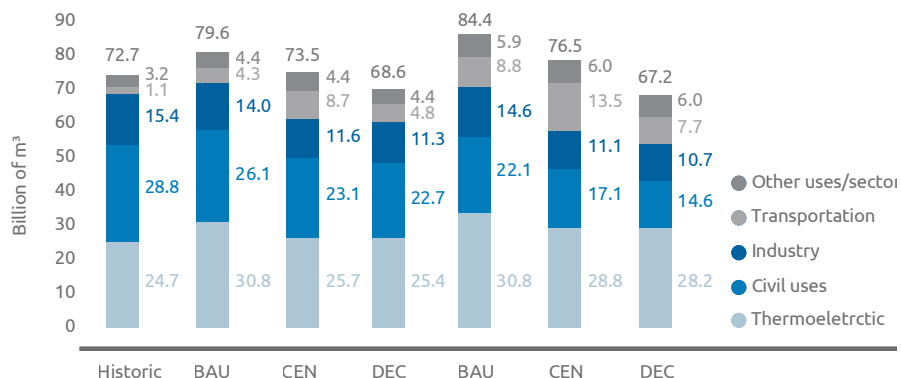
This trend will be guaranteed by the increasing significance of gas consumption in the transportation sector due to greater penetration of vehicles running on natural gas and green gases and an increase in consumption in the thermoelectric sector mainly due to the phasing out of thermoelectric plants running on coal, where the lost production will be partly offset by renewable sources and imported energy, and partly by gas thermoelectric power plants (CCGT and OCGT).

Civil and industrial sectors will be the ones, on the other hand, that suffer the greatest reduction in gas consumption, on account of the increase in the energy efficiency of buildings, the improved efficiency of heating systems and the greater penetration of renewable sources.

Within these scenarios and, specifically in the development scenarios, Snam expects a significant contribution to be made by green and decarbonised gases (biomethane, synthetic methane and hydrogen) in order to offset the gradual reduction in the demand for natural gas.

Specifically, it is estimated that in 2030 (CEN and DEC scenarios) an important portion of gas demand (5-11% depending on the scenario) will be met by green

gases thanks to the gradual replacement of natural gas used in thermoelectric plants. By 2040 there is expected to be a further increase in the demand for green gases (+234% compared with 2030), which will be used to replace natural gas not only in thermoelectric plants but also in civil and industrial sectors in addition to the biofuel produced from agriculture and waste in the transportation sector.



In spite of hydrogen only meeting a small part of total gas demand by 2040, according to research carried out by Snam, it is estimated that in 2050 hydrogen could play a crucial role in the Italian energy scenario meeting about 23% of total energy consumption, especially thanks to the gradual development of the civil, industrial and transportation sectors.

Imports, which currently make up around 90% of the country's natural gas requirements, will continue to be the main source to meet the growing demand of long-term scenarios and over 95% on account of the constant fall in domestic production due to the lack of upstream investment. In 2040, demand for biomethane, on the other hand, will be met thanks to the increase in domestic production, made up of 90% biomethane produced by anaerobic digestion plants and, the remaining 10% through thermochemical gasification processes. The hydrogen will be produced through Power to Gas (P2G) technology that will allow the production of green hydrogen from electricity produced from renewable sources or through the steam reforming process that enables blue hydrogen to be produced thanks to the capturing and storing of the CO<sub>2</sub> produced during this process. In the maximum hydrogen development scenarios by 2050 it is believed that demand for hydrogen could also be met thanks to the contribution of imported green hydrogen obtained from electrolysis, mainly from North Africa.

Snam is also working on a scenario for the development of the network's transportation capacity by 2040 that stresses how the projects funded by Snam to strengthen the network guarantee meeting the demand for natural gas in Italy. In an energy sector that is undergoing great changes, gas infrastructures will continue to play a central role, thanks to the growth trends for natural gas imports in Europe and the new use of natural gas and green gases in various sectors.

In the long-term gas is not considered as a transition source but, also thanks to the rapid development in recent years of biomethane and hydrogen, as a true pillar of the decarbonised world, also thanks to its transportation infrastructures which, supporting green and decarbonised gases, could take the role of programmable renewable energy sources.

# A strategy for the future



In all its activities, in Italy and abroad, Snam follows a sustainable and socially responsible growth model, capable of creating value for the business and the communities in which it operates.

Snam's strategy was developed taking into consideration the projections of its energy scenarios, consistent with the European and national legislative framework, the regulatory framework established by ARERA, the Italian energy and environmental policy guidelines (NPIEC) and the ENTSOG and ENTSO-E scenarios.

This was the basis on which the new 2019-2023 Strategic Plan was established. It was presented in November 2019 and will enable Snam to continue to grow and create value for all its stakeholders, anticipating and taking advantage of market developments.

## SNAM STRATEGY

In the new **2019-2023 Strategic Plan**, Snam, supported by the growth and development forecasts for green gases and gases with a low environmental impact, is actively promoting the use of gas as the best candidate to support non-programmable and difficult to store renewable electricity (such as wind power and solar power), in the decarbonisation of the country.

Snam has therefore developed a business strategy in line with European emission reduction targets based on three fundamental pillars: **improvement of the core business, internationalisation, leadership towards energy transition.**

## The new 2019-2023 Strategic Plan



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## Investments: 6.5 mld€ (+14%)

- reduction of leaks
  - digitalization
  - methanization

### IMPROVEMENT OF THE CORE BUSINESS

In the new **2019-2023 Strategic Plan** Snam plans an **increase in investments, taking them to €6.5 billion**, approximately 14% more than the figure of €5.7 billion in the previous plan. Specifically, the €5.3 billion involves the transportation network, €0.8 billion storage and regasification activities and €0.4 billion the new businesses linked to energy transition.

The improvement of the infrastructures, through investments in the maintenance, replacement and development of transportation, storage and regasification assets, is totally consistent with Snam's commitment to mitigating the effects of climate change.

A concrete example is the commitment and resources that Snam has dedicated to the **management and reduction of methane leaks**, in order to reduce related emissions and achieve its decarbonisation goals. On this front, the Company launched a campaign for detecting and repairing leaks (Leak Detection and Repair) in the pipes and in the compression and storage facilities and began the replacement of around 1,000 km of pipes, 45% of which is already authorised or under construction.

Snam has also invested €350 million in the **digitalisation of its infrastructures** with the aim of being able to remotely control 85% of the network and 100% of all particularly critical assets by 2023. With this in mind, Snam is developing centralised data collection systems supported by Artificial Intelligence programmes that make it possible to predict the maintenance requirements and intervene rapidly if there are problems.

Snam also believes that the recent agreement for the establishment of a new transportation operator involving Snam Rete Gas and Società Gasdotti Italia (SGI), which has the objective of creating and managing the gas transportation network for the **conversion to gas of Sardinia**, will play a key role in the energy transition of the country thanks to the gradual replacement of other pollutant fossil fuels which have a greater impact on global warming.

### INTERNATIONALISATION

Since 2012 Snam has dedicated increasing attention to the **international scenario**, concluding strategic agreements with important operators in the sector in the main continental energy corridors, and redesigning its role within the European infrastructure system: Snam has gone from a local asset operator to a strategic partner in the European and international gas market, through the acquisition of foreign subsidiaries and the provision of new integrated services to its customers.

At present, Snam is confirming its **commitment to the development of an integrated gas network in Europe** through the recent acquisition of DEFSA in Greece, which was completed at the end of 2018. Also continuing with the Trans Adriatic Pipeline (TAP) works, the pipeline for importing gas from Azerbaijan, which will allow the transportation of gas from the Caspian Sea to destinations in Western, Central and South-Eastern Europe. To date, the progress of the works is at around 90% with the completion confirmed for 2020.

The projects that Snam is involved in, defined in its **2019-2028 Ten-Year Plan**, relating to European energy infrastructures, are the South-North Connection in Western Europe ("**NSI West Gas**"), the South-North Connection in Central-

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## Development

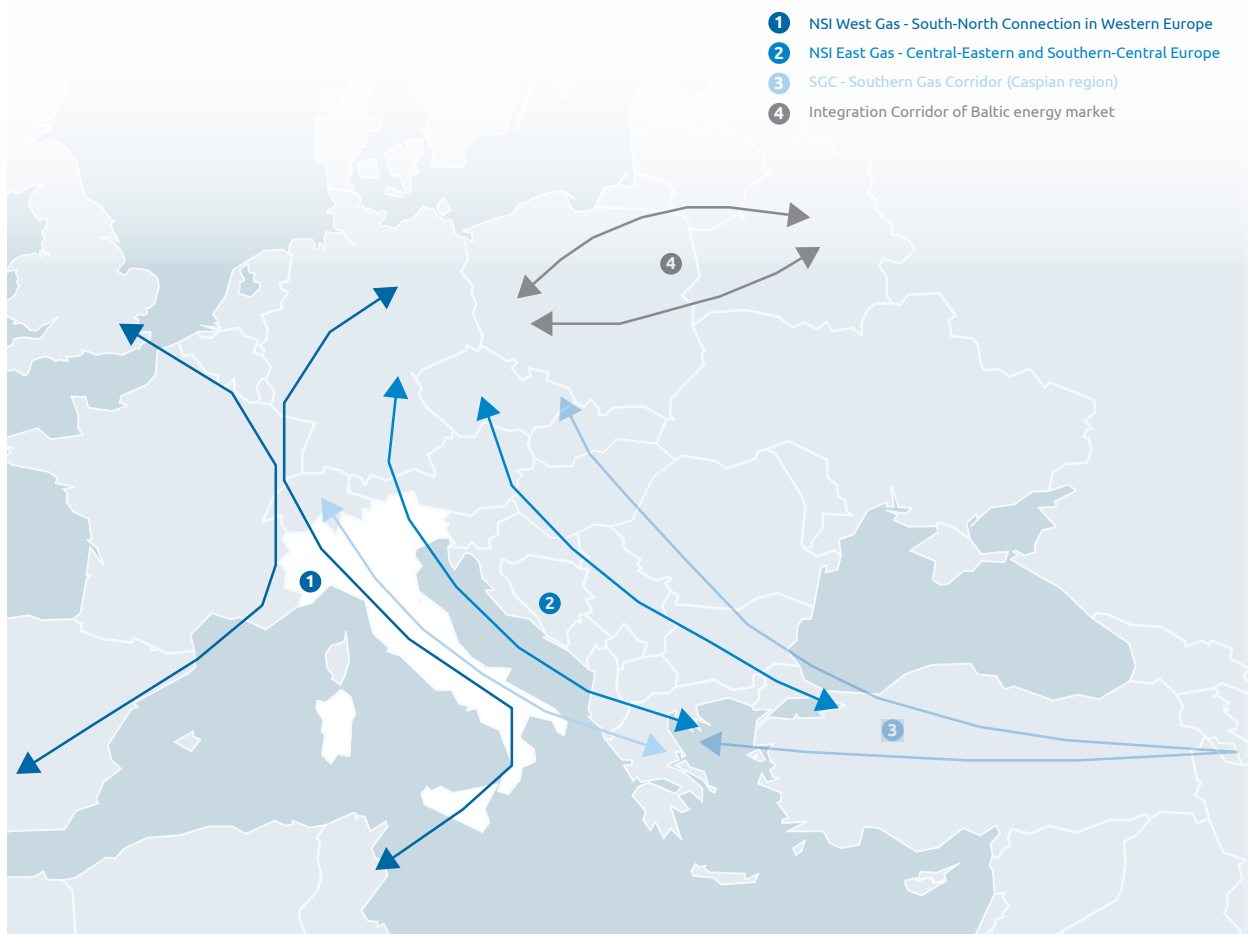
- European gas network
- International interconnections
  - LNG



Eastern and Southern-Central Europe (“**NSI East Gas**”) and the Southern Corridor (“**Southern Gas Corridor - SGC**”).

In recent years Snam's internationalisation journey has been moving **beyond the borders of Europe**, in countries like China and India, whose economic systems are tied to an energy production model based on traditional fossil fuels like coal and oil. Snam is a "torch bearer" for natural gas and green gases, pooling its expertise and know-how on the development and management of networks and infrastructures to accompany these countries on their own journeys to decarbonisation. Specifically, in October 2018, Snam signed a Memorandum of Understanding with Beijing Gas, the main natural gas supplier and distributor in China, with the aim of developing initiatives and projects relating to biomethane and natural gas storage.

The construction of infrastructures from scratch, however, involves very high start up costs, that many countries do not want or are not able to sustain in the short-/medium-term. As an alternative solution, Snam is promoting **Liquefied Natural Gas (LNG)** in order to take advantage of the environmental benefits provided by natural gas without having to make the initial high investment related to the infrastructure costs.



## International activities: Snam & Climate Change

Snam has been involved, for many years, in various very important international initiatives on the issue of

### Gas Naturally

Partnership between 6 associations in the EU gas chain: Eurogas, GERG, GIE, IOGP, Marcogaz and NGVA where Snam has the presidency. In November 2019, Gas Naturally organised an event at the European Parliament to present the ongoing initiatives and future commitments of the gas industry to reduce methane emissions along the entire gas

### Methane Guiding Principles (MGP)

An initiative that gathers together Oil & Gas companies with the aim of reducing methane emissions along the sector chain, through the involvement of the main stakeholders. In 2018, Snam subscribed to the guiding principles that commit a company to reducing its methane emissions from its activities.

In 2019, Imperial College, London (one of the top ten universities in the world with an international reputation for excellence for teaching and research), commissioned by MGP, developed a course for raising the awareness

### Climate-related financial disclosures

A Task Force launched by the Financial Stability Board with the goal of establishing recommendations and guidelines to improve the disclosure of companies on financial

### GERG

European Association for research in the gas industry in which there is international cooperation on methane emissions. In 2019 a research programme was defined in which the main European TSO operators, including Snam, are taking part. The project involves various phases that include the screening of the market and the theoretical analysis of commercially available methods and devices

### MARCOGAZ

A gas industry European technical association, particularly active with issues relating to climate change. In recent years, it has developed numerous sector international reference documents, including the estimation method for methane emissions applied midstream (transmission, distribution, LNG terminal and underground gas storage). A benchmark analysis was done for the entire European midstream sector in which emission models and scenarios

### Madrid Forum – GIE / MARCOGAZ Task Force

European regulation 2018/1999 requires a strategic plan from the European Commission (EC) to curb methane emissions that will become an integral part of the EU climate strategy. For this purpose, GIE and MARCOGAZ have studied the ways in which the gas industry can contribute to the reduction of methane emissions. In 2019

climate change. Below is a brief summary of the activities conducted in 2019.

value chain. The efforts made and the numerous initiatives put in place were illustrated. The event provided a platform to discuss future challenges, including future actions with representatives of the institutions, industry, NGOs and EU researchers.

of operators on the issue of methane emissions into the atmosphere (Global Outreach Program). The course, in which Imperial College has included some of Snam's best practices, takes the form of an Executive Course and a Master class. The course is also planned to be implemented in Italy in 2020 at an event organised by Snam in conjunction with ENI. There are also plans to deliver the course in 2020 in Oman, Norway, Qatar, Colombia and Russia.

aspects related to climate change. In 2019, Snam published its first report which generated a good amount of interest.

for detecting and measuring emissions. The different characteristics of the tools will be taken into consideration (e.g. the measurement range, speed of detection, precision and long-term stability and ease of use of the devices). Several models, some of most prominent, will be selected and tested in the field recreating different types of leaks.

applicable to all of Europe were analysed. In 2019, the drafting of the pre-standardisation document was concluded. It relates to the assessment of methane emissions for transmission and distribution activities. The document is not limited to fugitive emissions, but exhaustively traces all other types of emissions, such as unburnt emissions and vented emissions, including pneumatic emissions from technical devices.

the report "Potential ways the gas industry can contribute to the reduction of methane emissions" prepared by the GIE – MARCOGAZ task force, with contributions from representatives of the entire gas value chain, from exploration and production to use, was published. The study provides an overview of the state of methane

emissions, including the mitigation actions taken by the gas industry, and it was favourably received by the European Commission.

In 2019, training sessions were organised in which Snam, at the invitation of GIE and MARCOGAZ, gave specific presentations. In November, the Methane Emissions in the Gas Sector meeting was held at the Energy Community in Vienna (an international organisation that brings together the European Union and nearby countries to create an integrated Pan-European energy market). The objective of the study days, attended by over 80 delegates representing 48 companies and associations

### **IGU**

In 2017, the International Gas Union set up a Group of Experts on Methane Emissions (GEME) which produced several documents including "Understanding Methane's impact on Climate Change" and "The Natural Gas Industry - Methane Emissions Challenge" which include real case studies applied by global gas companies to curb methane emissions including Snam's experience.

In 2019, as part of the work of the IGU Transmission &

### **Gas for Climate**

Consortium whose activities were launched in 2017 to create awareness of the role of renewable gas and low carbon in the future energy system. As well as Snam, another six European transport operators (Enagás, Fluxys,

### **Hydrogen Initiative**

A declaration signed in September 2018 by Snam, together with other European energy sector companies, aimed at supporting hydrogen and wide-ranging potential as a sustainable technology for decarbonisation and the long-term energy security of the European Union.

from 20 Central and South-Eastern European countries, was to raise awareness and share expertise on methane emissions with special reference to policies and scientific and strategic aspects. The meeting was attended by the European Commission, the Florence School of Regulation, the Sustainable Gas Institute, Imperial College, London as well as GIE and MARCOGAZ. The activity comes under the widest scope of speeches that Snam has delivered in 2019 at the European Commission in Brussels and at the United Nations Economic Commission for Europe (UN-ECE) in Geneva.

LNG Committee, which took place in South Korea, Snam presented several results of the activities carried out in Europe. In its speech, Snam outlined the international framework of GHG emissions, with special reference to the identification, detection, quantification and reporting of methane emissions, including the mitigation actions undertaken by the gas industry with Leak Detection and Repair assuming particular importance.

Gasunie, GRTgaz, Open Grid Europe and TIGF) and two renewable energy sector associations (EBA and CIB) are part of the Consortium.



## New energies

- biomethane for mobility
- energy efficiency
- hydrogen

### LEADERSHIP TOWARDS ENERGY TRANSITION

Snam dedicates a considerable part of its Strategic Plan to the SnamTEC (Tomorrow Energy Company) project, planning to invest €1.4 billion in initiatives aimed at innovating the network, increasing energy efficiency and contributing to **energy transition**, 65% more than in the previous plan. In this project, Snam has doubled its investments in the new businesses for energy transition, going from €200 million in the previous plan to €400 million. **Biomethane, sustainable mobility, energy efficiency and hydrogen** are the solutions promised by Snam to reach the national and international decarbonisation goals. As proof of this commitment, in the last two years, Snam created the Energy Transition and Hydrogen Business Units, aimed at developing new businesses.

The development of **biomethane** as an alternative energy solution has been a vital part of Snam's strategy since 2017. Following the growth forecasts in biomethane consumption, developed in Snam-Terna scenarios, Snam's interest in this business has increased, with the goal of supporting and accelerating the development of the Italian biomethane market investing, through its subsidiaries, in **infrastructures and the creation of facilities**. There are plans to invest around €250 million compared with the €100 million in the previous plan to build plants with an installed capacity of more than 40 Megawatt. Specifically, Snam's strategy is developed through investment in **companies active in the production of biomethane** to in-source know-how and take advantage of further opportunities for growth. In 2019 Snam completed the acquisition of Renerwaste, a company operating in biogas and biomethane infrastructure, with an investment of €46 million, and a 50% stake in Initiative Biometano, a company with five biogas plants with plans for conversion into biomethane.

The growing use of natural gas and biomethane in the transport sector, at the expense of traditional fuels such as diesel and petrol, highlights the importance of the gas in terms of sustainable mobility. The **mobility sector** is evolving rapidly with more than 100,000 new methane car registrations in the last 3 years. More than 200 new refuelling stations were built in the same period, 150 of which are connected to the network. In 2019 Snam, in conjunction with IP, built 6 Compressed Natural Gas (CNG) stations and 2 Liquefied Natural Gas (LNG) stations, and plans, with Cubogas, the Snam4Mobility subsidiary, to build another 150 methane and biomethane refuelling stations by 2023 with a total investment of €50 million.

There are plans for further investments of €50 million to construct two liquefaction plants, one in the north and one in the south of Italy, and to adapt the Panigaglia terminal to accommodate a total capacity of 250 thousand tonnes per year.

**Energy efficiency** is a further building block of the Snam's strategy towards energy transition. It continues to invest in energy efficiency projects in order to develop new initiatives relating to this market. This desire is also facilitated by national tax incentives for investments in energy efficiency, the so-called "ecobonus" and "sismabonus". In 2017, Snam bought Tep Energy Solution, an Esco specialised in energy efficiency solutions and the evaluation of the carbon footprint of apartment blocks, businesses and public administrations.

From a long-term perspective, Snam considers **hydrogen** to be the key energy vector for decarbonisation. According to a study conducted with the analytical support of McKinsey, by 2050 hydrogen could cover almost one quarter (23%) of domestic energy demand for end users, thanks to a gradual reduction in

production costs and increasing interest and awareness of institutions. In this context, to better understand and develop the methods through which hydrogen will be integrated into the domestic energy system, Snam set the goal, through the Hydrogen BU, of evaluating possible pilot projects to make an active contribution to the development of the chain in Italy. Specifically, in 2019 Snam trialled the injection of a mixture of natural gas and hydrogen (from 5% to 10%) in a section of its network near Contursi Terme (Salerno). The result of the trial was positive, guaranteeing the supply of this mixture for one month to two businesses in the area.

### CNG/LCNG connections overview (grid)



# The risks and opportunities of climate change



The energy and climate scenarios that form the backdrop to Snam's operations involve a series of risks and opportunities that must be carefully analysed and studied so that they can be managed or taken advantage of. An evaluation of the factors that could affect the business is actually vital to continue operating in a sustainable way in the long-term. The continuing assessment of the risks and opportunities has the dual purpose of directing strategies and monitoring changes in the surrounding conditions.

## A CENTRALISED RISK MANAGEMENT MODEL

The actual and prospective risks and opportunities associated with Snam's corporate strategy are identified, **assessed and managed** through the ERM model (Enterprise Risk Management). Risk is defined as the effect of uncertainty on the objectives of the Strategic Plan and can be negative or positive (opportunities). The process of identifying, assessing and managing the risks and opportunities related to climate change is fully integrated in the ERM model.

### ERM model



Identification of risky events that could affect company targets through **self assessment with Staff and Business Managers**, responsible for the implementation of initiatives aimed at the effective oversight of risks, both through **specific analysis of the operational processes of every Company and the corporate Strategic Plan**.



The importance of every event is determined through the use of **prioritisation matrices** in which the probability of the event occurring and its negative impact (risks) or positive impact (opportunities) are represented. The probability of an event is determined on the basis of a scale from 1 (remote) to 4 (highly probable). Every event can have **different impacts, of a qualitative type** (industrial/business, asset, reputational, legal, market, health, safety and environment) or quantitative (economic, financial), measured on a scale of 1 (low) to 4 (significant). The risks and opportunities are classified on the basis of **4 priority classes**: low, medium, high and critical for risks; slight, moderate, good and excellent for opportunities.



Specific management actions have been identified for all risks which may involve **mitigation, monitoring and management interventions or the transfer** of the risk. The risk mitigation actions are aimed at limiting the probability and/or impacts of the risk in question while the monitoring and management actions do not imply any reduction of the probability or the impact. The transfer of the risk is aimed at partly or completely transferring the inherent impacts of a risk to a third-party outside the Snam Group.

The Enterprise Risk Management process, repeated quarterly, aims to disseminate a corporate risk culture in order to make informed decisions and share the results after each assessment cycle with the Leadership Team, the Control and Risks and Related-Party Transactions Committee, the Board of Statutory Auditors and the Supervisory Body and, annually, with the Board of Directors.

## A MODEL THAT INTEGRATES CLIMATE CHANGE

The risks identified through the Enterprise Risk Management process are classified as **financial** risks, **operational** risk, **legal and non-compliance** risks and **strategic** risks, which, in turn, include the risks related to **climate change**. All risks and opportunities are assessed and prioritised based on probability and impact, applied according to different types. The health, safety and environment (HSE) impact also considers the effects related to climate change. The **HSE dimension actually makes it possible to intercept the environmental impacts and those related to climate change** associated with the risks and opportunities identified and thereby determine their importance based on the significance of the contribution, positive or negative, on the management of climate change and environmental aspects related to the area in which Snam operates.

The time horizons of the risk and opportunity occurrence analysis are defined as follows:

- **Short-term:** in the short-term, Snam creates value by pursuing its business in the manner established by the rules and procedures, with particular focus on risk management and operational efficiency. The main point of reference is the **annual budget**.
- **Medium-term:** In the medium term, the ability to carry out investment programmes, thereby ensuring a flow of resources and that favourable economic conditions are maintained, is also important. The main point of reference is the **Strategic Plan**, which covers a period of up to five years.
- **Long-term:** In the long-term, it is vital that the investment decisions and strategic choices made have interpreted trends in the best way possible. The main point of reference is the **Ten-year transportation network development plan** submitted to the Authority, which covers a period of 10 years.

## RISKS RELATED TO CLIMATE CHANGE

Under the scope of the ERM model, Snam identifies, among other things, the risks related to climate change. An assessment is carried out for every risk of the operational impacts (industrial/business, economic, assets) and the

specialist impacts (financial, legal, HSE, reputational and market) related to it and opportunities are identified that allow the associated impacts to be adequately managed.

Risk class	Risk	Description	Phase of the supply chain to which the impact belongs	Potential financial impacts	Management actions
TRANSITION RISKS	<b>Political and legal risks</b> <b>MT</b>				
	Reinforcement of the regulatory framework for greenhouse gas emissions	Revision of the regulatory period for CO <sub>2</sub> emissions (reduction of freely allocated quotas and, as a result, a further increase in prices) through the European Emissions Trading Scheme - EU ETS, the main tool adopted by the European Union to achieve the CO <sub>2</sub> reduction targets	Operation	Greater costs related to the purchase of quotas	Periodic monitoring of energy consumption and updating of consumption forecasts relating to systems subject to the ETS in order to monitor quota requirements and purchase them before a price increase.  Transfer of quotas between Snam companies to balance excess emissions  Investments partly reimbursed for the efficiency of the plants to reduce CO <sub>2</sub> emissions  Target of -40% of natural gas emissions from 2016 to 2025, for the same perimeter
		Penalising revision of regulation relating to the natural gas business (e.g. disincentive for the use of gas, incentivising different energy sources) with a consequent reduction in gas demand	Products and services	Less investments  Lower revenues <sup>(*)</sup>	Promotion of the use of natural gas to replace more pollutant fossil fuels and promotion of renewable gases to support energy transition
	<b>Technological risks</b> <b>MT</b>				
	Dissemination of new low GHG emission technologies and other alternative technologies to gas (wind power, solar power, etc.)	Reduction in natural gas demand from consumers and customers	Products and services	Less investments  Lower revenues	Development of new businesses related to renewable gases (biomethane and hydrogen), the implementation of the use of gas to support energy transition (small scale LNG, CNG) and the efficient use of energy (energy efficiency)  Supporting the dissemination of more efficient gas technologies (gas and high-efficiency cogeneration heating pumps)



Short term



Medium term



Long term

(\*) With reference to the relation between Snam's revenues and the volumes of gas transported, it should, however, be pointed out that the current regulatory framework and tariff defined by the ARERA includes a guarantee mechanism in relation to the share of revenues related to volumes transported. This mechanism provides for the reconciliation of major or minor revenues, exceeding ± 4% of the reference revenues related to the volumes transported. Under this mechanism, approximately 99.5% of total revenues from transportation activities are guaranteed.



Risk class	Risk	Description	Phase of the supply chain to which the impact belongs	Potential financial impacts	Management actions
TRANSITION RISKS	<b>Market risk</b>	<b>LT</b>			
	Reduction in natural gas demand	Greater penetration of intermittent renewables to the detriment of natural gas, alternative uses of gas and the development of new businesses (biomethane, etc.) and/or the CNG market	Products and services	Lower revenues	<p>Development of new businesses related to renewable gases (biomethane and hydrogen), the implementation of the use of gas to support energy transition (small scale LNG, CNG) and the efficient use of energy (energy efficiency)</p> <p>Supporting the dissemination of more efficient gas technologies (gas and high-efficiency cogeneration heating pumps)</p> <p>Taking part in European round table discussions, including association ones, as part of energy transition and climate neutrality</p> <p>Raising the awareness of public opinion on natural gas as a key source to guarantee energy security and allow the phasing out of coal in electricity generation</p> <p>Monitoring the European and national legislative initiatives on natural gas and representing corporate interests with regard to various institutional stakeholders</p> <p>Positioning activities and taking part in industry studies</p> <p>Monitoring international, European and national public funding programmes for infrastructure, energy, sustainable transport</p>
	<b>Reputational risks</b>	<b>MT</b>			
	Negative perception of the companies that operate in the fossil fuel sector by public opinion	Establishment of organised groups that disagree with the new works that could a delay to or failure by institutions to approve the construction of the works	Operation	Reduction in revenues due to production capacity shortcomings	<p>Representation actions with institutional stakeholders in order to promote the gas infrastructure as a tool for the development of renewable gases (for example, biomethane and green hydrogen) supporting the fight against climate change</p> <p>(cont'd)</p>

**ST** Short term

**MT** Medium term

**LT** Long term

Risk class	Risk	Description	Phase of the supply chain to which the impact belongs	Potential financial impacts	Management actions
TRANSITION RISKS	(cont'd)	Establishment of organised groups that disagree with the new works that could a delay to or failure by institutions to approve the construction of the works	Operation	Reduction in revenues due to production capacity shortcomings	<p>Representation actions with institutional stakeholders in order to promote the gas infrastructure as a tool for the development of renewable gases (for example, biomethane and green hydrogen) supporting the fight against climate change</p> <p>Dialogue and promotion/advocacy with reference stakeholders and the institutional world and the financial world also in conjunction with associations and other gas chain operators</p> <p>Taking part in European round table discussions, including association ones, as part of energy transition and climate neutrality</p> <p>Disclosure of the multi-year targets defined to fight climate change</p> <p>Monitoring international, European and national public funding programmes for infrastructure, energy, sustainable transport</p> <p>Supporting national, European and international initiatives aimed at strengthening the commitment to reducing methane emissions</p> <p>Joining the TCFD "Task Force on Climate Related Financial Disclosure" and publication of an ad hoc document</p>
	<b>Acute risks</b> <b>MT</b>				
PHYSICAL RISKS	Increase in the severity of extreme atmospheric phenomena, with impacts on continuity and quality of service	Damage to pipes and plants, which could cause malfunctions or unexpected interruptions to the service with the possibility of being unable to adequately meet gas demand as a result	<p>Operation</p> <p>Products and services</p>	<p>Greater costs for insurance premiums</p> <p>Greater operating costs</p> <p>Increase in cost of communicating with the community</p>	<p>Adaptation of the recovery plan and business continuity management system to international best practices</p> <p>Technologically advanced tools for monitoring/controlling the status of infrastructure/plants and the areas affected</p> <p>Ongoing, systematic maintenance and monitoring measures</p> <p>Prompt implementation of the Rapid Response Procedures</p>
	<b>Chronic risks</b> <b>MT</b>				
	Increase in temperature with consequent lower demand for gas	Less demand for gas for heating buildings in winter	Products and services	<p>Less investments</p> <p>Lower revenues</p>	Development of new businesses related to renewable gases (biomethane and hydrogen), the implementation of the use of gas to support energy transition (small scale LNG, CNG) and the efficient use of energy (energy efficiency)

ST

Short term

MT

Medium term

LT

Long term

## OPPORTUNITIES RELATED TO CLIMATE CHANGE

The opportunities related to climate change are identified through a similar methodology to the one described for the risks. In this case too, there is an assessment of the impacts (industrial/business,

economic, financial, environmental, reputational and market) related to each opportunity and specific actions are identified to take advantages of the opportunities that present themselves.

Opportunity class	Opportunity	Description	Phase of the supply chain affected by the opportunity	Potential financial impacts	Actions and strategies to real-ise the opportunity
EFFICIENCY OF THE RESOURCES	Reduction of internal energy consumption <b>MT</b>	Decrease in energy consumption thanks to more efficient operational processes, with a consequent reduction in GHG emissions and the cost related to purchasing CO <sub>2</sub> quotas	R&D investments  Operation	Lower operating costs  Greater revenues	As part of the SnamTec project, measures to guarantee greater operational efficiency (smart gas project for network maintenance using new technologies, recourse to drones and satellites for monitoring assets, realtime measurement of the geological structure of the area, energy efficiency)  Identification of new targets relating to natural gas (-40% by 2025 compared with the 2016 figures) and Scope 1 and Scope 2 CO <sub>2</sub> emissions (-40% by 2030 compared with 2016)
	Utilizzo di fonti energetiche e/o tecnologie a basse emissioni GHG <b>MT</b>	Reduction of GHG emissions following the use of green energy sources and consequent reduction in the costs related to the purchase of CO <sub>2</sub> quotas	Operation	Lower operating costs	Identification of objectives to increase the production of energy from renewable sources (e.g. the installation of photovoltaic plants), for the purchase of green electricity and for the installation of low emission technologies (e.g. new high-efficiency heat generators, trigeneration power plants, etc.)  Identification of a new target relating to the use of 55% green electricity by 2030

**ST** Short term

**MT** Medium term

**LT** Long term

Opportunity class	Opportunity	Description	Phase of the supply chain affected by the opportunity	Potential financial impacts	Actions and strategies to real-ise the opportunity
PRODUCTS AND SERVICES	Development or expansion of low CO <sub>2</sub> emission products or services  <b>LT</b>	Development of new businesses related to alternative uses of gas	Products and services	Greater investments	Acquisitions of assets and organic growth for a total investment of 250M€ in plants fuelled by waste and agricultural and agrifood production for a capacity of more than 40 MW (for this purpose the company Renerwaste acquired and signed a binding LOI with Iniziative Biometano and in 2018 the company IES Biogas, a leading operator in the construction of EPC-based plants in Italy and abroad)
			Operation	Greater revenues from new businesses	Acquisitions of assets and organic growth for a total investment of 250M€ in plants fuelled by waste and agricultural and agrifood production for a capacity of more than 40 MW (for this purpose the company Renerwaste acquired and signed a binding LOI with Iniziative Biometano and in 2018 the company IES Biogas, a leading operator in the construction of EPC-based plants in Italy and abroad)
					Construction of microliquefaction plants for natural gas and investments in the Panigaglia LNG terminal to make the first LNG supply point in Italy usable for the use of heavy land vehicles and maritime bunkering and supply of non-electrified trains
					Possible international development programs leveraging distinctive expertise in both biomethane development and sustainable mobility
				Organic investments and acquisition of companies (TEP Energy Solution and TEA Servizi) operating in energy efficiency, with a view to developing an Italian player in the sector	
		Increase in the demand for natural gas caused by the progressive reduction in consumption of coal and oil and the increase in average temperatures in summer (greater use of gas-cooled pumps)	Operation	Greater revenues  Greater investments	Support for the phasing out coal and promoting the use of gas as an alternative fuel to more pollutant fossil fuels  Development of the natural gas conversion project for Sardinia, aimed at replacing the fuels with the greatest impact in terms of the climate
		Improvement of the reputation of the business and a better perception of it by stakeholders	Products and services  Operation	Greater revenues  Greater investments	Promotion and development of Snam's new businesses related to energy transition

**ST**

Short term

**MT**

Medium term

**LT**

Long term

Opportunity class	Opportunity	Description	Phase of the supply chain affected by the opportunity	Potential financial impacts	Actions and strategies to real-ise the opportunity
MARKETS	Access to new foreign markets <b>LT</b>	Increase in the supply of natural gas following an increase in demand due to the progressive reduction in the consumption of coal and oil with possible developments abroad	Products and services  Operation	Greater revenues  Greater investments	<p>Growing contribution from international associate companies (TAG and GCA in Austria, Terêga in France, TAP, Interconnector in the UK and DESFA in Greece, also in relation to the Greek government's decision to abandon thermoelectric production from lignite)</p> <p>Development of new businesses related to energy transition (CNG, SSLNG) by international associate companies</p> <p>Analysis and possible pursuit of extraordinary investment transactions in companies operating in Snam's core business (transportation, storage and regasification) in emerging markets in which the demand for natural gas is supported by the need to replace coal and other more pollutant fossil fuels</p>
	Attraction of new investors <b>MT</b>	Growing interest of SRI investors in the share capital of the company	Share capital	Higher share price	<p>Participation in the evaluation of the main international sustainability ratings agencies in order to be included or reconfirmed in the sustainability indices, increasing the visibility of the business with SRI investors and, more generally, with the entire financial community, also completing sustainability questionnaires (DJSI and the CDP Climate Change)</p> <p>Issuing of climate action bonds</p>
RESILIENCE	Business diversification <b>MT</b>	Increase in revenues due to business diversification through new products and services	Products and services	Greater revenues from new businesses	<p>Development of new businesses related to renewable gases (biomethane and hydrogen), the implementation of the use of gas to support energy transition (small scale LNG, CNG) and the efficient use of energy (energy efficiency)</p> <p>Actions and investments aimed at the development of hydrogen as an alternative source to support energy transition (e.g. the creation of a dedicated business unit, injection of a mixture of 10% hydrogen into a section of the national network, position papers and dedicated studies)</p>

**ST** Short term

**MT** Medium term

**LT** Long term

# Roles and responsibilities for the management of climate change



Snam is constantly committed to maintaining the strengthening its governance system to support the Company's initiatives aimed at combating the negative effects of climate change in accordance with the recommendations of the Task Force on Climate-related Financial Disclosures. This context includes the activities aimed at guaranteeing the full supervision by the Board of Directors (BoD) of the risks and opportunities related to climate change, as well as those aimed at ensuring the correct management of these aspects by management in the running of the business.

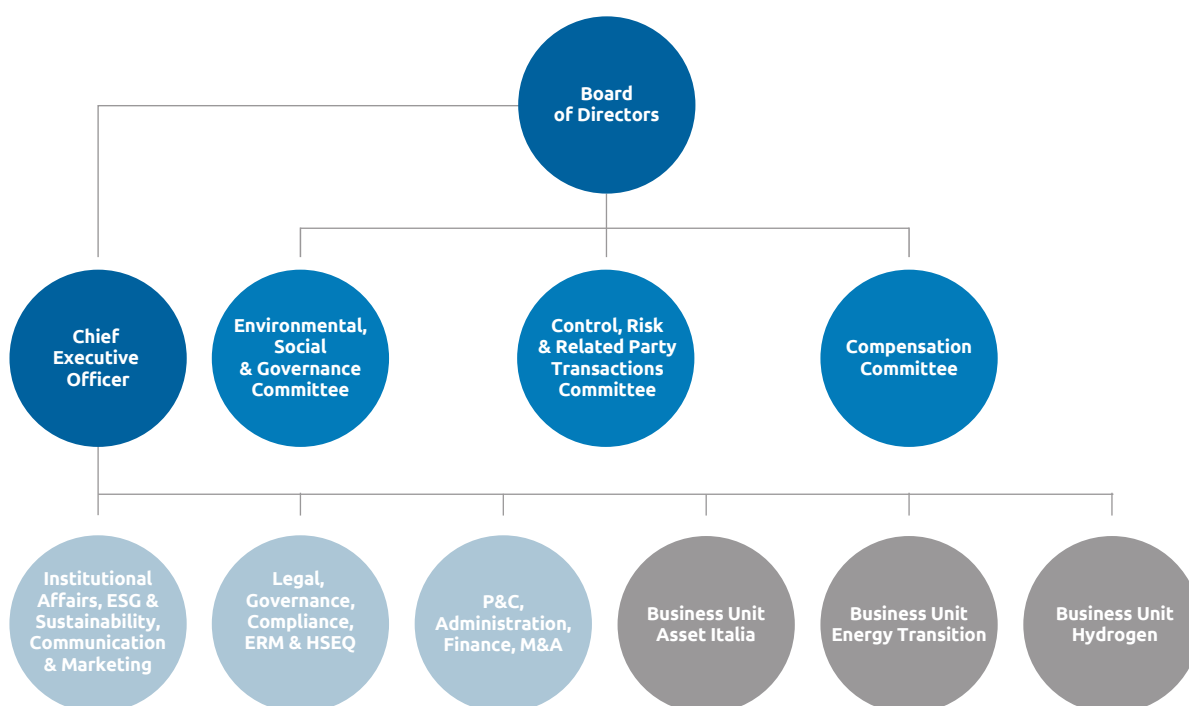
As a testament to its commitment, in 2019 in the Integrated Governance Index annual survey Snam was the best Italian company for corporate governance and integration of ESG (environmental, social and governance) factors in corporate strategies.

Snam's Board of Directors, appointed by the Shareholders' Meeting on 2 April 2019, in office for a three-year term, set up four committees, all with independent chairmen. They include the Environmental, Social & Governance Committee ("ESG"), which makes proposals to and advises on the integration of ESG issues in the business strategies and which replaced and integrated the tasks of the Sustainability Committee, a part of the company since 2016. Specifically, Snam was the first Italian listed company, and among the first internationally, to establish a committee of this kind. Of the other three committees (Appointments, Remuneration and Control and Risks and Related-Party Transactions), the last two, in any event, have a supporting role on certain aspects related to sustainability issues. The BoD and the committees are kept informed regarding

the risks and opportunities relating to climate change by managers, with specific expertise on the subject of climate change and/or who have direct responsibility for assessing and managing the risks and opportunities related to climate change in the day to day running of the business. Snam is already compliant with the recommendations of the Corporate Governance Code adopted by the Corporate Governance Committee in January 2020 (which will come into force in 2021) according to which the sustainability goals guide the actions of the administrative body and are reflected in the creation of value in the long-term to be benefit of shareholders, taking into account the interests of other important stakeholders for the company.

The activity of the Board of Directors, including through the above-mentioned committees, is to support the Chief Executive Officer (CEO), and he has demonstrated that he possesses specific expertise regarding climate change related issues, having received numerous awards and recognition for his active role in energy transition. Specifically, in 2019, Marco Alverà, Snam's CEO, received the 2019 Italian CEO award in the Energy category, awarded by Forbes Italia and Business International, in Milan "as the author of the international consolidation and positioning of Snam as a protagonist of energy transition in Europe". In addition at "The Hydrogen Challenge - 2019 Global ESG Conference", held in Rome in 2019, the CEO presented his book, "Generation H - Healing the climate with hydrogen", also written with contributions from international experts in the industry such as Gabrielle Walker, Lord Turner, Baroness Worthington, Luigi Crema, and a team of experts from McKinsey & Company.

## GOVERNANCE FOR THE MANAGEMENT OF CLIMATE CHANGE



## THE ROLE AND OVERSIGHT OF THE BOARD

At the proposal of the CEO, the **BoD** periodically examines and approves:

- The objectives related to climate change and energy transition, an integral part of the corporate strategies included in the Strategic Plan approved annually;
  - Snam's strategic risks, which includes the risks due to climate change, subject to examination annually;
  - The Long Term Share-based Incentive Plan for the Chief Executive Officer and the owners of the managerial roles with the greatest impact on the company's results, approved annually in accordance with the guidelines of the strategic plan and with ESG objectives
- also related to the reduction of natural gas emissions;
  - The annual sustainability results and HSE review, including climate change performance;
  - The institutional report that includes the Half-Year Financial Report, the Annual Financial Report (including the Non-Financial Consolidated Declaration - DNF), the Sustainability Report and the Financial Disclosure on Climate Change;
  - The information supplied by the committees, in particular the ESG Committee, pursuant to the Regulation as part of disclosure to the Board required following every committee meeting.

## THE BOARD INDUCTION

Following their appointment and for the entire term of office, Snam's BoD and Board of Statutory Auditors are kept informed with regard to climate change aspects and initiatives, including through board induction sessions held as part of the in-depth analyses into the issues relating to sustainability and the integration of these aspects into corporate strategy. Specifically, a board induction session was held in September 2019 dedicated to an in-depth look at the risks and opportunities relating to climate change.

## Committees

The ESG, Control and Risk and Related Party Transactions and Remuneration Committees carry out, among others, within the scope of their respective competences and in coordination with each other, propositional and advisory functions towards the Board of Directors in order to promote the continuous integration of ESG factors in the company's strategies, supporting their evaluations and decisions, also through the correct identification and management of the related risks.

Specifically, in 2019, the Sustainability Committee met twice and then the ESG Committee, established in May 2019, met six times and dealt, on several occasions (two meetings) with issues relating to climate change analysing the results and strategies in this regard.



- examines the **integration policies in the business model** on environmental, social and governance issues, including through the analysis of the **relative KPIs**, aimed at the creation of value for shareholders and stakeholders over a medium-/long-term horizon, in compliance with the principles of sustainable development
- examines the initiatives undertaken by the Company to deal with the issues posed by **climate change** and its reporting
- examines the **guidelines, objectives**, and consequent sustainability **processes** and the **sustainability reporting** submitted annually to the Board of Directors
- monitors the **Company's position in relation to the financial markets on sustainability issues**
- examines the **financial sustainability initiatives**
- examines the **reporting of non financial information** submitted to the Board of Directors
- evaluates the **sustainability risks** in the medium-/long-term



- periodically examines the **main risks and opportunities**, including those resulting from climate change
- supports the Board of Directors in defining the guidelines for the internal control and management system for **risks in the medium and long-term as well**, so that the main risks are correctly identified, measured, managed and monitored (including risks that may take on importance from a sustainability perspective)
- supports the Board of Directors in determining the degree of compatibility of these risks with management that is consistent with the **strategic objectives**



- examines the guidelines of the CEO and, with a view to promoting the creation of sustainable value in the medium-/long-term, proposes: (i) the general criteria for the remuneration of senior managers with strategic responsibilities; (ii) the general guidelines for the remuneration of other senior managers of Snam and subsidiaries; (iii) annual long-term incentive plans, including share-based ones
- defines the **ESG performance targets, identified in agreement with the ESG committee, including those related to climate change** (e.g. reducing emissions), included in management's short and long-term incentive schemes



## THE ROLE AND AWARENESS OF MANAGEMENT

The battle against climate change is an important, concrete problem for Snam. Technological innovation, research and good practice are the tools to deal with it. Snam intends to develop ambitious projects to reinforce its operational excellence and contribute to reducing greenhouse gases to a minimum. In order to do this, management functions have been equipped with specific expertise with regard to climate change and they report directly to the Chief Executive Officer (CEO). The training programme open to the entire corporate population included a workshop on the new businesses in order to disseminate both a basic and more detailed knowledge of Snam's new businesses, also with a view to their role in energy transition and the strategic plan. In addition, in September 2019, as part of the initiatives promoted by the Snam Institute, a conference was held "*Climate Change Talk@Snam*", open to the entire corporate population, at which in addition to taking an in-depth look with the Chairman, the CEO and Snam Group management at different aspects of Snam's role in energy transition, Luca Mercalli, an important meteorologist and climatologist, illustrated the causes and consequences of climate change and future global warning scenarios.

With a view to collaboration, harmonising actions and sharing climate change related targets in all corporate areas, different functions, including *ERM, Health, Safety, Environment and Quality, CSR & Communications, Corporate Strategy and Business Asset Italia*, have started to meet periodically since 2018.

**Management** develops activities through periodic meetings and the sharing of information flows including to identify new initiatives related to climate change, as well as implementing and monitoring strategies identified:

- business review, quarterly meeting between the Chairman, CEO and senior executives for monitoring the progress of the strategic targets and lines;
- HSE review, half-yearly and annual meetings during which HSE informs the CEO of the results achieved for the environment, health and safety;
- Risk review, quarterly meetings in which the ERM function presents the updated information related to the risks and opportunities, which include those resulting from climate change.

## Management



# Acting for tomorrow



## SNAM'S COMMITMENT

Snam has defined a decarbonisation strategy within the two main areas: the reduction of greenhouse gases (GHG) and improving the high energy efficiency solution.

The Company, in accordance with its sustainable growth model, increased the targets previously set for reducing its methane emissions by 2025, going from -25% to -40% compared with 2016 figures, through a substantial reduction in emissions from transportation, storage and LNG regasification activities. An investment plan was implemented to reach these targets that makes it possible to maintain and develop natural gas recovery programmes compared with all potential emissions from maintenance activities equal to 33% a year. In addition, Snam is launching a campaign to detect and repair methane emissions (Leak Detection and Repair) and is continuing to replace components throughout the entire national network.

In 2019, Snam established an ambitious climate altering emissions reduction plan, setting a target of -40% by 2030 compared with 2016 values for all (Scope 1) direct and (Scope 2) indirect CO<sub>2eq</sub> emissions, including through the definition of a new target related to the 55% increase in the use of green electricity by 2030.

To achieve these challenging targets, Snam has also introduced energy efficiency programmes and aims to reduce its environmental impact, including through the realisation of Energy Diagnoses for all Group companies, in compliance with the dictates of the European Directive on Energy Efficiency and the renovation of company buildings making them more efficient, with an investment of €50 million.

### COMMITMENT TO ENERGY EFFICIENCY

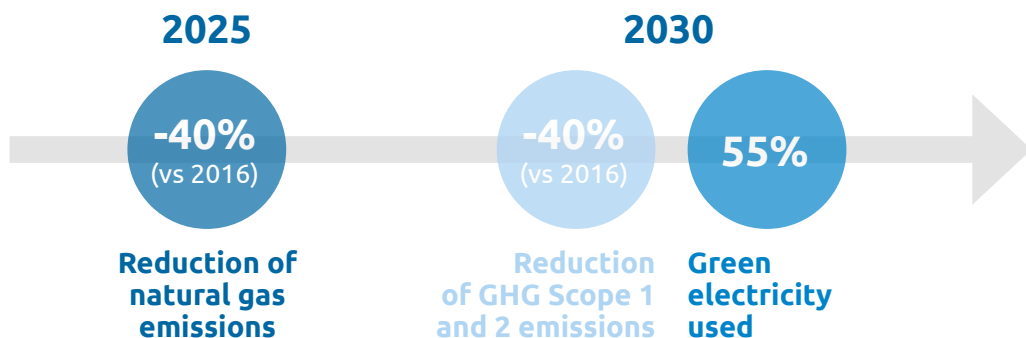
The use of natural gas as a primary source of energy allows Snam to limit the release of greenhouse gases into the atmosphere. Currently, Snam's main energy consumption is from the gas turbines used in compression plants and storage facilities, which represent 81% of total consumption.

In order to pursue its energy consumption reduction plan, Snam is implementing a series of energy management initiatives, including:

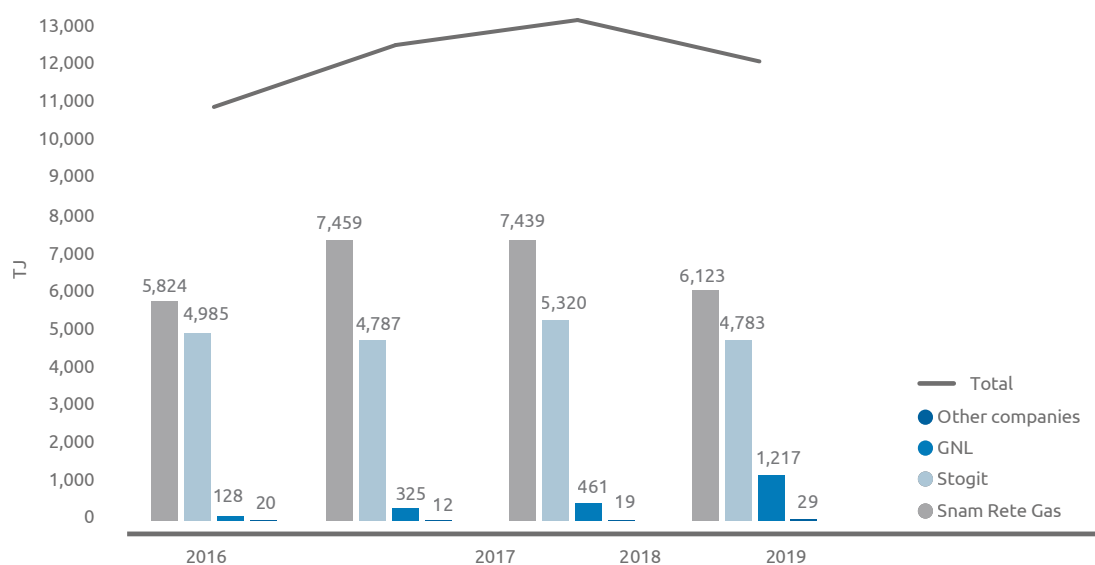
- the installation of photovoltaic plants at the main premises and the production of green electricity;
- the purchase of green electricity through specific leasing contracts;

- the installation of high-efficiency heat generators, in particular at gas reduction and regulation plants;
- the installation of new trigeneration plants;
- the installation of turboexpanders;
- the improvement of the energy efficiency of buildings.

As far as the production of energy from renewable sources is concerned, Snam installed photovoltaic plants in several of the buildings it owns (territorial headquarters and maintenance centres) and at certain gas storage facilities. In 2019 the total number of these types of plants reached 1,794 unit (+17% compared with 2018) and the installed capacity increased by 75 kW compared with 2018, going from 1,054 kW to 1,129 kW (+7%), thanks to the installation of 258 new back-up systems and a new



## 2016-2019 energy consumptions



photovoltaic plant connected to the electricity grid. The increase in the number of back-up panels is due to the increase in the monitoring units installed in the field. The unitary power changed compared with the previous year because a size rationalisation was implemented due to the project to replace all monitoring units with technologically more advanced equipment with greater operating autonomy.

The total energy produced from renewable sources, on the other hand, fell compared with 2018, going from around 1,128,400 kWh to around 830,000 kWh in 2019, following the unavailability of certain systems, compromising the projected annual production.

Snam has specific energy efficiency KPIs to aim for by 2022, which are in line with expected trends with the exception of production from solar power as a result of

the exceptional events that took place in 2019. In the light of this it is necessary to include the acquisitions of (i) a controlling interest, of 82% of the share capital, of TEP Energy Solution (TEP), one of the main Italian companies operating in the energy efficiency sector, completed in May 2018; (ii) of 100% of the share capital of TEA Servizi S.r.l. (TEA) active in the design, construction and running of thermohydraulic and electric plants for industrial customers, with a special focus on small and medium businesses, completed on 11 November 2019. The two initiatives enable Snam to integrate its range of services for industrial customers, adding plant engineering design, running and maintenance expertise to the current offering developed via TEP Energy Solution, focused on the facilitation of the energy redevelopment of residential buildings in Italy, making them more sustainable and safe.

KPI name	KPI date	Pre-set target	Target achieved in 2019	Sector	Activity status
Increase production of electricity from photovoltaic plants	2017	Produce at least 860 MWh annually (Up until 2022)	830	Transportation	●
High-efficiency heat generators	2017	Install power of 100 MW in 2022	66.5	Transportation	●
Trigeneration plants	2017	Produce 5,200 MWh by 2022	359 MWh <sup>(1)</sup>	Transportation	●
Installation of LED lighting systems	2017	Replace 534 kW in 2022 with a saving of 1,860 MWh	351 kW installed 273 MWh saved <sup>(2)</sup>	Transportation Storage	●
Improved energy efficiency of buildings	2017	Restructure buildings annually saving 75,000 m <sup>3</sup> of gas and 210 MWh off electricity by 2022 <sup>(3)</sup>	15,000 m <sup>3</sup> of gas 65 MWh of electricity	Transportation	●

● Target not reached

● Activity in progress

(1) Production is calculated at 1 site that came into operation mid year. The other site came into operation at the end of the year therefore production is negligible.

(2) Some plants came into operation at the end of the year so the savings are negligible.

(3) The target was extended.

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## INITIATIVES UNDER THE SCOPE OF ENERGY DIAGNOSIS

In 2019, in accordance with the European Directive on Energy Efficiency and the implementation in Italy through Legislative Decree 102/2014, Snam carried out the Energy Diagnosis for all Group companies, an activity coordinated by the parent company and conducted under the “**Energy Manager's Table**”.

The sites chosen to be subjected to the Diagnosis took place following a through a clustering approach set out in the MISE and ENEA instructions, which includes the possibility for companies that have sites connected in a network system (e.g. pipeline network, compression plants, reduction plants, storage facilities) of considering the actual system as a unique virtual site and therefore subjecting the network connecting the different sites to the energy diagnosis.

Four specific diagnoses were developed that also include, moreover, the evaluation of the “virtual sites” for both gas transportation and storage. The energy evaluation was carried out for the SRG and Stogit virtual sites relating, respectively, to the natural gas transportation and storage service. In addition, diagnoses were carried out at the

Crema office and the GNL Italia site, namely at the natural gas regasification terminal.

The Energy Diagnosis made it possible to measure the energy performance of the plants and predict future ones, in order to continuously improve performance and evaluate any irregularities, as well as improve energy efficiency and reduce energy consumption.

This has been possible through the definition of energy performance indicators based on productive and non-productive type actual and variable consumption, and the identification of improvement targets and dedicated action plans.

The Energy Diagnoses have had good results. Specifically, the energy indicators were essentially stable or slightly better compared with the previous diagnoses. At some sites electricity consumption meters had to be installed to achieve the coverage level required by the monitoring plans. In addition, at Group level more than 20 energy efficiency interventions were identified which will be implemented during the next four-year period 2019-2022, the time frame in the plans.

## REDUCTION OF GHG EMISSIONS

GHG emissions can be broken down into three categories:

- direct emissions (Scope 1): emissions resulting from direct combustion processes or regarding fuels that are burnt within the Group, or by direct emission into the atmosphere of GHG (e.g. methane emissions);
- indirect emissions (Scope 2): emissions from the consumption of electricity, heat and steam;
- other indirect emissions (Scope 3): all other types of emissions that do not come under the two previous classes.

### Direct emissions (Scope 1)

Greenhouse gases emitted directly in the atmosphere by the Snam's activities are methane (CH<sub>4</sub>), the main component of natural gas, and carbon dioxide (CO<sub>2</sub>). Methane emissions arise from the release of natural gas into the atmosphere and are generated by the normal plant operation, by operations to connect new gas pipelines and the maintenance thereof, or by accidental events occurring on infrastructure, whereas the CO<sub>2</sub> produced is directly correlated with fuel consumption. In 2019, like last year, the marginal contribution from the use of hydrofluorocarbons (HFC) in refrigeration systems was also included in the evaluation of direct Scope 1 emissions and was equal to approximately 1.48 thousand tonnes of CO<sub>2eq</sub>.

Snam's direct emissions in 2019 amounted to around 1.35 million tonnes of CO<sub>2eq</sub>, a reduction of 10% compared with 2018.

In 2019 Snam reduced its emissions into the atmosphere thanks to the adoption of various initiatives:

- reduction of natural gas emissions;
- production of electricity from photovoltaic plants;
- acquisition of green electricity;
- installation of plants with LED lighting replacing other lighting equipment with greater consumption;
- savings resulting from the renovation of buildings;

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## GHG emissions

**Scope 1**  
(direct)

**Scope 2**  
(indirect)

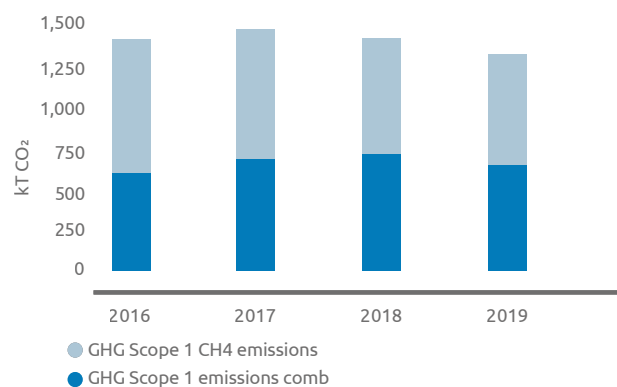
**Scope 3**  
(other indirect)

■ smart working.

These actions made it possible for the company not to release around 182 thousand tonnes of CO<sub>2eq</sub> into the atmosphere, the maximum value in recent years, an increase of 17% compared with 2018 as a result of the company's ever increasing commitment to combating climate change.

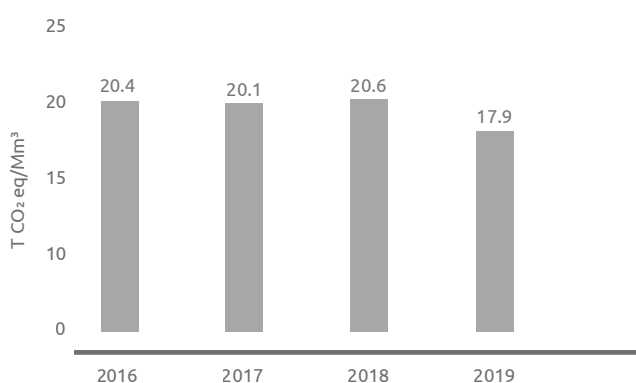
From 2019, all Snam's Scope 1 direct emissions are covered by Scope 1 and Scope 2 emission reduction targets of 40% by 2030 compared with 2016 and, specifically for natural gas emissions, Snam is also committed to reduce its absolute emissions by 40% by 2025.

### 2016-2019 GHG Scope 1 emissions



Compared with these targets, in 2019 the emission of natural gas fell by 19% compared with 2016, early than in the projection which expects emissions to be reduced by 40% by 2025, as announced in the 2019-2023 Strategic Plan.

### GHG intensity index (tCO<sub>2</sub>/Gas carried)



As far as the KPI relating to the global emission of Scope 1 CO<sub>2eq</sub> is concerned, in 2019 emissions were reduced by 10% compared with the previous year and by 6% compared with 2016, essentially in line with the expected reduction trend. Emission intensity (Scope 1 CO<sub>2eq</sub> emissions/gas injected into the network) fell by 12% compared with 2016 thanks to the natural gas emission reduction initiatives implemented in the reference period, proof of the effectiveness of the decarbonisation strategy adopted by Snam at the time.

### Emissions resulting from the combustion process

Snam helps to fight climate change beginning with its energy choices: its energy mix is in fact composed almost entirely of natural gas which covers 95.7% of its total needs in 2019.

Most of Snam's energy consumption is attributed to gas turbines used in compression systems that provide the pressure required for gas transportation (thrust consumption) and in storage concessions (storage consumption) that, overall, represent 81% of total consumption. In addition to natural gas, the other energy sources are electricity (3.5%) and other fuels (diesel fuel, gasoline, LPG and heat), which together amount to 0.8% of the total consumption.

In 2019 there was a reduction in global energy consumption, going from 13,281 TJ in 2018 to 12,152 TJ (-8.5%). This result was supported by the different provenance and different import points of the gas (less use of the North African backbone network which is more energy intensive than other import lines from Russia and Northern Europe).

Energy consumption for gas storage fell by 10% compared with 2018, in line with the reduction in the quantity of gas injected in the storage sites, while energy consumption for gas regasification increased significantly compared with 2018 (+160%), in line with the increase in the quantity regasified (+170%) and represents 10% of Snam's global consumption.

In any event, Snam has, where possible, activated measures aimed at curbing the fuel consumption of the plants, for example through the implementation of an integrated management system based on the acquisition of real-time data and by launching a programme to replace gas turbines with electric motors. There is also a plan underway to replace the heaters with more recent ones which are more efficient.

Direct emissions from combustion, in Snam plants such as compression plants, storage facilities and the LNG terminal, come under the scope of the Emission Trading Scheme (EU-ETS), which has a significant impact on Snam's operations, economic results and investment plan.

In 2019, carbon dioxide emissions of the Snam Group facilities covered by the ETS were overall greater than the emission permits allocated. In effect, in view of around 0.609 million tonnes of carbon dioxide emitted into the atmosphere, around 0.202 million tonnes were allocated, resulting in a 0.407 million tonne deficit. Specifically, in 2019 the free allocation for the Snam Group was 201,910 quotas, taking into consideration the 19,525 quotas allocated for 2018 and 2019 to the new gas compression plants of Minerbio and Sergnano. Not taking these quotas into consideration, the free allocation would have been reduced by 10% compared with 2018, as a result

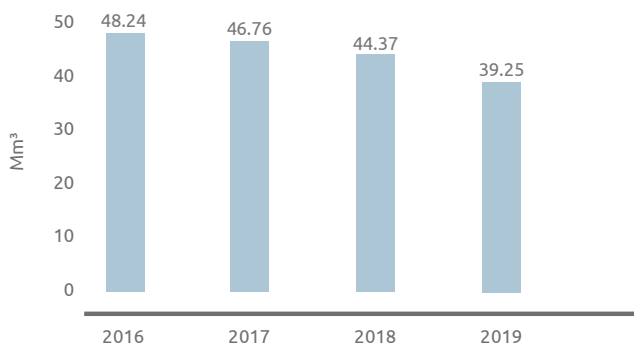
of the gradually decreasing allocation of free quotas by the competent national authority, planned for the third regulatory period by Article 10 bis of Directive 2009/29/CE. The financial impact of buying CO<sub>2</sub> quotas for 2019 was around €840 thousand.

### Emissions of natural gas and methane

Snam is committed to reducing methane emissions in absolute terms for all its businesses which are essentially concentrated in gas transportation, storage and regasification.

Snam has already been one of the leading companies in Europe and globally for 20 years in recording methane emissions. It used a method developed internationally in conjunction with a qualified outside organisation, the GRI - US EPA (Gas Research Institute – US Environmental Protection Agency), integrated with a series of personalised emission factors following measures in the field carried out with the US company Radian on plants and representative sections of the network.

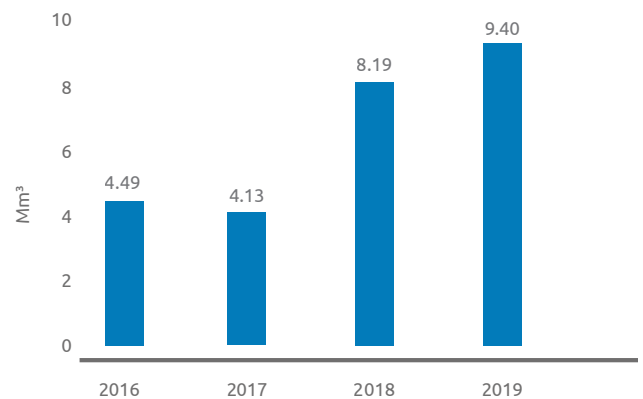
### Natural gas emissions



From 2018, and especially in 2019, Snam carried out an on-site measuring campaign, which allowed the recording method and maintenance interventions to be improved. Specifically, the activity was carried out by a qualified external company in accordance with standard UNI EN 15446, using FID equipment (Flame Ionization Detector) and, in the case of an overflow using Hi-Flow equipment, providing high added value because the combination of the two methodologies determines the effective global emission.

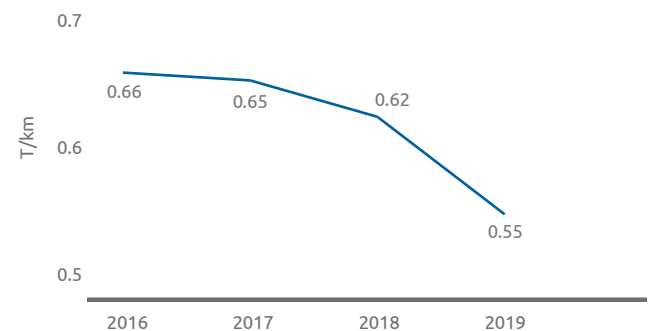
Snam's natural gas emissions include four different types: vent, fugitive, pneumatic and unburnt. There are containment actions planned for each of them with the exception of unburnt emissions which are totally negligible (0.7%). This extremely low figure is due to the use of gas turbines for gas transportation, as an alternative to solutions that have a greater impact.

### Transmission network - Natural gas avoided



In 2019 natural gas emissions totalled 39.2 Mm<sup>3</sup>, a decrease of 11.5% compared with the figures in 2018 and 19% compared with 2016, earlier than the path requiring the reduction of Scope 1 and Scope 2 emissions by 40% by 2025 as announced in the 2019-2023 Strategic Plan. Thanks to the progressive implementation of best practices that involved both the innovative and the maintenance aspects, in 2019 9.4 million cubic metres of natural gas were avoided from being emitted into the atmosphere, equal to around 165 thousand tonnes of CO<sub>2eq</sub>, a 16% increase compared with the figure of 142 thousand tonnes of CO<sub>2eq</sub> in 2018.

### Natural gas Emix vs. pipeline length



In addition, natural gas emissions per kilometre of network for transportation activity were further reduced by 13% compared with 2018, with an 18% reduction compared with 2016.

The specific KPIs set by Snam and the results achieved in 2019 are reported in the final table which contains all the Performance Indicators.

## SNAM'S BEST PRACTICES

Snam has for many years implemented a series of best practices to reduce natural gas emissions and consequently methane, in accordance with the decarbonisation strategy that involves the reduction of greenhouse gas emissions. Some of the results achieved in 2019 from the application of these technologies are reported below.

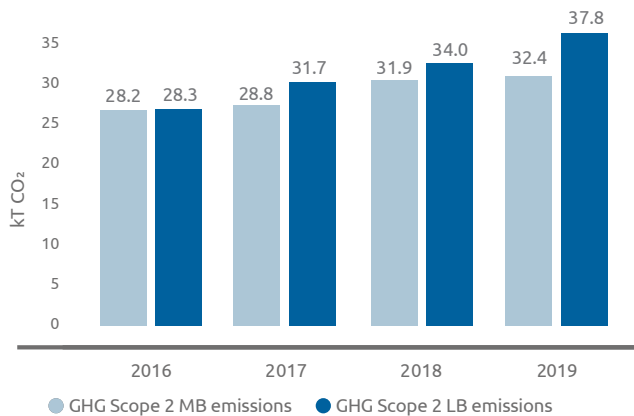
- To improve the emission accounting system the campaign in the field for detecting fugitive emissions, conducted by a highly qualified outside firm has almost been completed. The last measures remain to be carried out at some of the storage facilities which will take place in 2020. In these two years of activity, around 150,000 components were measured and the technical data and the manufacturer's designs of the pneumatic equipment were recorded and verified. Based on this data and analysis, the Emission Factors were updated and were already applied from 2020.
- Gas recompression systems were adopted to minimise vented emissions which, when major works are carried out to the transportation network, allow the gas to be re-injected into the network preventing it from being emitted into the atmosphere. A similar gas recovery system is permanently installed in some compression stations. In 2019 the emission of 6.1 Mm<sup>3</sup> of gas into the atmosphere was prevented thanks to specific interventions related to the recompression of gas in the network and in the compression stations, the lower of the discharge pressure during works on the network and interventions with tapping machines, a technology that makes it possible to disconnect pipelines during operation for new connections without a break in service.
- Pneumatic emissions were reduced by replacing existing models with new low emission or zero emissions equipment and, in some plants, with activation systems running on air rather than gas. Specifically, the following results were achieved in 2019:
  - reduction in network pneumatic emissions (-1.2 Mm<sup>3</sup>), due to the ongoing initiative for replacing/eliminating globe valve control and operation devices with monitoring functions (around 290 devices were replaced/decommissioned in the two-year period 2018-19) and to the initiative of installing new high-efficiency thermal power plants to replace existing heaters, with the elimination of the related pneumatic equipment (48 heaters replaced in the two-year period 2018-19);
  - reduction of pneumatic emissions (-0.24 Mm<sup>3</sup>) in the two-year period 2018-19, in 8 compression plants, due to the initiative of eliminating gas activation for the regulation of the hot water in the heat exchangers for the fuel gas of the compression units;
  - replacement of pneumatic actuators with air models in the Minerbio and Brugherio storage facilities.
- Various strategies were implemented to reduce emissions from leaks including the Leak Detection Repair (LDAR) approach. The LDAR programmes consist of campaigns for monitoring system components to identify methane leaks and plan maintenance operations. Specifically, the following results were achieved in 2019:
  - finalisation of preparatory activities for carrying out the LDAR technique with own staff, which is expected to begin in 2020;
  - reduction of network emissions from leaks (-0.8 Mm<sup>3</sup>), due to the continuation of the initiative to install a ball valve in the network pressure reduction systems which, in the three-year period 2017-2019, led to the modification of 220 systems;
  - reduction of emissions resulting from the depressurisation of systems, especially in some storage facilities, thanks to the particular operating conditions.

## Indirect energy emissions (Scope 2)

Snam calculates its indirect emissions through two different approaches: the Market Based (MB) approach, which gives a zero CO<sub>2eq</sub> emission factor for energy consumption from renewable sources, and the Location Based (LB) approach, which instead considers an average emission factor of the national electricity grid. In particular, the MB approach highlights the contribution to the reduction of Scope 2 emissions from the use of energy produced from renewable sources. Emissions from acquisitions of electricity, steam and heat produced by third-parties are negligible in terms of quantities for Snam (around 0.03 million tonnes of CO<sub>2eq</sub> with an MB approach, equal to 1.7% of total emissions).



### 2016-2019 GHG Scope 2 emissions



In 2019 total electricity consumption increased by +12% compared with 2018 as a result of the increase recorded at GNL Italia (+80%) resulting from the greater quantity of gas regasified (+170%) and greater ICT consumption (+18%). The latter result from:

- a redistribution of the data centres with an increase in the fixed consumption of structural components that the Snam Group remained responsible for;
- moving the data centre from Inverno to Crema which generated parallelism for around 6 months.

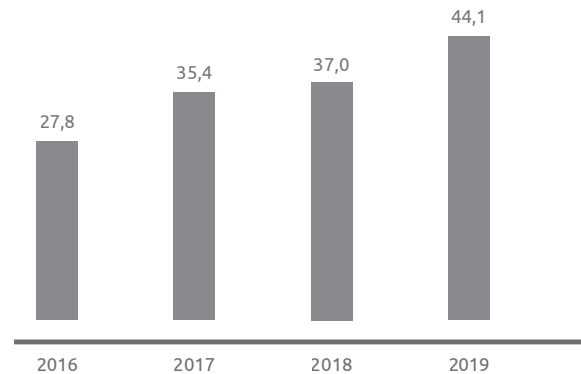
The greater consumption resulting from the LNG site was completely neutralised in terms of Scope 2 emissions thanks to the procurement of green electricity, while the emissions due to the greater consumption recorded at the other sites were partly mitigated by a new gas power plant switching to a new green electricity power plant (Enna) from 2019.

A further increase was also due to the acquisition of the new companies and the counting in Scope 2 emissions of, among other things, the emissions associated with the use of heat from 2014.

Emissions (calculated according to the MB method) stood at 32.4 thousand tonnes of CO<sub>2eq</sub> (+1.7% compared with 2018), with a broadly lower increase compared with the energy fees (+12.1%), to indicate the increase in electricity consumption produced from renewable sources, which went from 37% in 2018 to 44% in 2019, thereby preventing the emission into the atmosphere of around 16 thousand tonnes of CO<sub>2eq</sub> (12 thousand tonnes of CO<sub>2eq</sub> in 2018). The emissions prevented correspond to approximately 50% of total Scope 2 emissions.

Note that in 2019 Snam established a Scope 2 emissions reduction plan, also introducing the goal of using at least 55% green electricity by 2030.

### Green electric energy breakdown (%)



The programme for compression stations to switch to green electricity is continuing together with the use, by Snam4Mobility, of electricity produced from renewable sources in CNG plants as set out in the development plan.

### Other indirect emissions (Scope 3)

Scope 3 indirect emissions in 2019 stood at around 538 thousand tonnes of CO<sub>2eq</sub>, a rise compared with emissions in 2018 (438 thousand tonnes of CO<sub>2eq</sub>) and refer for 99% to the emissions from the supply chain and for the remaining part to travel by employees.

The increase in emissions compared with 2018 is mainly attributable to an increase in procurement (around +10%) and to the diverse nature of procurement.

The emissions related to the supply chain were calculated by applying a method developed by a leading international company in the field of the Carbon Footprint analysis. Further initiatives are ongoing and are aimed at promoting a culture of energy saving and minimising indirect emissions associated with Snam's activities: the adoption of green procurement criteria for goods and services, sustainable mobility initiatives and the implementation of initiatives for energy savings directed at employees (company shuttle services, public transport subsidies, smart working and the use of video-conferencing for meetings) and the launch of the supply chain CDP programme are just some of the initiatives in progress that contribute to the reduction of this type of emissions.

# Performance indicators





# Performance indicators

Snam's main target metrics relating to the decarbonisation strategy are listed below.

	2016	2017	2018	2019	
Energy consumption (TJ)	10,957	12,582	13,238	12,152	
Electricity consumption (MWh)	87,290	93,810	104,694	117,378	
Use of green electricity (MWh)	24,265	33,254	38,709	51,791	
% of green electricity out of the total (%)				44%	KPI 2030: reach 55%
Scope 1+2+3 GHG emissions (Mt CO <sub>2eq</sub> )	1.80	1.75	1.97	1.92	
Scope 1 and 2 GHG emissions (Mt CO <sub>2eq</sub> )	1.47	1.53	1.53	1.38	
% Scope 1 and 2 emissions reduction compared with 2016 (%)				-6%	KPI 2030: -40% vs. 2016
Scope 1 GHG emissions (Mt CO <sub>2eq</sub> )	1.44	1.50	1.50	1.35	
- of which CO <sub>2</sub> from combustion	0.60	0.69	0.73	0.66	
- of which CO <sub>2eq</sub> from methane	0.83	0.81	0.77	0.69	
- of which CO <sub>2eq</sub> vented from methane	0.22	0.18	0.16	0.13	
- of which CO <sub>2eq</sub> fugitive from methane	0.39	0.40	0.39	0.37	
- of which CO <sub>2eq</sub> pneumatic from methane	0.22	0.22	0.21	0.18	
- of which CO <sub>2eq</sub> unburnt from methane	0.005	0.006	0.006	0.005	
- of which CO <sub>2eq</sub> from HFC			0.0001	0.0015	
Scope 2 GHG emissions (Mt CO <sub>2eq</sub> )	0.028	0.029	0.032	0.032	
Scope 3 GHG emissions (Mt CO <sub>2eq</sub> )	0.33	0.22	0.44	0.54	
Total natural gas emissions (Mm <sup>3</sup> )	48.24	46.76	44.37	39.25	
% reduction compared with 2016				-19%	KPI 2025: -40% vs. 2016
Natural gas recovered by maintenance (Emix recovered / Emix punctual potential)				59%	KPI: prevent at least 33%
Gas injected into the network (Mm <sup>3</sup> )	70,627	74,590	72,820	75,369	
Emix. GHG Scope 1 / Gas injected (t CO <sub>2eq</sub> /Mm <sup>3</sup> )	20.4	20.1	20.6	17.9	

# Annex

## TCFD CORRELATION TABLE

TCFD RECOMMENDATIONS	DISCLOSURE
<b>GOVERNANCE</b>	
Declaring the governance model of the organisation in relation to the risks and opportunities related to climate change.	
a) Describing the supervision of the Board of Directors of the risks and opportunities related to climate change.	"The role and oversight of the Board"
b) Describing the role of management in assessing and managing the risks and opportunities related to climate change.	"The role and awareness of management"
<b>STRATEGY</b>	
Declaring the actual or potential impacts of the risks and opportunities related to climate change on the business, strategy and financial planning of the organisation.	
a) Describing the risks and opportunities relating to climate change that the organisation has identified in the short, medium and long-term.	"The risks related to climate change" "The opportunities related to climate change"
b) Describing the impact of the risks and opportunities related to climate change on the business, strategy and financial planning of the organisation.	"The risks related to climate change" "The opportunities related to climate change"
c) Describing the resilience of the organisational strategy, taking into consideration different climate-related scenarios, including a scenario of 2°C or lower.	"The development of the energy and climate scenario" "Snam scenarios" "A strategy for the future" "The risks related to climate change" "The opportunities related to climate change"
<b>RISK MANAGEMENT</b>	
Declaring how the organisation identifies, assesses and manages the risks related to climate change.	
a) Describing the processes of the organisation to identify and assess the risks related to climate change.	"A centralised risk management model"
b) Describing the processes of the organisation to manage the risks related to climate change.	"A centralised risk management model"
c) Describing how the processes of identifying, assessing and managing the risks related to climate change are integrated in the overall risk management of the organisation.	"A model that integrates climate change"
<b>METRICS AND TARGETS</b>	
Declaring the metrics and targets used by the organisation to assess and manage the significant risks and opportunities related to climate change.	
a) Declaring the metrics used by the organisation to assess the risks and opportunities related to climate change in line with its strategy and risk management process.	"Acting for tomorrow" "Performance indicators"
b) Declaring the Scope 1, 2 and 3 greenhouse gas effect emissions (GHG) and related risks.	"Acting for tomorrow" "Performance indicators"
c) Describing the objectives used by the organisation for managing the risks and opportunities related to climate change and performances related to the objectives.	"Acting for tomorrow" "Performance indicators"



By  
Snam

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Inarea Strategic Design

Layout  
Inarea Strategic Design

Printing  
Periskop (Italy)  
Printed on ecological paper  
Fedrigoni Symbol Freelifa

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May 2020



