CLIMATE CHANGE REPORT

2021

Energy to inspire the world

Snam is Europe's leading operator in natural gas transport and storage, with an infrastructure capable of enabling the transition to hydrogen.

It operates a transmission network of around 41,000 km between Italy, Austria, France, Greece and the UK and holds 3.5% of the world's storage capacity. It is among the top ten Italian listed companies by market capitalization.

With its 80 years of experience in the development and management of networks and plants, it guarantees security of supply and promotes energy transition in the areas it serves. In addition to transport and storage, Snam is also a major player in LNG regasification. The company is also active in Asia, the Middle East and North America.

Snam is committed to renewing its infrastructure with hydrogen-ready standards and to developing integrated projects along the green gas value chain, with investments in biomethane, hydrogen, sustainable mobility and energy efficiency. It also creates new green areas through a benefit company focused on forestation projects.

Snam has set a zero net Scope 1 and 2 CO_2 equivalent emissions target by 2040 and a Scope 3 indirect emissions reduction target (subsidiaries, suppliers) by 2030.

www.snam.it

CLIMATE CHANGE REPORT

2021

Snam's Reports

INTEGRATED REPORTING MEANS INTEGRATED THINKING

Snam has been following, for some time, a path of integration of the reporting processes based on the assumption that "integrated reporting means integrated thinking. This approach aims at responding to the requests of all stakeholders by means of an extensive, transparent and complete, as well as responsible, corporate reporting. Thanks to the publication of several specific reports, Snam provides a timely and in-depth view of its activities, performance and future objectives.

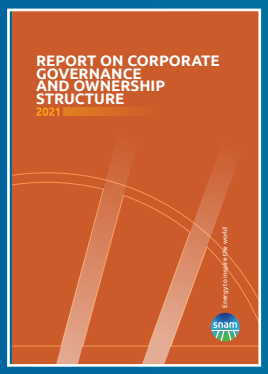
Voluntary

SUSTAINABILITY REPORT
It describes performances and future goals regarding the environmental, social and governance topics (ESG), strengthening the relationship and collaboration with all the stakeholders of the Company.

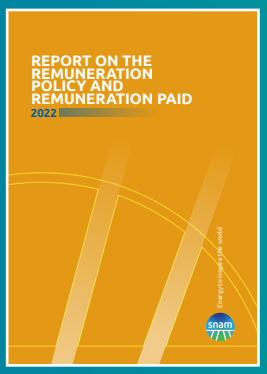
Mandatory

ANNUAL REPORT
It provides a comprehensive view of financial and non-financial performance through the information contained in the Report on Operations - Integrated Report, the Non-Financial Statement prepared in accordance with Legislative Decree 254/2016, in the Consolidated and Annual Financial Statements.

CONSOLIDATED NON-FINANCIAL STATEMENT
It provides information on the company's management and organisational methods, policies, risks and how they are managed, and performance on sustainability issues relevant to the Group. The document, drawn up in accordance with Legislative Decree 254/2016, is a specific section of the Annual Financial Report.



REPORT ON CORPORATE GOVERNANCE AND OWNERSHIP STRUCTURE
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.



REPORT ON THE REMUNERATION POLICY AND REMUNERATION PAID
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.

FOCUS ON

CLIMATE CHANGE REPORT

This report describes the Company's approach to climate change, the strengthening 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 drawn up in compliance with the recommendation of the "Task Force on Climate-related Financial Disclosures" (TCFD) of the Financial Stability Board (FSB) and reports on: the **global energy and climate scenarios** taken into consideration by the Company; the strategy developed ad hoc to respond to changes in the reference context; the **risks and opportunities related to climate change**, with its impacts and management approaches; the **roles and responsibilities of the organisation** for the management of climate change issues; the **performance and climate objectives** set in the medium to long term.

CONTENT

LETTER TO THE STAKEHOLDERS

Dear Stakeholders,
despite the continuation of the pandemic and its serious health and social impacts, 2021 was a year characterised by a recovery in economic activity compared to 2020, also thanks to the vaccination campaign, even though this improvement happened in a gradual and differentiated manner throughout different areas of the world. At the same time, the year was also marked by a renewed and strengthened global commitment to combating climate change. COP 26 in Glasgow achieved less than what we hoped for though certainly more than expected results. The world now has a clear perspective — we must limit global warming to 1.5 degrees as well as achieve carbon neutrality. A large number of countries, accounting for around 90% of global CO_2 emissions, have made commitments to this effect. In the coming years, the ability of governments and companies to implement projects and infrastructures capable of ensuring the ecological transition will become decisive, harnessing an unprecedented volume of public and private investment, which is also attributable to domestic post-Covid recovery and resilience plans. At the same time, in a context characterised by a sharp rise in energy prices as early as summer 2021 and increasing geopolitical tensions in the heart of Europe — culminating with Russia's invasion of Ukraine in February 2022 — it will be necessary to develop short- and long-term initiatives to combat high energy prices, promote diversification and security of the supply and to ensure a transition as just as possible. Today more than ever, in a context characterised by sharp increases in energy prices and geopolitical tensions, Snam's infrastructure is proving its strategic value in terms of both diversification of supplies and future prospects. In particular, our network and our storages, the most developed in the European Union, represent a guarantee for the energy security of Italy and the whole of Europe, together with the start-up of TAP, in which Snam is a major shareholder.
Building on these strengths, combined with our growing exposure to the energy transition, we can play an even greater role in the momentous transformations expected over the next decade. In the vision for 2030 presented last November together with the 2021-2025 strategic plan, we outlined the Snam of the future, focusing on three areas of activity (energy transport networks, energy storage and renewable gas projects) with possible investment opportunities totalling 23 billion euros. Particularly, by 2030 we aim at building the first portion of a national hydrogen network, a 2,700 km backbone crossing Italy from south to north. We are becoming an energy infrastructure company that is no longer focused solely on transporting and storing natural gas but also biomethane, hydrogen and CO_2, focusing on achieving carbon neutrality and on the contribution we can make to the energy transition in the territories where we operate. Now more than ever, ESG factors are at the core of our strategy.
Towards this path, 2021 stood as an important year in this regard. We announced our entry into the capital of the gas pipelines connecting Algeria and North Africa to our network in Italy; this is a strategic asset for the country's energy security and for Europe's energy transition, as well as for hydrogen development. We supported the growth of our associate company De Nora, which is proving to be a technological leader in major global projects for the generation of hydrogen from renewable sources. We continued to assess the readiness of our infrastructure: almost all of our pipelines can transport a hydrogen mix of up to

100%, most of them with no or limited reductions in operating pressure. We are also encouraged by the tests carried out in cooperation with universities and research centres on the possibility of storing up to 100% hydrogen on our sites, without observing any changes or alterations. We also launched several projects in various industries — ranging from steel and ceramics to mobility — as well as the first global start-up accelerator run by a company and focused on hydrogen. These initiatives complement the progressive enrichment of our platform in biomethane thanks to the acquisition of Asia's portfolio of plants in Italy, making us one of the leaders in the development of green gases serving the decarbonisation of the system.

We are laying the foundations for building the network of the future, which will be managed in a more efficient way thanks to the skills of our people and the support of technology, continuing along the path marked out by the TecHub in Bologna, Italy's first highly digitalised district, which we inaugurated last spring.

Through Renovit, our new company specialising in energy efficiency, in which CDP Equity has a stake and which became a B Corp this year, we have upgraded condominiums, businesses and Public Administration buildings, and with Arbolia we have launched new urban forestation projects in synergy with the Deposits and Loans Fund, planting 30,000 new trees in Italy.

We are at the forefront of the race towards 'net zero' emissions. After having committed to achieving net zero Scope 1 and Scope 2 emissions by 2040, with specific milestones that include a target for the containment of methane emissions by 2025, we are the first company in our sector in Europe to introduce a target to reduce indirect Scope 3 emissions from our suppliers and international associate companies. In addition to environmental targets, we introduced new metrics on all areas of our ESG scorecard, from gender equality to governance, and promoted new initiatives for the well-being of people and communities, including through our Foundation.

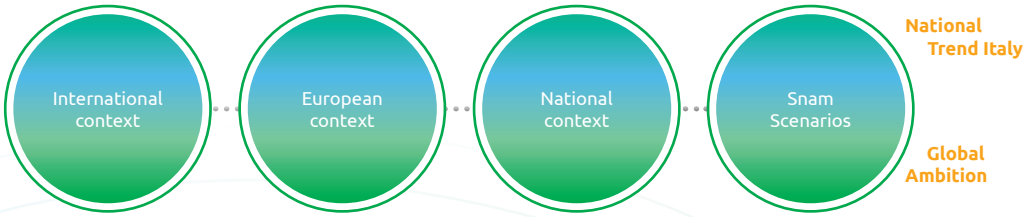
Snam's evolution begun six years ago — it started out as a company focused entirely on fossil gas infrastructure and has now become a leading energy transition and ESG company that is getting stronger and stronger. Our assets and skills will be key to enabling us to seize new development opportunities and support Italy and all the countries in which we operate towards the net zero target together with all our stakeholders.

EXECUTIVE SUMMARY

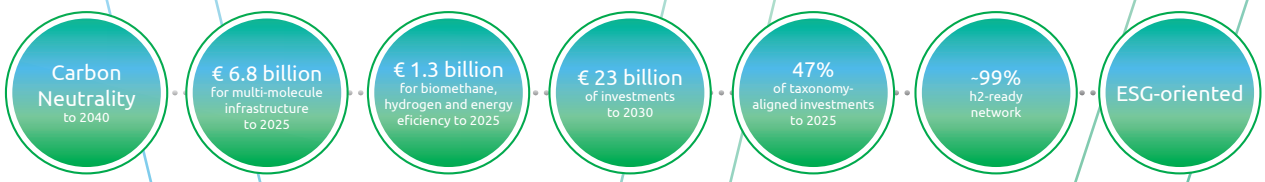
This document represents a transparent commitment to Snam's stakeholders in the discussion on climate change.It's an important opportunity to illustrate the Company's approach to directing its strategy in the context of energy transition, as well as its commitment to reaching the energy and climate goals 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 roles and responsibilities within the Group for managing climate change, the global energy and climate scenarios, the new 2021-2025 Strategic Plan adopted by Snam and the 2030 Vision, the ERM (Enterprise Risk Management) Model for identifying, assessing and managing risks and opportunities related to climate change and the climate performance and objectives set for 2030 and 2040 in relation to the "Towards Net Zero" decarbonisation strategy.

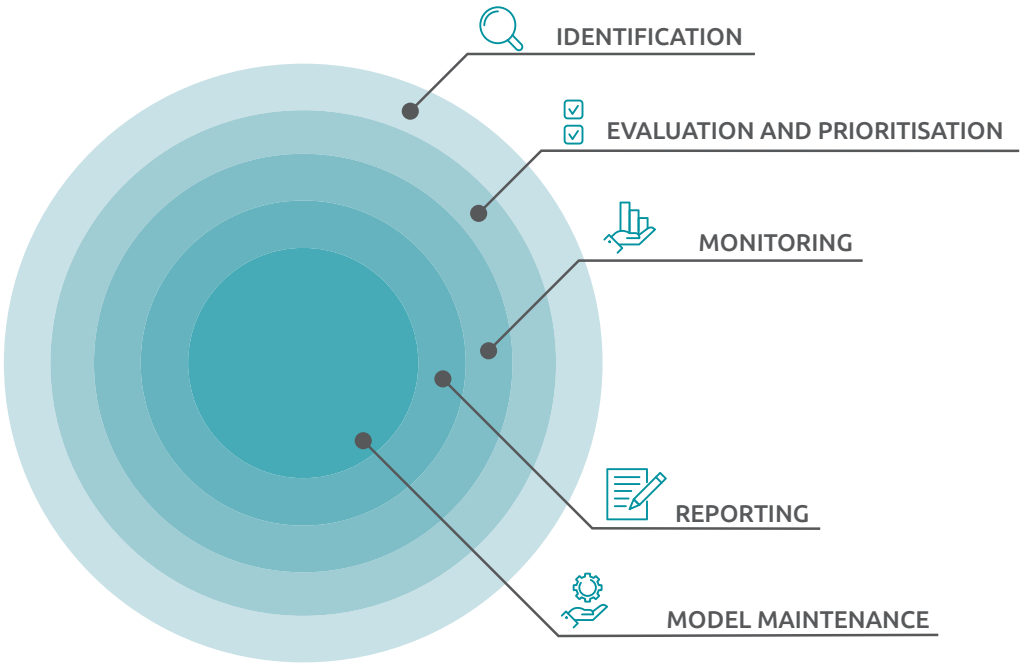
Context and reference scenarios. This chapter presents the main global energy and climate scenarios that characterise the reference context of Snam's operations. The chapter explores the importance of hydrogen and biofuels in achieving carbon neutrality in the long term, as well as the role of natural gas as a means to facilitate decarbonisation and energy transition in the short to medium term. Lastly, the chapter also outlines the different gas supply and demand scenarios developed by the Company, which are the basis of the new Strategic Plan and which consider a time horizon of 2040.



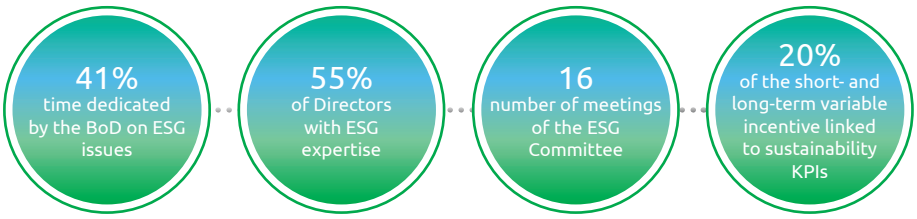
The transition to Net Zero. The chapter takes up Snam's **"Towards Net Zero"**, strategy, with which in 2020, the company announced its ambitious goal of carbon neutrality by 2040. In addition, the **2021-2025 Strategic Plan**, was presented, together with the **2030 Vision**, under which, compared to the previous year, investments were strengthened to accelerate towards "Net Zero". Growth to 2030 is based on three fundamental pillars - energy networks, storage and new green projects - supported by four enabling competences - know-how, a solid financial structure, business orientation towards ESG issues and Net Zero objectives, consolidation and the creation of strategic partnerships, with the ultimate aim of making Snam a "multi-commodity" infrastructure company, i.e. capable of transporting and storing different types of gas, as well as investing in the hydrogen, biomethane and energy efficiency businesses.



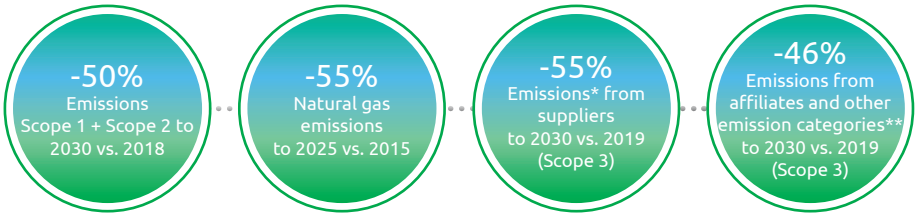
The ERM model and the risks and opportunities related to climate change. The chapter describes the risks and opportunities relating to climate change that could affect the Company's business and that Snam evaluates and constantly monitors to continue to operate sustainably in the long-term as well, directing its strategies. The actual and prospective risks and opportunities associated with Snam's corporate strategy are identified, assessed and managed through the ERM Model, which integrates the risks and opportunities related to climate change.



Governance for the management of climate change. This chapter presents Snam's governance system which, among other things, has the task of overseeing ESG (Environmental, Social & Governance) issues, including aspects related to climate change. The activities of the Board of Directors (BoD), the Chief Executive Officer (CEO) and the management, aimed at ensuring the proper management and monitoring of these issues in the conduct of the business, fall within this context. The Board of Directors is supported by various committees, including the Environmental, Social & Governance ("ESG") Committee, the Audit, Risk and Related Party Transactions Committee and the Remuneration Committee.



Acting for tomorrow Snam and commitment against climate change. The chapter illustrates the Company's objectives for reducing climate-changing emissions and presents the results achieved as part of Snam's concrete commitment to decarbonisation, achieved through the monitoring and continuous improvement of its performance.



* Emissions are expressed in terms of supply chain emission intensity (tCO2eq/M€ CapEx)
** Other emissions considered are those related to the production and transmission of fuel and energy, employee business and home-work travel

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.

La Task Force on Climate-related Financial Disclosures has structured its **recommendations** for climate-related financial reporting into **four** thematic **areas**, applicable by all organisations without distinction. The recommendations in the four areas are summarised below:

Governance: describe the governance model of the organisation in relation to the risks and opportunities related to climate change;

Strategy: describe 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: describe how the organisation identifies, assesses and manages the risks related to climate change;

Metrics and Targets: describe the metrics and targets used by the organisation to assess and manage the significant risks and opportunities related to climate change.

CONTEXT AND REFERENCE SCENARIOS

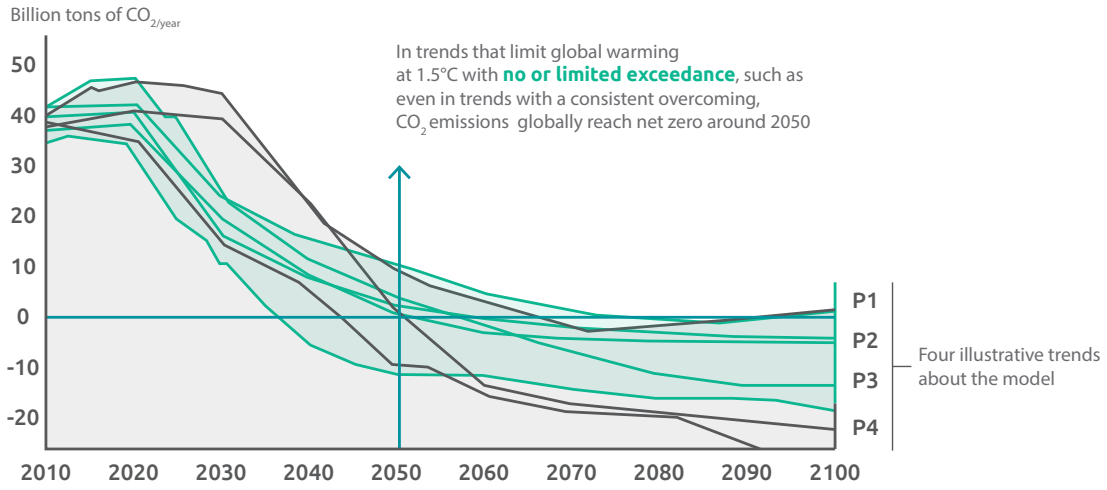
In recent years, both at national and international level, medium- and long-term policies and objectives aimed at reducing emissions and achieving carbon neutrality by 2050 have placed the world of energy in a central role. In this context, industry players can be enablers of the energy transition, encouraging the increased use of energy from renewable sources and the deployment of green gases, such as biomethane and hydrogen, and of decarbonised gas through carbon capture, utilisation and storage (CCUS) technologies. The analysis of the context in which Snam operates and the scenarios that are being outlined for future years allow the Group to have a reference framework on energy requirements and the sources that will meet them, as well as to draw up infrastructure development plans capable of meeting the needs of the energy transportation system.

THE INTERNATIONAL CONTEXT

The **"Global Risks Report"**, published annually by the World Economic Forum, confirms once again in 2021 that the three main risks on a global scale relate to the environmental sphere, namely: extreme weather conditions, failure of climate action and man-made environmental damage. These risks, if not properly controlled, could generate irreversible impacts, such as longer hot seasons and shorter cold seasons, critical damage to the agricultural system, health and human lives, and financial losses. In addition, due to climate change and man-made damage, geophysical phenomena will become increasingly extreme, rainfall and flooding will intensify, and sea levels will continue to rise, with dramatic consequences for biodiversity.
These scenarios are confirmed by the report **"Climate Change 2022: Impacts, Adaptation and Vulnerability"**, published by the Intergovernmental Panel on Climate Change[1] (IPCC). The paper highlights that the effects of climate change are advancing much more rapidly than previously assessed and that this has already caused widespread adverse impacts with consequent loss and damage to nature and people, recognising that today some 40% of the world's population is highly vulnerable to climate impacts. The IPCC stresses the **urgency of immediate and more ambitious action** to address climate risks, recognising how **crucial the next decade is.** . In addition, an analysis by the International Energy Agency (IEA), following COP26 in 2021, states that even if all the emission reduction targets set by states were met on time (by 2050), global warming would remain at 1.8°C by the end of the century, 0.3°C higher than predicted by the Paris Agreement. Therefore, the actions that will be developed in the next decade will be crucial for reducing CO_2 emissions and meeting climate targets.

1 Thousands of scientists from 195 member countries participate in the work of the main international body for the assessment of climate changes, created in 1988 on the initiative of the World Meteorological Organisation (WMO) and the United Nations Environment Programme (UNEP).

TOTAL NET CO_2 EMISSIONS



Source: Special Report on the impacts of Global Warming of 1.5°C, IPCC (2018).

In order to significantly reduce GHG emissions, it is crucial to achieve the energy transition, which, as indicated in Bloomberg NEF's **New Energy Outlook 2021** will be possible by reducing energy demand, decarbonising electricity and other fuels, electrifying end-use energy and profoundly reducing agricultural emissions. In addition, complementary decarbonisation technologies such as hydrogen, carbon capture and storage (CCS) solutions and nuclear energy will play a key role in achieving a more sustainable economic model.

In this context, the energy system, responsible for 75% of global greenhouse gas emissions, cannot disregard the role that gas and related infrastructures play in achieving the targets for reduced emissions, penetration of renewable energy sources and energy efficiency. As for energy transition, gas can, on the one hand, provide the services with flexibility, security and diversification of energy supply sources and, on the other hand, support a path towards a low-carbon economy at the lowest overall cost for the system, thanks to the availability of an infrastructure network already present and widespread, such as the Italian one, and at the same time promote the decarbonisation of the same gas carrier through the development of renewable gases such as biomethane, hydrogen and synthetic gas.

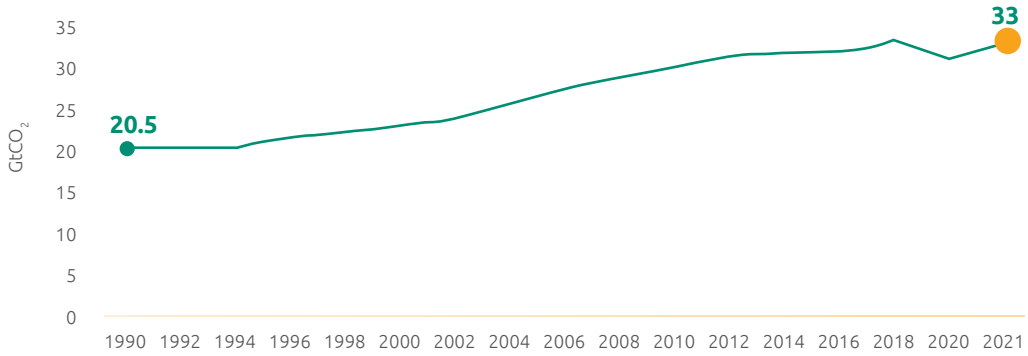
Globally, public policies have boosted gas consumption in important markets such as China, in order to identify a coal replacement. Similarly, in Europe and the United States, replacing coal with gas is leading to better air quality and carbon emissions outcomes. Slowly and steadily, other countries, such as India, are also trying to adopt these models. Climate change-focused policies that will take effect over the next 10 years may provide growth opportunities for the gas industry, a flexible and programmable resource that can complement the growing energy production from renewable sources that is emerging.

In this context, biomethane, hydrogen and gas with carbon capture could play an important role in decarbonising those sectors of the economy that are currently considered as hard-to-abate,and provide long-term growth opportunities for the gas industry. The New Energy Outlook estimates that 75% of the emission reductions can be achieved by the combined use of electricity and green hydrogen [2]. As the energy transition continues, gas transmission and storage infrastructure can be prepared for hydrogen blending, and for the transport of pure hydrogen, at much lower cost than building new hydrogen networks.

2 By green hydrogen we mean the production of hydrogen that occurs through the electrolysis of water, in which electricity is used to "break down" the water into hydrogen and oxygen without any CO_2 emissions at the point of release.

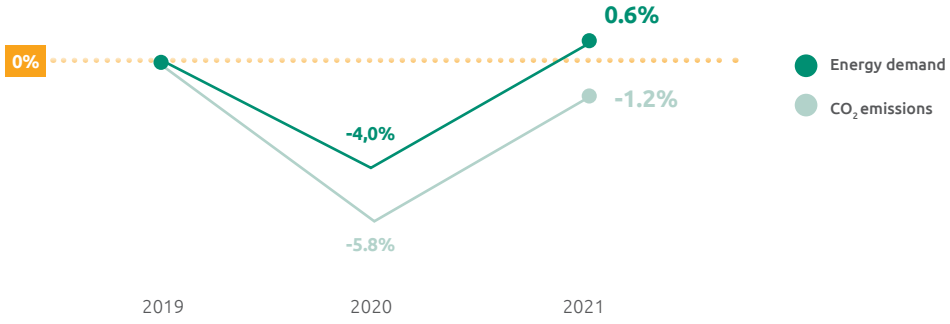
The World Energy Outlook (WEO) 2021 and the Global Energy Review 2021, published by the IEA, point out that in 2020, despite the fact that global markets faced major slowdowns caused by the Covid-19 pandemic, renewable energy sources such as wind and photovoltaic continued to grow rapidly. At the same time, forecasts for the coming years show that the speed of change and growth of a more electrified, efficient, interconnected and clean energy market could be offset by the growth in natural gas, coal and electricity prices as recorded in 2021. According to the IEA, this trend, accelerated by a surge in demand for energy and electricity, accompanied by an increase in coal use, will lead global energy-related CO_2 emissions to rise by 5% or 1.5 billion tonnes in 2021, eliminating reductions related to pandemic lockdowns in 2020. Such growth represents a 4% increase in CO_2 emissions and the second largest annual increase in absolute terms in history.

GLOBAL ENERGY-RELATED CO_2 EMISSIONS AND ANNUAL CHANGE (1990-2021)



Source: IEA reprocessed data, Global Energy Review 2021

CHANGES IN ENERGY DEMAND AND ENERGY-RELATED CO_2 EMISSIONS (2021 VS. 2019)



Source: IEA reprocessed data, Global Energy Review 2021

After a decline in 2020, **electricity demand** could grow by more than 1,000 TWh in 2021 (4.5%), five times higher than the decline in 2020. Global electricity growth will outpace the expansion of low-emission technologies, and much of the residual growth will come from increased production from coal plants in Asia. In 2020, **demand for renewable energy grew** by a record 28% and demand for non-renewable sources fell, enabling a 3% reduction in global energy sector emissions. Estimates suggest that 2021 could also set a new record in demand for renewables, which could reach 30%.

Regarding **demand for natural gas**, the IEA World Energy Outlook 2021 report predicted growth of 3.2% in 2021, leading to an increase in prices around the third quarter of 2021. Although low-carbon gases still account for a small share of total gas supply (currently less than 1%), their demand is growing rapidly. Figures show **global biomethane production** increasing to over 5 billion cubic metres (bcm) by 2020. This increase is largely attributable to supportive policies in Europe and North America. The IEA expects growth in biomethane production to remain stable in 2021. Although still in its infancy, low-emission **hydrogen production** is experiencing a strong wave of interest and is set to grow in the years to come.

The IEA has also predicted that spending on energy efficiency improvements will increase by 10% in 2021 in response to economic growth and the first effects of recovery programmes. This is also with a view to stimulating projects in new areas, including low-emission hydrogen and CCUS technologies.

The report highlights four key measures that will keep global warming within the 1.5°C of the Paris Agreement over the next decade:

Use of renewables

Thanks to the development of solar and photovoltaic, as well as the spread of other low-emissionsystems, strong infrastructure and greater flexibility in systems, in addition to a rapid phase-out of coal and the expansion of the use of electricity in transport and heating

Energy efficiency

Through the implementation of measures that regulate the demand for energy services by means of material efficiency and behavioural change

Reducing methane emissions

From fossil fuels, which will affect the energy sector, particularly oil and gas, where methane emission reductions are most cost-effective

Innovative clean energy systems

Through the adoption, especially in hard-to-abate sectors, of technologies that are still under development, including hydrogen-based and other low-emission fuels, and CCUS technologies

In this context, COP26, held in Glasgow in November 2021, represented a turning point in achieving carbon neutrality: political commitments, technology, policies and funding will be crucial for the development of replicable and scalable projects, which are still missing to date, but necessary to achieve climate targets. COP26 brought consensus on the significant role that green gases can play. Electricity will make up about 50% of the energy mix by 2050 and about one-third of the system will be based on biomethane and low-emission gases, in particular, hydrogen.

COP26 helped launch a significant investment opportunity for the energy transition, in particular the Glasgow Financial Alliance for Net Zero agreed to invest over $130 trillion of private capital in activities related to achieving net zero emissions, many of which will involve midstream infrastructure.

Green gas driving carbon neutrality

- **Net Zero commitments** by countries responsible for **approximately 90%** of global emissions
- **Electrification** to reach about **50%** of the final energy mix
- **Green gases** needed to decarbonise hard-to-abate sectors; up to **1/3** of the energy mix by 2050

CapEx supercycle

- Molecules are responsible for a large percentage of the **$150tn** Global CapEx needed by 2050
- **$130tn** earmarked for carbon neutrality by financial institutions
- **$5tn** Average annual CapEx for 2020-50, **more than double** than current levels

Decreasing costs of technologies

- Accelerating the **reduction in the cost of hydrogen** to reach $0.5/kg by 2050 (BNEF)
- Creation of **global policies and incentives** to support large-scale dissemination

Central role of infrastructure

- Green gas infrastructure as an **enabler** of the energy transition
- **Integrated approach** to optimise energy supply and achieve higher yields

THE EUROPEAN AND NATIONAL STRATEGY

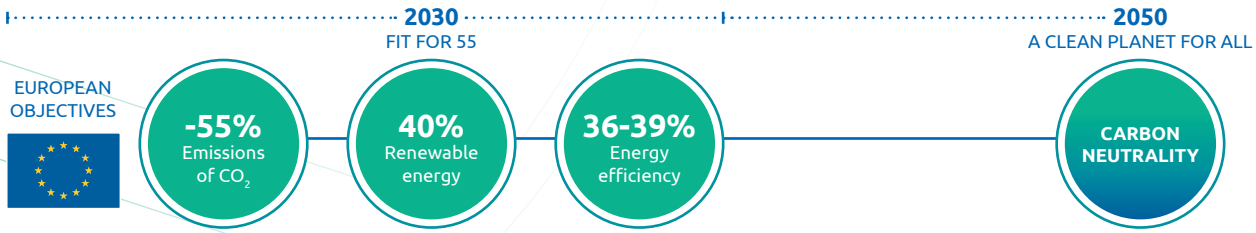
In 2019, the European Union endorsed the **"European Green Deal"** encapsulating carbon neutrality initiatives in line with the targets presented in the two 2018 packages: the "Clean Energy for all Europeans" to 2030 and the "EU 2050 Climate Long-Term Strategy". In 2021, as part of the Green Deal, a new package, the **"Fit for 55"**[3], was added, which strengthens the target of reducing carbon dioxide emissions to 55% by 2030 compared to 1990 levels, increases the share of energy produced from renewable sources to 40% and increases the percentage of energy efficiency for final and primary energy consumption to between 36% and 39% by 2030.

In order to support the 2030 and 2050 targets, the European Commission approved in 2020:

- the **EU Methane Strategy**, which places special emphasis on issues related to the measurement and reporting of methane emissions, the development of the biogas market and the implementation of Leak Detection and Repair (LDAR) measures;
- the **EU Strategy on Energy System Integration**, which envisages optimising the energy system by linking different energy carriers with each other and with end-use sectors, including buildings, transport or industry by leveraging emerging technologies, processes and business models, in order to foster the decarbonisation of European economies;
- the **Hydrogen Strategy**, which is part of the EU Strategy on Energy System Integration, sees hydrogen produced from renewable energy, e.g. through electrolysis, as key to the decarbonisation of hard-to-abate sectors.

In the context of post-pandemic recovery, the European Commission, together with the European Parliament and Member States, approved the **Recovery Plan for Europe** with the aim of repairing the economic and social damage caused by the Covid-19 pandemic. Specifically, the regulation laying down the EU multi-annual financial framework for the period 2021-2027 provides for a **long-term budget** of €1,073.3 billion, including the integration of the European Development Fund. In addition, there is also the **Next Generation EU**, a temporary instrument worth over €806 billion, designed to stimulate recovery. Together, the Budget and the Next Generation EU constitute the largest stimulus package ever funded by the EU, with the aim of allocating 30% of funds to combating climate change (the highest percentage ever for the EU budget).

3 In March 2022, the European Commission's policy document "RePower EU" was published, which opens up the possibility of giving the Fit for 55 package a greater boost by raising or anticipating the objectives set for renewable energy and energy efficiency



The EU Hydrogen Strategy

The European hydrogen strategy will accelerate the production of hydrogen from renewable sources on the continent to a penetration of 13-14% of gas in the energy mix. Hydrogen can make a significant contribution to reducing greenhouse gas emissions in a number of sectors, particularly energy. The strategy is also underpinned by the "Next Generation EU" recovery plan, which sees hydrogen as a priority investment to accelerate economic growth and resilience, job creation and consolidate European leadership in achieving carbon neutrality by 2050.

The pathway to hydrogen adoption and implementation is divided into three basic steps:

2020 – 2024

- Installed capacity for electrolysers: **6 GW**
- Hydrogen production: up to **1 Mton**
- **Creation of hydrogen valleys** to build production facilities close to the demand site and make electrolyser production scalable

2025

- Hydrogen as an **intrinsic element in the integrated energy system**
- Hydrogen production: up to **10 Mton**
- Hydrogen as the main **decarbonisation element of hard-to-abate sectors**

2030 ▶▶▶

- **Maturity and large-scale deployment** of renewable hydrogen technologies
- Enabling the **decarbonisation pathway of all hard-to-abate sectors**

To date, more than 30 countries have published hydrogen roadmaps, with more than 500 green hydrogen projects, over 90 GW of electrolysis capacity and $150 billion of investment. This momentum involves the entire value chain and is accelerating to support hydrogen production, transmission, distribution, retail and end-use applications.
At European and national level, institutions have also mobilised to facilitate the development of hydrogen, through plans and policies to support it. The main initiatives and their objectives are listed below:

POLICIES TO SUPPORT HYDROGEN

National targets @ 2030	10GW	3-4GW	5GW	6.5GW	Under development	5GW
Public support announced until 2026-30	**€12.5bn @2030** €1bn Carbon Contracts for Difference (CCfDs)* Infrastructure and regulatory support (€0.8bn, 9% CoE) Introduction of quotas for green hydrogen in public procurement Strong focus on imports	**Up to €5bn p.a.** CfDs for Renewable Energy System (RES) extended to H2 (€5bn p.a.) Mandatory blending of H2 under discussion Focus on blue and green hydrogen with carbon capture, storage and utilisation (CCUS) technologies	**€1bn @2030** CfDs for l'H2 Anticipated legislation for carbon capture and storage (CCS) Possible export	**€7bn @2030** Introduction of definitions for renewable/low emission H2 CFDs announced Strong focus on exports	**€9bn @2026** DOE Earthshot Approved support for H2 and CCS hubs Proposed tax credits for clean H2 (up to $3/kg) and enhanced CCS tax credit schemes	**€3.6bn @2026** Incentives in the PNRR by 2026 Hydrogen Guidelines see 2% hydrogen by 2030 H2 Hub for Europe

* Carbon Contracts for Difference are instruments that support the development and deployment of low-carbon technologies

At national level, hydrogen could cover almost **a quarter of Italy's entire energy demand by 2050**. In view of these considerations and in line with European policies, Italy intends to pursue this opportunity and promote the production and use of hydrogen through the measures envisaged in the **National Recovery and Resilience Plan** (PNRR). The PNRR, which is part of the Next Generation EU (NGEU) programme, envisages investments and a coherent package of reforms on which to allocate resources amounting to around **€220 billion** divided into six areas, including one concerning the **"Green revolution and ecological"**, transition, which includes a series of **objectives** linked to the theme of **"Renewable energy, hydrogen, network and sustainable mobility"**, including the "promotion of the production, distribution and end use of hydrogen in line with Community and national strategies". The adoption of hydrogen-based solutions, for which some €3.5 billion will be allocated, is one of the Plan's primary objectives. In addition, the PNRR foresees further measures to stimulate hydrogen production and consumption that will be necessary to facilitate the integration of the energy system. These measures will be provided in the form of tax incentives and instruments for the dissemination of green hydrogen consumption in the transport sector.

PNRR OBJECTIVES

HYDROGEN VALLEYS

Target

Creation of H_2 valleys (H_2 production, transport and final uses)

HYDROGEN IN RAIL TRANSPORT

Target

Construction of hydrogen production and refuelling infrastructure on railway lines

HYDROGEN REFUELLING STATION NETWORK

Target

Construction of refuelling stations with related production of hydrogen for road mobility

HARD-TO-ABATE

Target

Production and use of hydrogen in the production processes of sectors in which electrification is less economically convenient or difficult to implement

PRODUCTION OF ELECTROLYSERS AND DEVELOPMENT OF AN ITALIAN H_2 SUPPLY CHAIN

Target

Construction of the first (scalable) production plant for electrolysis systems, integrated upstream and downstream with a national supply chain concept with leverage on Italian SMEs

RESEARCH IN THE FIELD OF HYDROGEN

Target

R&D on key hydrogen applications: research projects, start-up incubation, industrial tests

PNRR: the opportunity to achieve energy transition

The Next Generation EU represented for Italy an opportunity for development, investment and reform, as well as a chance to resume a path of stable and lasting economic growth. The PNRR is in line with the pillars guiding the Next Generation EU and meets the parameters set by European regulations on the share of "green" and digital projects, which amounts to at least 37% of expenditure.
The adoption of hydrogen-based solutions, for which some €3.9 billion will be allocated, is one of the Plan's primary objectives. In line with the European Commission's Hydrogen Strategy, Italy plans to:

- develop flagship projects for the use of hydrogen in hard-to-abate industrial sectors, starting with the steel industry;
- encourage the creation of hydrogen valleys, particularly in areas with derelict industrial sites;
- enable the use of hydrogen in heavy transport and on selected non-electrifiable railway lines;
- support research and development;
- complete all necessary reforms and regulations to enable the use, transport and distribution of hydrogen.

In addition, the PNRR foresees further measures to stimulate hydrogen production and consumption that will be necessary to facilitate the integration of the energy system. These measures will be provided in the form of tax incentives and instruments for the dissemination of green hydrogen consumption in the transport sector.
Not only hydrogen, but also biomethane is one of the priorities of the PNRR, with planned investments of €1.92 billion, as it is strategic for the development of a circular and low-emission economy. The PNRR plans to:

- reconvert and improve the efficiency of existing agricultural biogas plants towards full or partial production of biomethane;
- support the construction of new plants for the production of biomethane;
- promote the dissemination of environmentally friendly practices in the biogas production phase;
- promote the replacement of obsolete and low-efficiency mechanical vehicles with methane/biomethane powered vehicles;
- improve the heat-use efficiency and emission reduction of existing small-scale agricultural installations for which conversion measures are not available.

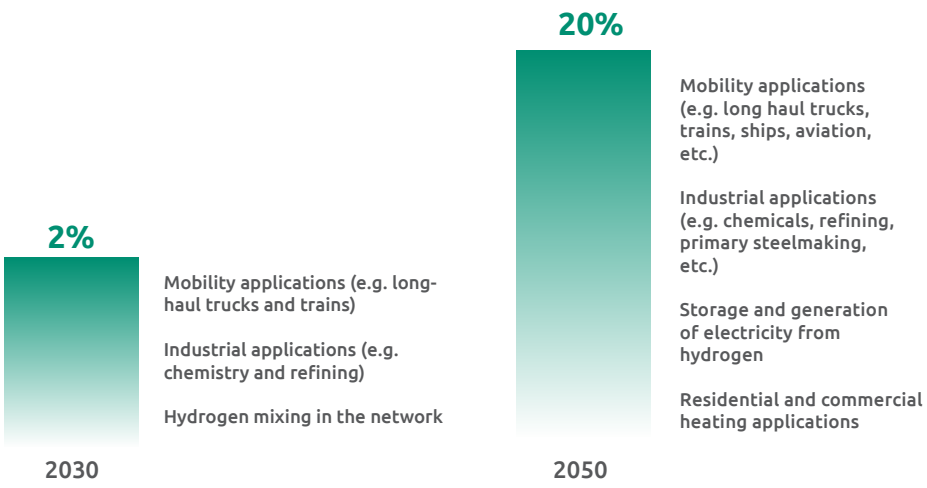
Finally, €2.7 million will be allocated to interventions for the environmental sustainability of ports (Green ports) aimed at improving the efficiency and reduction of energy consumption of port facilities and activities, also promoting the use of renewable energy. This project is intended to make a significant contribution to reducing greenhouse gas emissions by 55% by 2030.

While the PNIEC presents a medium-term vision, the **Italian long-term strategy on the reduction of greenhouse gas emissions**, published in January 2021, incorporates the energy-environmental dynamics to 2030 and extends them with the objective of achieving carbon neutrality by 2050 through the reduction of energy consumption by 40% compared to current levels and favouring the use of energy sources and vectors, such as electricity and renewables. In particular, the government has identified four levers to be integrated with energy efficiency action:

Switch from fossil fuels to renewable fuels including, hydrogen, bioenergy and synthetic fuels	**Boosting electrification of consumption**	**Resorting to CCS technologies**	**New options for the circular economy**

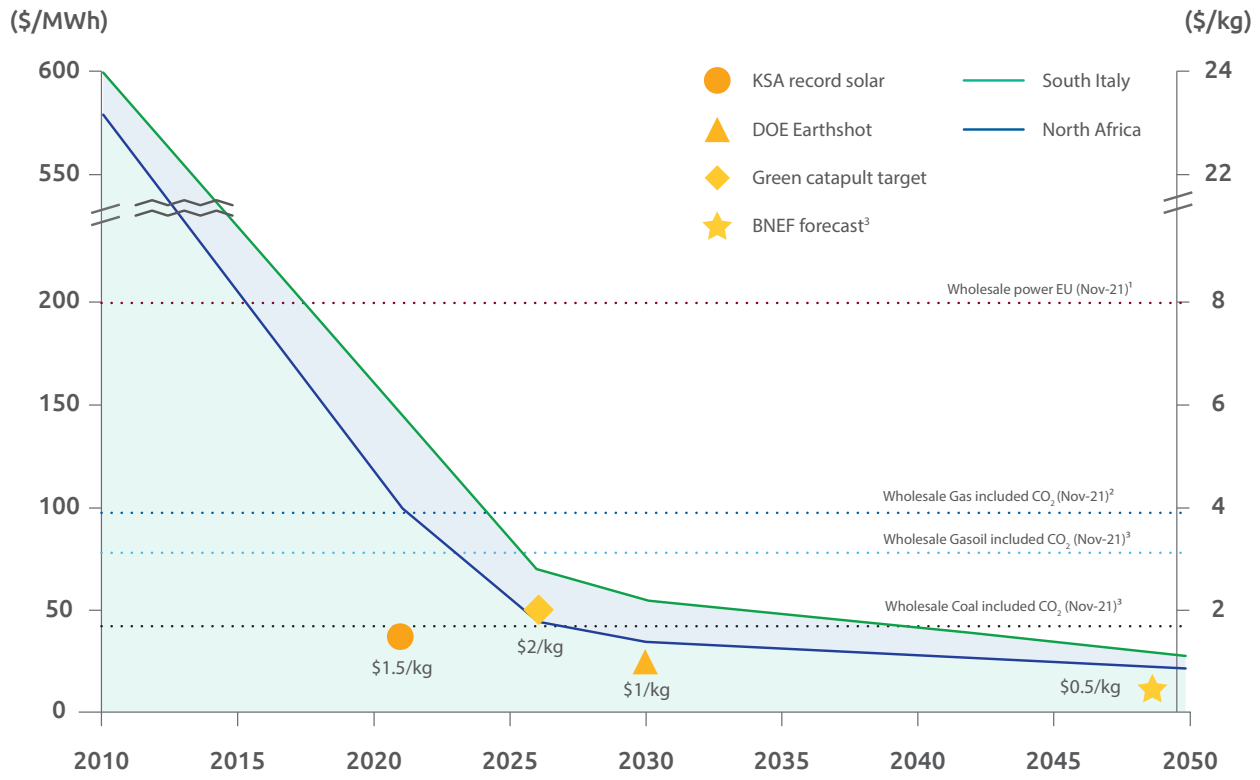
The growing focus on hydrogen and the benefits that its adoption could bring is also reflected in the Preliminary Guidelines of the **National Hydrogen Strategy**, published in 2020. This document aims to identify the fundamental role of hydrogen within the national decarbonisation pathway, in accordance with the current PNIEC and the packages and regulations defined at European level. The Guidelines envisage achieving a hydrogen penetration share of around 2% of final energy demand by 2030 (corresponding to around 7 kton/year), reducing CO_{2eq} emissions by up to 8 Mton and installing around 5 GW of electrolysis capacity for hydrogen production. This will be supported by the creation of **"hydrogen valleys"**, ecosystems encompassing both hydrogen production and consumption, and by some pilot projects on other sectors. Furthermore, according to the Strategy, blending low-carbon hydrogen into the grid can be an effective way to contribute to decarbonisation targets and stimulate the hydrogen market while investing in the development of the production and distribution chain.
With respect to hydrogen penetration rates, the Guidelines envisage that the 2% in 2030 could grow to 20% in 2050, thanks to the application of gas in various areas:

HYDROGEN PENETRATION PERCENTAGE



To achieve these goals, hydrogen must become more competitive and affordable; thus, to reduce production costs, the production capacity of electrolysers must be increased. In this context, pilot projects (e.g. Horizon 2020, IPCEI) and trials of new technologies could trigger investments in production capacity. According to analyses by the Hydrogen Council, BNEF and Snam, the cost of hydrogen, which was $600/MWh in 2010, is currently $100/MWh. To make it attractive in the market, the cost of hydrogen should be around $50/MWh, which, according to the Green Hydrogen Catapult, co-founded by Snam, will be achievable in 5 years, assuming a 25 GW capacity could be developed by then. At $25/MWh, hydrogen becomes competitive with fossil fuels, including coal, in most current uses. To reach this value, it will be necessary to stay below 1.5°C and to complete the phase-out of coal in China and India. According to BNEF latest estimates, the cost of hydrogen could be as low as $10/MWh in just 20 years. This means that hydrogen will be a green gas that can be used on a large scale as costs fall and, consequently, will accelerate emissions reductions, making it possible to achieve carbon neutrality by 2050.

COST OF GREEN HYDROGEN PRODUCTION



For Italy, therefore, hydrogen has a strong potential in which the government wants to invest. In this regard, a study carried out in September 2020 by **The European House – Ambrosetti**, in collaboration with Snam has analysed for the first time the Italian industrial hydrogen supply chain (considering production, transport, storage and use) and highlighted its competitive advantages at European and international level. In particular, the geographical position and the strength of the manufacturing sector emerge as favourable conditions for Italy to become a hydrogen hub. Possible opportunities for development and employment that hydrogen can generate have emerged from the study. In particular, it is expected that the increased use of hydrogen in end uses could lead to an increase in the cumulative production value of between €890 and €1.5 trillion for the hydrogen technology industry and related supply chains in the time frame between 2020 and 2050. Moreover, this increase in production will have strong implications for employment. A large number of jobs (between 320,000 and 540,000) are expected to be created across the entire value chain. In addition, exploiting the connection of the gas network with North Africa, the import of green hydrogen produced on African soil could be a further option for Italy, which would benefit from a cost reduction of between 10% and 15% compared to domestic production.

Last but not least, an increased role of hydrogen in final consumption could make a significant contribution to the global fight against climate change, facilitating the achievement of decarbonisation targets. In fact, the study shows that if 23% of end uses were represented by hydrogen, CO_2 emissions would be cut by 28% compared to the 2018 values.

THE ROLE OF GAS

The entire gas sector, and in particular all companies involved in the transport of natural gas, must make their contribution to achieving the objectives set by the international community. The European associations of Transmission System Operators (TSOs) for electricity and gas (ENTSO-E and ENTSOG) are increasingly active in facilitating and improving the cooperation of national operators in order to align the sector's priorities with European decarbonisation objectives.
ENTSOG (European Network of Transmission System Operators for Gas) that Snam belongs to, is a European association, 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, used as a reference for fuel prices and CO_2 emissions. There are three long-term scenarios included in the 2020 TYNPD, which will be updated in 2022, plus one short-term scenario:

- **Best Estimate 2025**, reflects current national and European policies and considers a sensitivity analysis in relation to the role of coal and gas in the energy sector at 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.

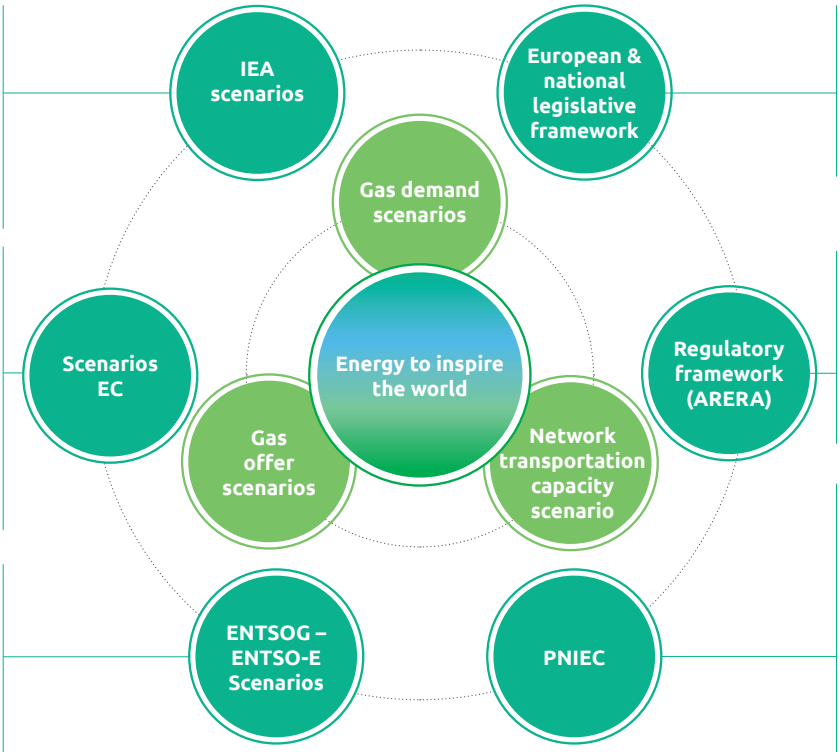
According to the 2022 TYNDP Draft Scenario Report, carbon neutrality can be achieved by 2050 through energy efficiency measures and the development of renewables, while ensuring the reliability of energy supply.
For the creation of an integrated system that can offer efficient decarbonisation solutions, hydrogen is a game changer for gas and electricity systems. The scenarios considered in the Draft Scenario Report are the Best Estimate 2022 and 2025, the National Trends Scenario, the Global Ambition and the Distributed Energy Scenario, in line with previous years, but for the first time considering sector-coupling methodologies and models that optimise the efficiency and flexibility of the entire system.

SNAM SCENARIOS[4]

International Energy Agency
The IEA scenarios, described in the World Energy Outlook, are used as reference for fuel prices (oil, gas and coal) and for CO_2 emissions.

European Commission
The scenarios developed by the European Commission define environmental and energy objectives at EU level (e.g. reduction of CO2 emissions of 55% to 2030, renewable energy share of 40% to 2030, energy efficiency share in end use between 36% and 39% to 2030).

ENTSOG-ENTSO-E
The scenarios developed by ENTSOG and ENTSO-E in the TYNDP include three long-term scenarios (National Trends, Global Ambition and Distributed Energy) and one short-term scenario (Best Estimate 2020 and 2025). The 2020 TYNDP is under review and the 2022 TYNDP will be released in the coming year.



Legislative framework
The European and national legislative context determines the regulatory constraints of reference in the definition of scenarios and of the Snam strategy

ARERA
The Regulatory Authority for Energy, Networks and the Environment establishes the criteria for defining transportation tariffs, which are binding in defining Snam's scenarios and strategy

PNIEC
The Integrated National Plan for Energy and Climate (PNIEC) was transmitted, in its final version, by the Italian government to Brussels in December 2019 and allows to target the objectives set for 2030 by the Clean energy for all Europeans Package. By 2023, the PNIEC will be updated with new targets and scenarios reflecting European regulatory developments.

Snam is at the forefront of the national energy transition path and, by 2030, aims to become a multi-molecule gas infrastructure, capable of transporting and storing different types of gas, including biomethane and hydrogen. Snam intends to leverage the existing sustainable, safe and technologically advanced infrastructure it has developed over time, and increasing investments in green projects, particularly in the fields of biomethane, hydrogen and energy efficiency. Snam develops its own gas supply and demand scenarios, which allow it to define short-, medium- and long-term business objectives in the context of the transformation and change of the energy transition. Until 2020, the Group used the three scenarios defined in collaboration with Terna and published in the "2019 Scenarios Description Document" [5]: BAU (Business-as-usual), CEN (Centralized) and DEC (Decentralized). In 2021, two new scenarios were considered to determine gas supply and demand projections to 2040:

- **National Trend Italy** (NT Italy)[6], developed by Snam and Terna, in line with the National Trends scenario (NT ENTSOs, making some updates with respect to the reference grid and electricity generation;
- **Global Ambition**, developed by ENTSOs as part of the 2020 TYNDP and in compliance with the 1.5 °C temperature limit targets of the Paris Agreement, presents a more centralised vision of the energy system, where, in addition to the development of renewables, the contribution of decarbonised gases, in particular hydrogen and biomethane, is important.

4 For the sake of completeness of information, of note is also the Representative Concentration Pathway 2.6 ("RCP 2.6"), the scenario used by Snam for the assessment of physical risks.
5 "Document describing the 2019 scenarios" prepared jointly by Snam and Terna in conformity with resolutions 654/2017/R/EEL and 689/2017/R/GAS.
6 The "NT Italy" scenario was published in February 2021 in compliance with Resolution no. 574/2020/R/eel and Resolution no. 539/2020/R/gas ARERA.

NATIONAL TREND ITALY 2025, 2030, 2040		GLOBAL AMBITION 2030, 2040	
-10.6%	gas and green gas demand in 2040 vs. 2025	-6.3	gas and green gas demand in 2040 vs. 2030
16.8%	share of biomethane and hydrogen in gas demand by 2040	23.6%	share of biomethane and hydrogen in gas demand by 2040

- Investments in terms of energy efficiency
- Dissemination and development of programmable energies, such as green gases, in particular, biomethane and hydrogen, which can leverage the use of existing gas infrastructure
- Sustained growth in electricity and non-programmable energy sources (RES)
- Domestic hydrogen production via Power-to-Gas (P2G) plants and integrated with imports of green hydrogen or blue hydrogen

The NT Italy and Global Ambition scenarios are consistent with the environmental objectives set for Italy by the PNIEC and for Europe by the "Clean energy for all Europeans package". Both scenarios pre-date the new Fit for 55 package, the objectives of which will be incorporated into the forthcoming "Scenario Description Document" that Terna and Snam will prepare in 2022.

Each scenario has an information set of commodity prices, CO_2, gas supply and demand for the years 2025-2030 and 2040. The two scenarios differ in the years 2030 and 2040, while for the year 2025 a single 'best estimate' value coinciding with NT Italy has been assumed for both scenarios in line with what has been done at European level. The historical reference year taken as the junction for the scenarios is 2020.

Moreover, Snam has taken into consideration the legislative and regulatory framework defined at European and national level and by the Regulatory Authority for Energy, Networks and the Environment (ARERA), as well as a substantial amount of information derived from the IEA, ENTSOG and ENTSO-E scenarios, and from the European Commission. This information relates to prices, economic growth trends and changes in the availability of energy sources and carriers.

Considering the scenarios and information detailed above, over a time horizon to 2040, it is evident that the role of gas, including the progressive replacement of natural gas with green gas, appears to be the best option in enabling energy transition.

In the NT Italy scenario, annual gas demand shows a decreasing trend in line with the PNIEC forecast. In 2025, gas demand will remain above 70 billion cubic metres (72.2 bcm) and the decrease in consumption is expected mainly in the period after 2025, reaching 62.3 bcm in 2030 and falling to 60.6 bcm in 2040. The NT Italy scenario also considers the quantities of hydrogen foreseen in the PNIEC, which, in billions of cubic metres of methane equivalent, are equal to about 0.1 bcm by 2030, rising to 3.9 bcm by 2040. The quantities of hydrogen envisaged can be obtained in various ways and can contribute, either as pure hydrogen or as synthetic methane, to the decarbonisation of energy-intensive industries and long-range commercial transport. In particular, as regards hydrogen, these values do not yet include the developments expected in the Guidelines for the National Hydrogen Strategy, which anticipates by about a decade the development of hydrogen compared to the PNIEC scenario assumed as reference for the NT Italia scenario.

Demand for gas in the Global Ambition scenario is fairly constant, remaining above 70 bcm in the long term. By 2025, gas demand of 72.2 billion cubic metres is supported by the coal phase-out. By 2030, total gas demand will reach 74.9 billion cubic metres, thanks to the growth of biomethane (3.4 billion cubic metres) and hydrogen (2.6 billion cubic metres of methane equivalent), which contribute to the decarbonisation of end uses. Demand for natural and green gas by 2040 is 70.2 billion cubic metres, thanks to the contribution of biomethane and hydrogen, which are worth 9.3 and 7.3 billion cubic metres respectively.

2040

NT ITALY

64.5
billions of m^3 gas and green gas demand

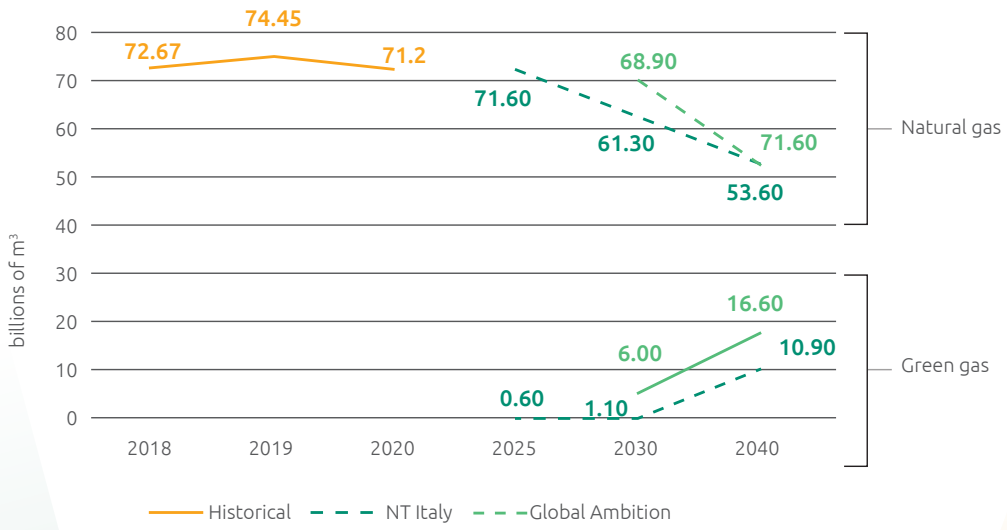
16.8%
share of green gas in gas demand

GLOBAL AMBITION

70.2
billions of m^3 gas and green gas demand

23.6%
share of green gas in gas demand

By 2040, the NT Italy scenario, in line with PNIEC, foresees about 7 billion cubic metres of biomethane and about 12 TWh of electricity consumption associated with hydrogen production from Power-to-Gas (P2G) plants, corresponding to a hydrogen production of about 1 billion cubic metres of methane equivalent. To meet the full hydrogen demand of 3.9 billion cubic metres of methane equivalent by 2040, as also envisaged by the Hydrogen Strategy Guidelines, domestic hydrogen production could be supplemented with imports or other forms of low-carbon hydrogen, e.g. blue hydrogen.
In the Global Ambition scenario, the production of biomethane and synthetic methane by 2040 reaches 9.3 billion cubic metres and the national production of green hydrogen from Power To Gas is 0.8 billion cubic metres of methane equivalent. Hydrogen demand, amounting to 7.3 billion cubic metres of methane equivalent by 2040, is covered by imports of green hydrogen produced abroad and, marginally, by blue hydrogen produced in Italy using dedicated natural gas imports.



Trends in consumer sectors

In the NT Italy scenario, according to the PNIEC, the civil sector, which combines residential and tertiary consumption and is currently Italy's main end-use natural gas consumption sector, could drop to around 19.5 billion cubic metres by 2040, of which around 1.6 billion cubic metres of biomethane. The downward trend is attributable to the energy efficiency of buildings and the modernisation of existing heating systems with more efficient systems. In the Global Ambition scenario a delay in energy efficiency measures is considered compared to the NT Italy scenario. Demand for gas in the civil sector remains essentially stable at current values until 2030 and then falls in the following decade to reach around 21.6 billion cubic metres in 2040. However, the penetration of biomethane in the sector favours decarbonisation: by 2030, approximately one-third of the available biomethane will be consumed in the civil sector, while by 2040, the sector will absorb approximately 3.5 billion cubic metres.

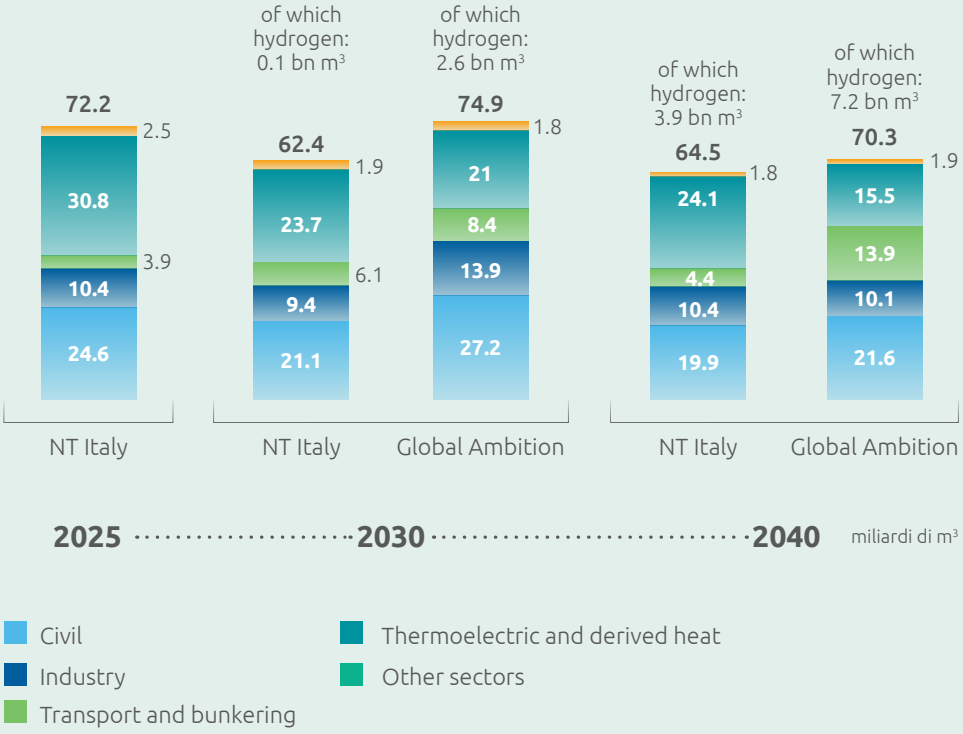
In 2030, the consumption of the **industrial sector**[7], considering the NT Italy scenario, according to PNIEC will remain substantially stable to reach about 10.4 billion cubic metres in 2040, of which about 0.9 billion cubic metres will be biomethane. It is also assumed that about half of the projected hydrogen consumption by 2040 will be for industrial uses, particularly hard-to-abate industrial processes. In the Global Ambition scenario, consumption in the sector is on an upward trend until 2030, as natural gas is the first choice for decarbonising the sector, while in the following decade, consumption falls due to the combined effect of energy efficiency and the penetration of electricity. By 2040, consumption in the sector will reach around 10.1 billion cubic metres, of which around 1.6 billion cubic metres will be biomethane. The sector will also absorb most of the demand for hydrogen in both 2030 (around 2 billion cubic metres of methane equivalent) and 2040 (around 5 billion cubic metres of methane equivalent).

Gas consumption in the **transport sector** will fall thanks to the spread of electric mobility and hydrogen to reach 3 billion cubic metres, 1.7 billion of which will be biomethane, by 2040. The maritime transport sector will also see a penetration of gas consumption from 2025 onwards, particularly as LNG replacing marine fuels of oil origin. LNG demand for bunkers grows to 1.4 billion cubic metres by 2040. It is also assumed that all of the hydrogen expected in 2030 (0.1 billion cubic metres) and about half of the hydrogen consumption expected in 2040 will be for transport. In the Global Ambition scenario, in the period 2030-2040, the growth of LNG mobility continues alongside hydrogen mobility, which is set to reach 2 billion cubic metres in the decade. By 2040, the volume of natural gas in land and sea transport will be around 14 billion, including around 2 billion cubic metres of biomethane.

The consumption of the **thermoelectric sector**[8], in the NT Italy scenario, is expected to remain at around 30.3 bcm in 2025, supported by the phase-out of most coal-fired generation in Italy. By 2030, thermoelectric demand falls to around 22.3 billion cubic metres due to the concomitant effect of increased electricity imports and greater availability of renewable generation. By 2040, thermoelectric gas demand is expected to be around 24 billion cubic metres. Gas consumption for heat production with integration boilers should also be attributed to the sector, amounting to 0.5 billion cubic metres in 2025, 1.4 billion in 2030 and 0.2 billion cubic metres in 2040. Consumption in the thermoelectric sector, considering the Global Ambition scenario, will fall to around 21 billion cubic metres due to the effect of the phase-out of coal followed by the increase in electricity imports and greater availability of renewable generation and, by 2040, demand for thermoelectric gas is expected to fall to around 15.5 billion cubic metres.

7 According to Eurostat balances, gas consumption in the industrial sector represents direct gas consumption, thus excluding gas consumption for the production of derived heat for industry, which is counted in the consumption of the thermoelectric cogeneration sector.

8 According to Eurostat balances, gas consumption in the thermoelectric sector relates to the production of electricity and derived heat.



The **other sectors** of natural gas consumption are the agricultural sector, non-energy uses of gas, energy sector consumption (extraction consumption, self-consumption of LNG plants and refinery consumption) and consumption by transport and distribution networks.
In the NT Italy scenario, in accordance with the PNIEC, it is assumed that overall consumption is reduced to about 1.8 billion cubic metres due to the reduction of about 1.2 billion cubic metres in consumption in the energy sector. In the Global Ambition scenario, overall consumption is assumed to fall to around 1.9 billion cubic metres, due to a reduction of around 1.2 billion cubic metres in consumption in the energy sector.
In order to draw up short- and medium-term forecasts, Snam has analysed the evolution of gas demand by comparing the most significant deviations between 2020, marked by the crisis caused by the Covid-19 pandemic, and those relating to 2021.
In the period under consideration, gas demand grew by 7% with an increase of about 5 billion cubic metres, from 71.3 Gm³ to 76.2 Gm³.
The main sectors contributing to this growth were residential and tertiary (+7.4%), industrial (+9.5%) and thermoelectric (+6%).In the **residential and tertiary sectors**, tgrowth was mainly due to an overall colder climate than the previous year and a recovery in consumption following the impacts of the Covid-19 restrictions. The **thermoelectric sector**, on the other hand, was favoured by a recovery in electricity demand (+5%) and strong coal-to-gas switching, which led to a 38% drop in thermoelectric generation from coal. Finally, as far as the **industrial sector**, is concerned, the increase in consumption was strongly impacted by the recovery in production, with an industrial production index (IPI), in the period January-November, of 12.4% compared to 2020 and thus surpassing the consumption levels marked in the pre-Covid period.
These increases, which took place against actual figures in 2020, also exceeded the budget assumptions made for the year 20201. In fact, the economic growth assumed in the budget turned out to underestimate the actual growth that subsequently occurred during the year. Actual consumption in 2021 showed a positive delta of **5.7 billion cubic metres, +8.2% on the assumptions made**.

The transition to Net Zero

THE 2021-2025 STRATEGIC PLAN AND 2030 VISION

Snam is determined to play a leading role in achieving the ambitious targets set at national and European level, to make the decarbonisation and energy transition process a reality and to support a sustainable economic model, seizing the many synergistic opportunities that this important challenge offers.

Aware of this, Snam has, in recent years, begun repurposing its infrastructure, developed its international presence, formed a large number of partnerships and launched numerous energy transition initiatives. Building on its established capabilities in regulated businesses and its expertise in green gas and new energy transition trends, the company is evolving towards a concept of multi-commodity infrastructures, i.e. capable of transporting and storing different types of molecules, and continuing to develop its hydrogen, biomethane, sustainable mobility and energy efficiency businesses.

In this context, in November 2021, the new **2021-2025 Strategic Plan** and the **Long-Term Vision to 2030** were presented, with which Snam underlined its contribution to supporting the great transformation underway in the energy sector, leveraging on the enabling role of infrastructure to achieve a fully decarbonised economy through a plan of increasing investments.

In the firm belief that the **business strategy** cannot disregard the **climate strategy**, Snam has strengthened its decarbonisation objectives by setting short- to medium-term intermediate targets for reducing greenhouse gas emissions from its activities (Scope 1 and 2) and defining new targets for reducing emissions associated with its value chain (Scope 3). In this way, Snam becomes the first energy infrastructure company within the European Union to set Scope 3 emission reduction targets, also related to its suppliers, by 2030. All ESG factors are nevertheless integrated into the company's strategy and management, and environmental, social and governance objectives are encapsulated in the ESG Scorecard, which was further strengthened in 2021 to provide stakeholders with an even more holistic view of engagement on these issues.

Growth to 2030 will be based on **three strategic pillars: energy networks, storage and new green projects**.

STRATEGIC PILLARS

MULTI-MOLECULE ENERGY NETWORKS	... for the creation of a multi-commodity infrastructure capable of transporting natural gas, biomethane, hydrogen and, where necessary, carbon dioxide
MULTI-MOLECULE ENERGY STORAGE	... for the creation of a multi-commodity storage company (natural gas, biomethane, hydrogen and carbon dioxide) and, in the long term, allowing sector coupling solutions*
GREEN PROJECTS	... to enable the launch of integrated green gas (biomethane and hydrogen) pilot projects that can become scalable along the entire value chain

* The European Commission identifies sector coupling as a strategy that provides more flexibility to the Energy System in order for decarbonisation to be achieved in the most cost-effective way (DG ENER (2018) Request for services no. ENER/B2/2018-260 - Potentials of sector coupling for the EU natural gas sector - Assessing regulatory barriers).

The process will be realised through three enabling competences driven by know-how and execution capacity acquired over time: orientation of the business towards ESG issues and Net Zero objectives, consolidation and creation of national and internationalstrategic partnerships, and a solid financial structure that will support the growth of sustainable finance in the coming years. For more information on the enabling competences of Snam's strategy, see the "Strategy and Risk Management" chapter of the 2021 Annual Report.

ENABLING COMPETENCES

EXECUTION CAPACITY

Net Zero and ESG focus	**Partnership and internationalisation**	**Solid financial structure and disciplined investments**

As an enabler of the energy transition, in order to achieve its objectives Snam has planned investments of **€8.1 billion** by 2025 (+€700 million compared to the previous plan) to be allocated to the maintenance, modernisation and development of the infrastructure, as well as to achieving carbon neutrality and accelerating the energy transition. €1.3 billion of investments concern projects in the hydrogen and biomethane, sustainable mobility and energy efficiency sectors, bringing the new Plan into **line with the European taxonomy** increasing it to **47% of the total** (+7 percentage points compared to the 2020-2024 Plan). Furthermore, looking at a longer time horizon, up to **€23 billion** can be allocated to the development of energy networks, energy storage and green projects by 2030.

STRATEGIC PILLARS

MULTI-MOLECULE ENERGY NETWORKS

MULTI-MOLECULE ENERGY STORAGE

GREEN PROJECTS

INTERVENTION AREAS

to 2025	to 2030	
	TRANSPORT OF CH_4 AND BIOCH_4	TRANSPORT OF H2
• Replacement	• Replacement	• Hydrogen backbone
• Net Zero investments	• Maintenance	
• Digitalisation	• Net Zero investments	
• Development	• Digitalisation	
	• Development	

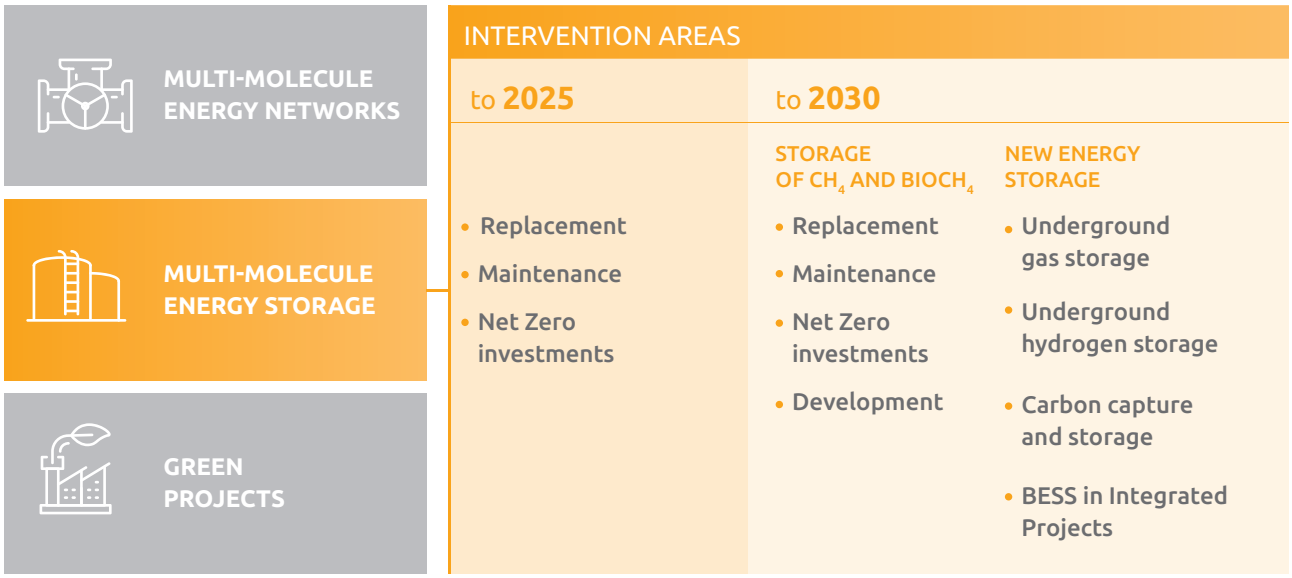
Evolving towards a "multi-commodity" infrastructure capable of transporting not only natural gas (in an initial transition phase) but also green gas is one of Snam's main objectives. To date, the existing infrastructure can already transport natural gas and biomethane without distinction and about 99% of the network is already capable of transporting up to 100% hydrogen (according to the regulation **ASME B31.12**[9]). To further support the deployment and use of green gas, Snam has decided to promote the creation of a backbone for the dedicated transport of hydrogen from the areas of greatest production (southern Italy) to the areas of greatest demand in northern Italy and central Europe, with approximately 2,700 km of network from Mazara del Vallo to Passo Gries and Tarvisio. This will be achieved by repurposing existing infrastructure and building new lines, for which an investment of around **€3 billion** has been estimated by 2030. In particular, 75% of the network km will come from the repurposing of the existing network and 50 MW of compressor stations will provide adequate pressure levels for the network.

The agreement for the sale to Snam of 49.9% of Eni shareholdings in the companies TTPC and TMPC, which manage the gas pipelines linking Algeria to Italy via Tunisia and the Mediterranean, which is strategic for the construction of a hydrogen pipeline linking Italy with North Africa, a strategic area that

9 The ASME (American Society of Mechanical Engineers) is a non-profit US association that enables collaboration, knowledge sharing and skills development across all engineering disciplines. ASME B31.12 is a standard for hydrogen pipes and pipelines and contains the requirements that infrastructures should have in order to enable the transport of hydrogen in a safe and quality manner.

in the future could also become a hub for the production of green hydrogen, also points in this direction.
Snam will also continue to invest in the transportation of natural gas and biomethane, through H2-ready replacements and maintenance. By 2025, it will have modernised more than 1,300 km of the network, rising to **3,000 km** in 2030. The investments in the 2025 Plan and the 2030 Vision will also address "Net Zero" targets, with the conversion of **compressor stations to dual fuel**, facilitating sector coupling, and continuing to invest in reducing methane leakage.
As additional medium-term targets, new connections related to the energy transition are foreseen with the construction of **205 L-GNC plants, 75 biomethane** plants and another **115 connections to the transport network**.
Finally, Snam will increase the quality of service through the digitalisation of assets and the adoption of the Internet of Things[10]. The inauguration, in 2021, of the first district of the future, **TecHub**, based in Bologna, marked a step forward in activities related to improving safety and environmental sustainability with the aim of developing **a digital transformation model** applicable in Snam's operations. The technological district is entirely managed with the aid of digital technologies that help to reduce emissions, improve the safety and resilience of infrastructure and operational efficiency in the region. Among these, **Leak Detection and Repair (LDAR)** is a tool able to guarantee predictive network maintenance and centralised control of methane emissions, but also real-time monitoring systems, which will allow continuous and effective control of over 4,000 km of methane pipelines, 80 reduction plants and more than 1,000 redelivery points between Emilia-Romagna and Marche.
In order to contribute to the continuous and sustainable growth of the business, Snam has carried out planning, design and authorisation activities for the works required to build the virtual pipeline to Sardinia.

Multi-molecule energy storage



The storage system makes it possible to compensate for the different needs between gas supply and consumption and for peaks in demand, ensuring continuity of service. In fact, whilst supply, consisting of foreign imports and national production, has a substantially constant flow throughout the year, gas demand is concentrated mainly in the winter period. Therefore, storage ensures the necessary availability of gas, to compensate for any lack of or reduction in supply or crises in the gas system. Moreover, energy storage is, even more so in the future, an essential point for the energy system considering the problem of intermittency of renewables.

10 "Internet of Things" (IoT) refers to the extension of the Internet to the world of concrete objects and places by allowing them to send and receive data.

The centrality of storage

For these reasons, and in consideration of the essential role that energy storage plays, and will continue to play more and more, in an energy system based on intermittent renewables, it represents one of the three strategic pillars that Snam will develop in the period 2021-2030, thanks to investments of up to **€5 billion** (of which €3 billion dedicated to the regulated business and €2 billion dedicated to new energy storage activities). Specifically, Snam will focus on natural gas and biomethane storage, through the consolidation of existing activities, the replacement of end-of-life wells and the replacement/upgrade of the Ripalta, Sabbioncello, Fiume Trieste, Segnano, Minerbio and Settala plants. In addition, the Company will maintain and update safety standards and increase investments to comply with regulations, as well as invest in new energy storage activities (including hydrogen and carbon dioxide).

With the aim of making the infrastructure compatible for hydrogen storage as well, the Group has launched an activity in collaboration with the Turin Polytechnic, the Italian Institute of Technology and the CO_2 Cycle Lab (CCL) to investigate and simulate the chemical, physical and microbiological phenomena associated with the possibility of **storing hydrogen mixed with natural gas, even up to 100%** in depleted natural gas fields. The tests gave encouraging results, as no changes or alterations were observed on depleted reservoirs, confirming the possibility of repurposing these assets for H2-ready reuse. The next steps in this area will be the completion of microbiological tests in a multi-reactor and the launch, once the necessary authorisations have been received, of the pilot test on a Snam storage site.

As part of Net Zero investments, the Sergnano, Ripalta and Cortemaggiore plants will be upgraded to H2-ready status and six compressor stations (three by 2025) will be converted to dual-fuel.

In addition, part of the investment will go towards maintaining high safety standards, regulatory compliance and the adoption of new metering systems. In particular, Snam will increase its expertise in the areas of groundwater, salt flats and CO_2 storage, as well as its knowledge of sector coupling solutions, engineering capacity and commercial reach.

Among the new energy storage projects, mention should be made of the agreement with **dCarbonX**, a company with which Snam will develop three offshore hydrogen storage initiatives in Ireland. In addition, the Group is involved, together with **Térega**, in **Pycasso**, a **CCS** (carbon capture and storage) project in the south of France and the north of Spain, which will also lead to the repurposing of depleted stocks.

dCarbonX
Decarbonisation Exploration

Green projects

MULTI-MOLECULE ENERGY NETWORKS

MULTI-MOLECULE ENERGY STORAGE

GREEN PROJECTS

INTERVENTION AREAS	
to **2025**	to **2030**
• Hydrogen	• H2 Italy
• Biomethane	• H2 Foreign
• Energy efficiency	• Biomethane and mobility

Encouraging the **energy transition, promoting renewable energy sources and resources, protecting the environment, achieving carbon neutrality and pursuing sustainable success** are the key objectives on which Snam has defined its strategy and oriented its activities. In particular, in its 2030 Vision, the Company plans to promote and develop scalable green gas projects along the entire value chain to foster market development and offer integrated solutions.
The investments made between October and November 2020 in De Nora, an Italian company of excellence in water treatment and alkaline electrolysis technologies, and ITM, a leading manufacturer of membrane electrolysers, are part of the move towards an increasingly strategic positioning. The acquisition in De Nora allows Snam to increase its technological positioning in order to be more competitive in new projects for the development of hydrogen. In midstream, the company has become one of the global leaders in defining hydrogen standards and testing; while in downstream, Snam has initiated and participated in more than 150 commercial discussions, some of which will become projects, that contribute to increasing knowledge of the needs and expectations of the hard-to-abate sector.
By 2030, Snam expects to make the pilot projects already underway scalable and suitable for a market where multi-molecule solutions will be increasingly needed, leading to integrated projects in the midstream and upstream segments of the green and blue hydrogen, biomethane and CO_2 value chains.
In this regard, Snam will invest up to **€3 billion** distributed among the hydrogen, biomethane and energy efficiency businesses.

"Snaminnova": the Open Innovation programme for the energy transition

In 2021, Snam launched **Snaminnova**: the **Open Innovation** programme that aims to accelerate the Company's capacity for innovation in order to seize the opportunities offered by the evolution of the energy system. Snaminnova stems from the desire to make innovation a pillar of strategic business development in order to support Snam in becoming an increasingly important player in the energy transition. Within Snaminnova, three initiatives were launched: **Innovation Ambassador, Call4Startup Innovative Learning** and **Centrale delle Idee**.

The Centrale delle Idee (Ideas Centre) was set up with the aim of identifying innovative solutions in line with the plan to become Net Zero Carbon by 2040, starting with a Call4Ideas dedicated to the corporate population that attracted **91 applications**. The theme of the centre was divided into five areas of interest:

ENERGY
promotion and development of the energy transition thanks to the use of renewable sources

MOBILITY
promotion of green mobility

PEOPLE & COMMUNITY
raising awareness on decarbonisation, promoting a low impact life style

BUILDING
promotion of energy efficiency in buildings

RECYCLE
management optimization and reuse of waste

Of the 91 ideas collected, 10 were selected by an **Evaluation Committee**, made up of Snam experts on the five themes, and were given access to the start-up process aimed at structuring and finalising the idea using a **design thinking** methodology. At the end of the start-up phase, the Evaluation Committee selected the five finalist ideas that embarked on the development phase for the design of the potential testing of innovative solutions. At the end of the process, a winning idea 'H2Aviators' was identified, which envisages the creation of small autonomous airships with zero emissions. The idea also envisages the use of helium for buoyancy and hydrogen fuel cells to generate electricity for propulsion and on-board instrumentation), which will continue the implementation process through the feasibility study of a prototype and its eventual realisation.

Hydrogen

Thanks to the work of the **Hydrogen**, business unit, created with the aim of being at the forefront of a sector with great prospects, Snam has set out its investment plan to 2025 in various business sectors, including that of sustainable hydrogen **sustainable hydrogen mobility**, with the support of Snam4Mobility, for the creation of refuelling solutions for trains, heavy and light vehicles, completingthe infrastructure for sustainable hydrogen mobility by 2030. In addition, the use of this gas will also be developed in **industrial sectors**, specifically in the thermal, feedstock and fuel-cell sectors. Leveraging possible funding requests under existing calls for proposals, with the aim of **monitoring and launching new hydrogen experiments**, Snam has launched eight projects, some of which will be funded through the Innovation Fund and Horizon Europe, while others have been proposed to the IPCEI. In this context, the Group will support the Italian Gigafactory project for the production of green hydrogen, which De Nora has presented as part of the IPCEI projects.
In the 2030 Vision presented by Snam, the Company aims to evolve from small-scale projects to integrated hydrogen-related initiatives in Italy and internationally, with particular reference to Northern Europe, the United States, North Africa and the Middle East, areas where renewables are competitive, favourable logistical conditions and local off-takers are present and/or infrastructure can be exported, or where there are regulatory frameworks in favour of decarbonisation.
Further investments will be made in research and development and venture capital initiatives. Among the latter, **HyAccelerator** should be mentioned, the first accelerator on a global scale for hydrogen start-ups created with the aim of enhancing the most innovative companies in the sector and giving rise to high-potential projects.

The partnership with De Nora and the Gigafactory project

In November 2020, Snam acquired a stake (33%) in **De Nora**, a global leader in sustainable energy and water treatment technologies (disinfection and filtration). In particular, De Nora is specialised in alkaline electrodes, essential components for the production of alkaline electrolysers, and works together with numerous fuel cell operators.

During the year, Snam continued to invest in De Nora, also leveraging its 34% stake in **ThyssenKrupp Uhde Chlorine Engineers (TKUCE)**, a joint venture with ThyssenKrupp, a world leader in water electrolysis and involved in several projects for the production of green hydrogen. Snam, in line with its positioning along the entire value chain of net zero technologies, intends to exploit the significant growth potential, both in components for the production of green hydrogen and in water treatment, which could qualify it as a key player in the hydrogen sector thanks to its expertise.

The collaboration with De Nora allows Snam to further enhance its ability to develop new projects at an international level. De Nora, considering the current installed capacity, which allows the production of electrolysers of 1 GW each, aims to create an **Italian Gigafactory of electrolysers for the production of green hydrogen**, for which a request has been submitted under the IPCEI programme and which could see its realisation also thanks to the support of Snam.

In addition, considering De Nora's economic performance (+20% in revenues to 2021 compared to 2022), Snam will also support the Company's growth phase, which could include an IPO (Initial Public Offering) during 2022, compatibly with market conditions.

Finally, it is a potential first asset for a new energy transition investment platform, with a focus on hydrogen, to be launched in 2021 with the aim of responding to the growing interest in energy transition and decarbonisation.

Biomethane

By exploiting the already consolidated Snam4Environment platform and the opportunities offered by the PNRR, Snam plans to build plants with an installed capacity of approximately **120 MW** by 2025, almost double the capacity announced in the previous plan, reaching 150 MW by 2030. The increase in installed capacity will also be achieved through greenfield projects and strategic acquisitions of biogas and biomethane plants. Due to the delay in authorisations caused by the pandemic and the pending new biomethane decree notified to the European Commission, the ramp-up of initiatives to 2025 will be slower than announced in the 2020-2024 Plan.

In the field of **sustainable mobility using biomethane and natural gas** for heavy and light vehicles, the Group, through Snam4Mobility, the subsidiary that offers integrated services in the field of "smart green" natural gas mobility, will complete the development of CNG/L (compressed and liquefied natural gas) and Bio-GNC/L (compressed and liquefied bio-gas) stations and infrastructure projects for the supply of LNG to the distribution network.

Snam and SIAD for the development of LNG and Bio-LNG

In March 2021, Snam and SIAD, a leading chemical group in the production and supply of industrial gases and in the Engineering, Healthcare, LPG and Natural Gas sectors, have signed a framework agreement to start a technological collaboration in the small-scale and medium-scale liquefaction sector. The aim of the agreement is to foster the **dissemination of LNG and Bio-LNG as alternative fuels for sustainable mobility and other end uses**. The agreement aims to build small- and medium-scale plants for the liquefaction of natural gas and biomethane on a global scale, on behalf of third-party customers. These plants will be modular and standardised with capacities ranging from 50 ktpa (kilo tons per year) to 100 ktpa in the case of small-scale plants and 200 ktpa and above for mid-scale plants.

As part of the collaboration between Snam and SIAD, a project will be launched in Campania in 2021, with a capacity of 50 ktpa, which has already obtained European funding. The plant, which will be operated by Snam, will ensure the security of LNG and Bio-LNG supplies to other regions in Southern Italy.

Thanks to their versatility, liquefaction systems, in addition to powering sustainable mobility, will also be functional for other uses, such as the conversion of power generation from diesel to natural gas and some energy-intensive industrial processes.

Energy efficiency

In the field of energy efficiency, Snam has, in just three years, positioned itself among the leading Italian operators offering such services. With its subsidiary Snam4Efficiency, which will become **Renovit**, in January 2021, Snam offers energy efficiency solutions in the residential, industrial, tertiary and public administration sectors.

During the Plan period, Snam plans to continue its growth path organically, through new acquisitions and by leveraging the opportunities arising from the 110% Ecobonus. In the industrial sector, the installation of approximately 90 MW (+30 MW compared to the 2020-2024 Plan) of distributed energy systems (CHP, PV, fuel cells) is planned; while, in the Public Administration, Snam will be responsible for participating in public tenders and developing public-private partnerships.

Energy efficiency projects financed by the EIB

In June 2021, Snam signed a loan agreement with the **European Investment Bank** (EIB) for a total of €150 million to support energy efficiency projects in the residential and industrial sectors.

The initiatives financed by Renovit, which will add up to a total of €200 million, will consist of the rehabilitation of residential buildings and the implementation of energy efficiency and decarbonisation measures for industrial activities, including the installation of photovoltaic panels.

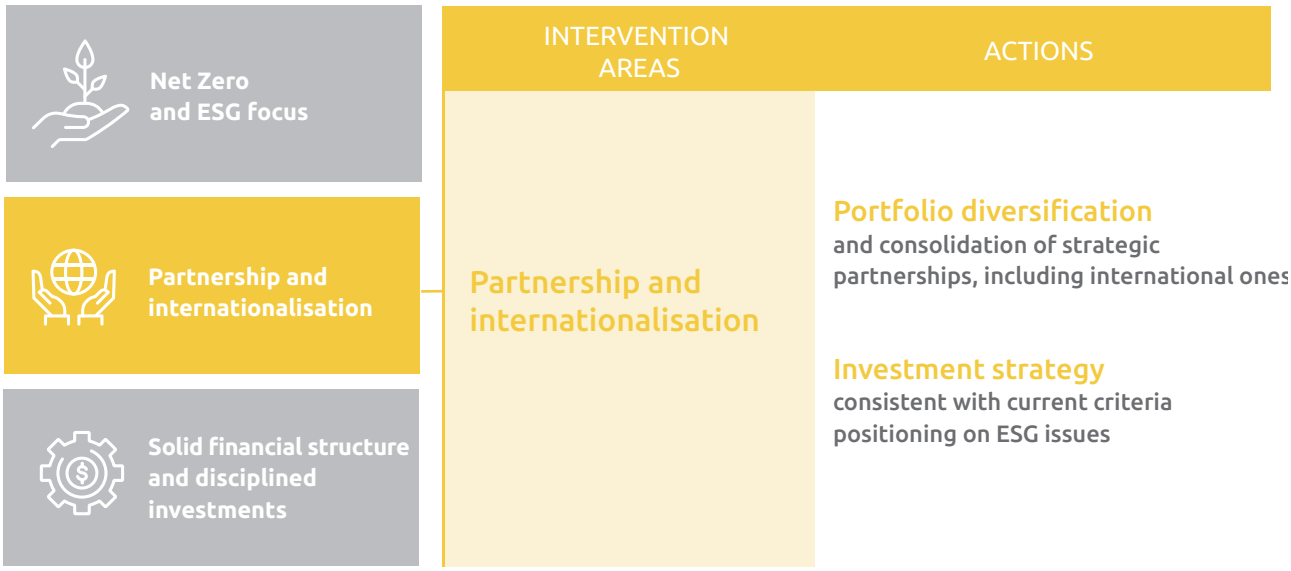
Net Zero and ESG focus

INTERVENTION AREAS	ACTIONS
Net Zero Carbon	-50% Scope 1 and 2 emissions to 2030 (vs. 2018) Net Zero by 2040 -55% CH_4 emissions by 2025 (vs. 2015) -46% Scope 3 emissions for affiliates and other small emitters to 2030 (vs. 2019) -55%* Scope 3 emissions for suppliers to 2030 (vs. 2019) *meant as economic intensity
ESG Scorecard	Definition of quantitative KPIs divided at 2022 and 2025 into 14 areas to communicate performance in the areas of environment, society and governance

The integration of sustainability into Snam's strategy has also been renewed in the 2021-2025 Strategic Plan, which not only reconfirms the Group's desire to achieve **carbon neutrality by 2040**, for its operations, but also responds concretely to the commitment to set new and more challenging targets. Compared to the previous year, the target was raised for reducing **natural gas emissions** to 2025 (vs. 2015), from -45% in the previous Plan to -55%. In addition, a new interim **Scope 1 and 2 emission**, starget of 28% reduction in CO_2 emissions by 2025 has been announced, and two **Scope 3 emissions** reduction targets have been set that directly involve subsidiaries, suppliers and other minor emitting categories. For more information on Snam's decarbonisation strategy, see the paragraph "Strategy for the future: Net Zero Carbon' contained in this chapter.

With a view to increasingly integrating ESG issues into the strategy and management of the business, Snam has updated the **ESG Scorecard**, presented for the first time in 2020, defining quantitative objectives divided into **14 areas**, in order to give stakeholders a holistic view of the Group's commitment and growing sensitivity to ESG issues. Further information on the ESG Scorecard can be found in 'Transition to Net Zero - The ESG Scorecard' in the 2021 Sustainability Report.

Partnership and internationalisation



In recent years, Snam has progressively strengthened its position in energy infrastructure at an international level, diversifying its portfolio of activities and consolidating partnerships with industrial and financial operators. In the period 2021-2025, the company expects to maintain the strategy it has already launched, which will be consistent with its current criteria (maintaining rating metrics and risk-adjusted returns in line with those of regulated activity in Italy) and with its positioning on ESG issues.
Snam's current portfolio of partnerships meets the Group's different needs: from access to **new green projects**, given its strategic position in markets where renewables are competitive, as are hydrogen production costs (e.g. TTPC, TMPC and Adnoc), to others that, although belonging to mature assets, could play a strategic role as **export corridors for hydrogen** in the medium/long term (e.g. Austrian subsidiaries), passing from the development of **ecosystems and hydrogen and CO_2 storage** by leveraging the potential of offices in the Middle East and the United States.

NATIONAL AND INTERNATIONAL ACTIVITIES: SNAM& CLIMATE CHANGE

Snam has been involved, for many years, in various very important international initiatives on the issue of climate changes. Below is a brief summary of the activities carried out in 2021.

OGMP
Oil And Gas Methane Partnership 2.0

UNEP OGMP 2.0 FRAMEWORK

In 2020, Snam joined the Oil & Gas Methane Partnership OGMP 2.0, the voluntary initiative launched by the United Nations Environment Programme to support Oil & Gas companies in reducing methane emissions. This initiative is also reflected in the Methane Strategy and in the European Commission's recently published proposal for a European regulation on reducing methane emissions in the energy sector.
Adhering to the framework represents an important opportunity for gas companies to demonstrate their credibility and commitment to GHG reduction. In 2021, Snam obtained the Gold Standard, the highest level envisaged by the UN protocol on methane emissions (more details in the section "Acting for tomorrow: Snam and the commitment to climate change, Greenhouse gas emissions").

METHANE GUIDING PRINCIPLES (MGP)

An initiative that gathers together Oil& Gas companies with the aim of reducing methane emissions along the sec-tor chain, through the involvement of the main stakeholders. Snam has subscribed, for some time now, to the guiding principles that commit the company to reducing its methane emissions from its activities.
As in previous years, Snam has produced a detailed reporting template illustrating all of the emission reduction activities implemented during the year and those planned for 2022.

CLIMATE-RELATED FINANCIAL DISCLOSURES

A Task Force launched by the Financial Stability Board with the goal of establishing recommendations and guide- lines to improve the disclosure of companies on financial aspects related to climate change. In 2021, Snam has published its third report which generated a significant amount of interest.

GERG

European Association for research in the gas industry in which there is international cooperation on methane emissions. With the publication of the Methane Strategy by the European Commission and the launch of the UNEP OGMP 2.0 Framework, European gas companies, including Snam, have decided to develop a research project to correlate methane emissions with the top down and bottom up methods foreseen in the international protocols, following three different phases. European Association for research in the gas industry in which there is international cooperation on methane emissions. With the publication of the Methane Strategy by the European Commission and the launch of the UNEP OGMP 2.0 Framework, European gas companies, including Snam, have decided to develop a research project to correlate methane emissions with the top down and bottom up methods foreseen in the international protocols, following three different phases.

MARCOGAZ - GIE

The European technical association of the gas industry (Marcogaz) and Gas Infrastructure Europe are two associations that are particularly active on issues related to climate change and methane emissions. Over the last few years, several documents have been developed that have become points of reference for the sector at an international level and in the definition of which Snam actively participated. In 2021, the reports to which the Group contributed were:

- "Venting and Flaring On Mid- and Downstream Gas Infrastructures" presenting current experiences and practices used by the midstream and downstream gas industry in Europe to minimise emissions from venting and flaring.
- "Leak Detection and Repair – LDAR" is a technical guide for implementing emission reduction programmes based on LDAR methods.
- "Guidance for the MARCOGAZ methane emissions reporting template – TSO-UGS-LNG receiving terminals-DSO" that outlines the correct approach to achieve proper accounting of natural gas emissions from gas infrastructure.

CEN

Snam follows the implementation of the sector legislation on methane emissions at CEN, the European standardisation body, which is based on the "pre-standardisation document" relating to the assessment of methane emissions carried out at Marcogaz. The document, which is not limited to fugitive emissions but also considers other types of incombustible and point source emissions, is now in its final stage and awaits formal approval by national regulators before formal European approval.

IGU

Snam has been following for years the Group of Experts on Methane Emissions (GEME) set up by the International Gas Union, which is responsible for updating the various players in the gas chain on the latest developments at global level. A dissemination activity towards some specific IGU Committees is also carried out.

GAS FOR CLIMATE - THE EUROPEAN HYDROGEN BACKBONE INITIATIVE

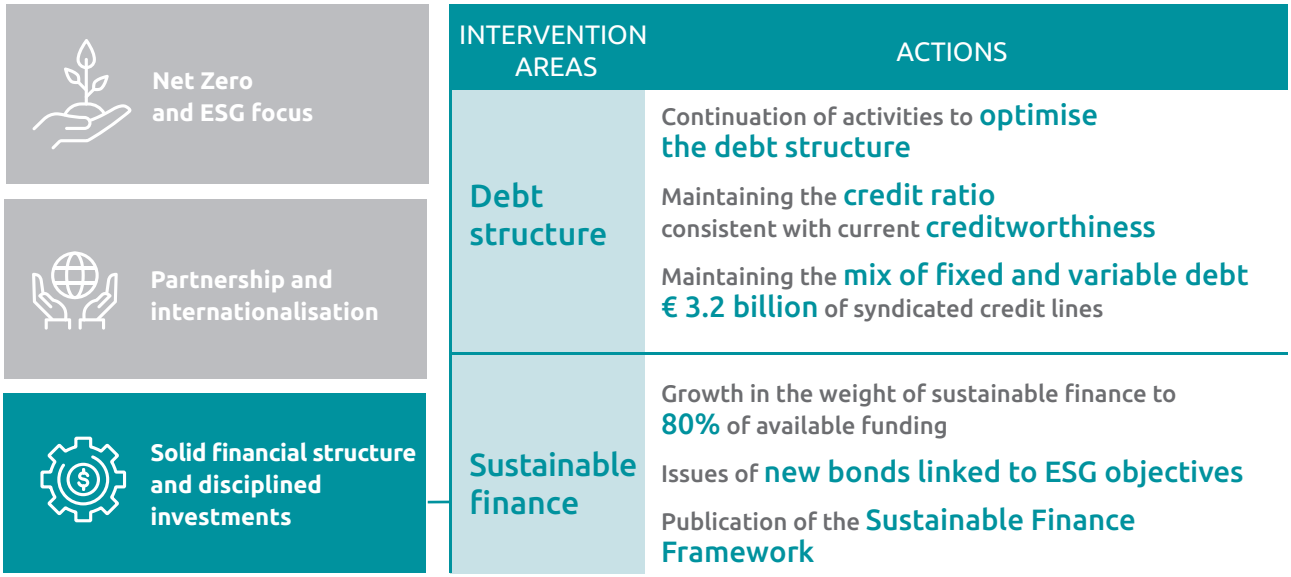
The initiative, born within the Gas for Climate consortium, has the aim to analyze and create awareness on the role of renewable and low-carbon gas in the future energy system in full compliance with the Paris agreement objective of limiting global temperature rise well below 2 degrees Celsius. The consortium is composed of 29 European TSOs who collaborate in the definition of a pan-European network for the transport of hydrogen through pipeline in Europe: Creos, DESFA, Elering, Enagás, Energinet, Eustream, FGSZ, Fluxys, Gas Connect Austria, Gasgrid Finland, Gasunie, GAZ-SYSTEM, Gas Networks Ireland, GRTgaz, National Grid, NET4GAS, OGE, ONTRAS, Plinovodi, TAG, Teréga, Snam, Swedegas. From January 2022, Amber Grid (Lithuania), Bulgartransgaz (Bulgaria), Conexus Baltic Grid (Latvia), Gassco (Norway), Plinacro (Croatia), and REN (Portugal) were added to the TSOs already mentioned.

A long history of successful partnerships

	Investment	Geographic area	Value and growth levers	Year of investment and equity investments		Capital invested (Euro mln)	Industrial and financial partners
ENABLERS OF INTEGRATED PROJECTS	ADNOC	United Arab Emirates	Integrated hydrogen projects	2020	12.3%	221	GIC, Brookfield, Ontario Teachers, NH투자증권
	ttpc tmpc	Tunisia	H2-ready pipeline	2021	49.9% of Eni's investment	385	Eni
	Teréga	France	Ideal positioning for the transition to hydrogen, leveraging on a favourable geographical position	2013	40.5%	597	GIC, Crédit Agricole, EDF Invest
OPPORTUNITIES IN TRANSITION AND COST/PORTFOLIO OPTIMISATION	desfa	Greece	Strategic positioning along the southern gas corridor	2018	35.6%	121	enagas, FLUXYS, Copelouzos
	Trans Adriatic Pipeline	Greece, Albania, Italy	Development opportunities for hydrogen and decarbonisation	2015	20.0%	131*	SOCAR, FLUXYS, azpo, bp, enagas
	TAG, GAS CONNECT AUSTRIA	Austria	Further cost optimisation and disciplined investments Portfolio optimisation leveraging on Verbund Evolution towards a multi-molecule network	2014 2016	84.5% 19.6%	519 135	Verbund, Allianz
	interconnector	UK, Belgium	Connection between the British gas markets with those of continental Europe	2012	23.7%	153	FLUXYS

* Book value of the 20% stake in TAP equal to Euro 292 million at the end of September 2021, including the initial invested capital and subsequent capital injections.

Solid financial structure and disciplined investments



Over the 2021-2025 period, Snam plans to achieve sustainable growth in key indicators and further optimise its financial structure. The Plan assumes an impact on 2022 net profit from the WACC revision of approximately €85 million and on EBITDA of €120 million.

The expected level of net debt at the end of 2022 is approximately €14.8 billion, taking into account the investments planned during the year, amounting to €1.5 billion, the absorption of working capital (€0.3 billion), the outlay for the acquisition of TTPC/TMPC (€0.4 billion) and a positive contribution of €0.6 billion from the optimisation of the capital structure of equity investment and the conversion of a convertible bond.

Over the Plan period, Snam expects to maintain credit ratios consistent with its current creditworthiness and a mix between fixed and variable debt of 3/4 in line with the previous Plan. In addition, €3.2 billion of syndicated credit lines are planned.

Compared to the Plan period, average annual growth of more than 2.5% is expected in the 2021-2025 RAB[11] with further upside opportunities from the development of a hydrogen infrastructure; 3% in net profit 2022-2025, 4.5% in EBITDA 2022-2025 and 5% in dividend per share until 2022, with a further 2.5% minimum growth in 2022-2025.

11 "RAB" means Regulatory Asset Base, or net Capital Invested for regulatory purposes calculated on the basis of the rules defined by the Electricity, Gas and Water Authority, to determine reference revenues for regulated business.

Furthermore, Snam will continue with the optimisation of the financial structure carried out in the last six years, which has led to a reduction in the average cost of gross debt from 2.4% in 2016 to an average current value below 1% and expected to be around 1.1% on average, over the Plan horizon, due to the action taken to crystallise as much as possible the favourable market conditions and the interest rate and credit spread scenario. Further possible savings could derive from treasury optimisation, as well as further diversifying sources and increasing sustainable finance instruments.

In this regard, with a view to aligning its financing strategy with sustainability targets and broadening its investor base, Snam has formalised a target linked to **sustainable finance** in its ESG Scorecard, which envisages **envisages increasing the weight of sustainable finance from 60% today to 80% by 2025**. In addition, Snam is committed to ensuring that **all future bond issues are linked to ESG objectives** and will continue to issue bonds, the proceeds of which will be invested in projects ranging from reducing emissions to increasing the use of renewable energy and making a **tangible contribution to achieving the Sustainable Development Goals. (SDGs)**.

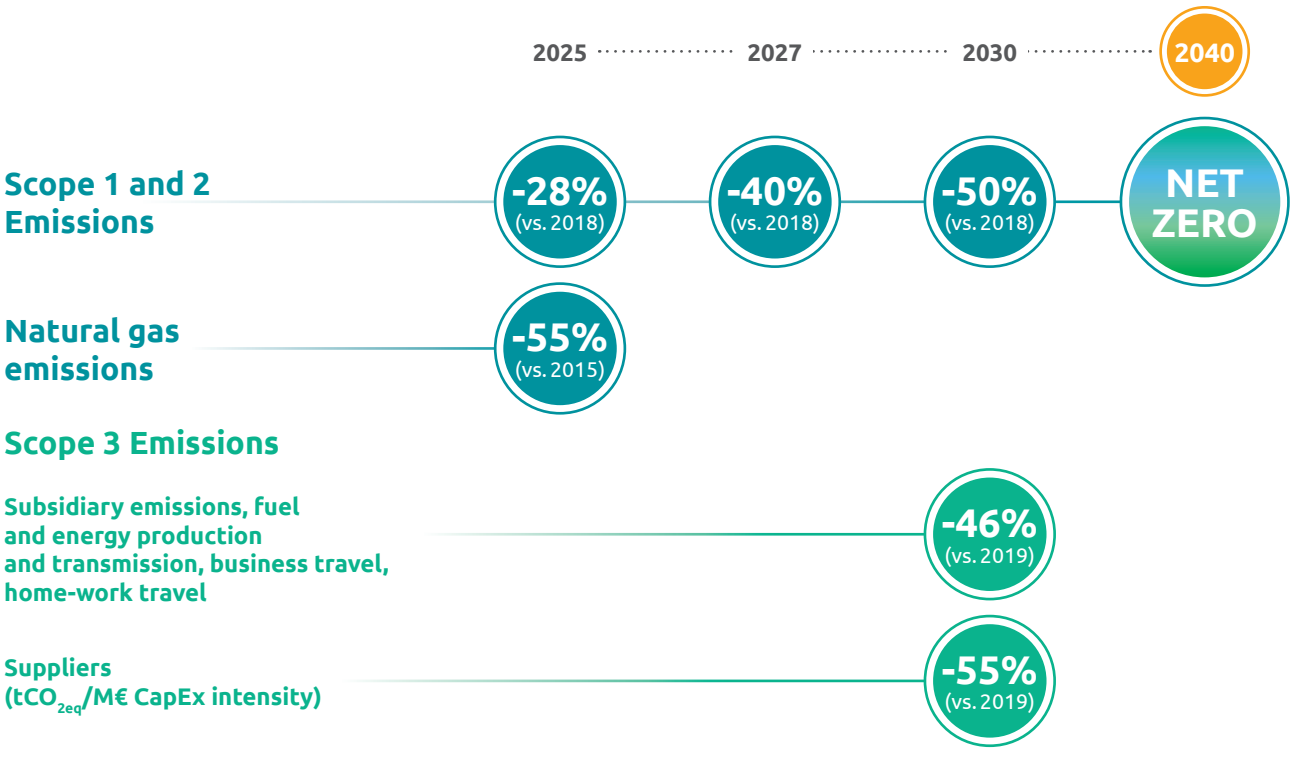
Snam has also published a new **Sustainable Finance Framework**, under which the Group will be able to issue both instruments to finance specific projects, aligned with the Taxonomy Delegated

Acts, and instruments to finance general corporate activity. These projects will be associated with appropriate sustainability indicators (KPIs) for the issuance of Sustainability-Linked Bonds. During 2021, Snam maintained the reduction in its **Sustainable Loan** margin of €3.2 billion, already achieved in the previous two years, following the achievement of objectives linked to social and environmental sustainability parameters. In addition, it has maintained the **Euro Commercial Paper**, programme, renewed in 2020, which is deployed for the maximum amount of €2.5 billion through the issuance of **ESG-format commercial paper**.

THE STRATEGY FOR THE FUTURE: NET ZERO CARBON

The fight against climate change is one of the main challenges facing the world today. The containment and reduction of greenhouse gas emissions, energy efficiency and the search for innovative, low-emission solutions are key elements of this path, in which natural gas plays a fundamental role.
In this context, in 2021, Snam decided to further strengthen its climate strategy, renewing its commitment to Net Zero at 2040 for its activities, introducing intermediate reduction targets at 2025 and 2027 and making the target for reducing natural gas emissions more challenging than the previous year, raising it from 45% to 55% at 2025 vs. 2015 (also exceeding that defined by the UNEP Framework). In addition, two further targets have been set to **reduce indirect emissions** of greenhouse gas along the value chain (**Scope 3**), making Snam the **first energy infrastructure company in the European Union to also set such targets for its suppliers**. Snam's 2030 targets are in line with the objective of limiting global warming to 1.5°C set out in the Paris Agreement and with the generic SBTi (Science-based Targets Initiative) methodology.

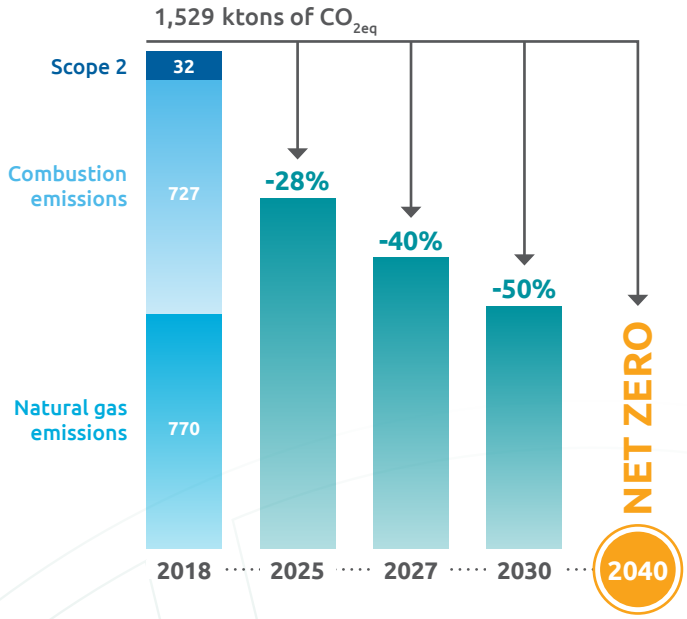
THE OBJECTIVES OF THE NET ZERO CARBON STRATEGY



The **Net Zero Carbon** strategy is mainly based on:

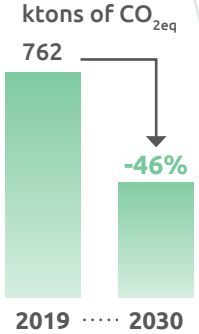
- **using natural gas as an energy source to support a decarbonisation pathway**, replacing oil products and coal;
- **gradual replacement of gas turbines with electric compressors** in the compressor and storage stations, making it possible to eliminate CO_2 emissions from combustion and to purchase electricity from renewable sources, thus ensuring zero emissions;
- **containment of natural gas emissions from its plants** through continuous monitoring, the introduction of the Leak Detection and Repair (LDAR) programme, specialised gas recovery interventions and plant replacement programmes;
- **use of electrical energy produced from renewable sources**;
- **promotion of energy efficiency through the use of photovoltaic panels** in the construction of buildings and through TEP activities;
- **reduction of emissions from company-owned buildings and fleet**;
- **collaboration with suppliers and subsidiaries** to contain indirect emissions (Scope 3);
- **offsetting of emissions that cannot be eliminated** by purchasing certified carbon credits from quality initiatives.

TARGETS FOR EMISSIONS SCOPE 1 AND SCOPE 2

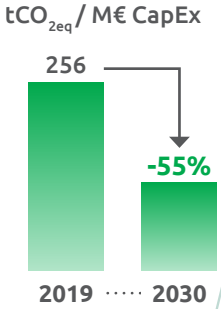


TARGETS FOR EMISSIONS SCOPE 3

Subsidiary emissions, fuel and energy production and transmission, employee business and home-work travel.



Intensity of supply chain emissions



For the reduction of Scope 1 and Scope 2 emissions, Snam has planned several actions that are divided into three macro-areas:

Reducing emissions from operations

- Interventions and application of best practices to **minimise CH_4 emissions**
- **Reducing CO_2 emissions and energy needs** of the Group, also thanks to the installation of new electric compressors in the gas booster and storage plants
- **Use of renewable electricity**

Reducing emissions from buildings and the company fleet

- Planning a move to a new site with **LEED GOLD** certification
- Use of green electricity produced by photovoltaic plants
- Conversion of company fleet to natural gas vehicles

Development of green gases

- **Development** and **networking** of **new green gases**, such as biomethane and hydrogen

With regard to Scope 3 emissions reduction initiatives, Snam will follow three main guidelines:

Initiatives with Subsidiaries

Snam plans to organise **workshops** and **meetings** to share best practices to reduce greenhouse gas emissions. The initiatives will mainly concern:

- the use of **green gases** and the installation of **electric compressors** to reduce CO_2 emissions from combustion;
- the implementation of **LDAR programmes** (Leak Detection and Repair) to reduce fugitive emissions;
- the use of energy produced from renewable sources;
- support in the definition of targets for the reduction of CO_2 emissions.

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Initiatives with suppliers

Snam will establish incentive criteria for suppliers who define clear **plans to reduce** greenhouse gas emissions. It will also support suppliers at the beginning of their path to reduce emissions. Finally, it will initiate **joint projects** with suppliers to promote emerging technologies that enable them to:

- increase the use of **green gases** (biomethane, hydrogen) and **renewable energy** in production processes;
- convert their vehicle fleets to **green fuels**.

Initiatives to reduce other indirect emissions

Snam is also working on other, less impactful emission categories, such as those deriving from the production and transmission of fuels and electricity, by increasingly reducing its energy requirements and favouring renewable energies.
In addition, even beyond the pandemic emergency, Snam is working on a smart working plan that will significantly reduce emissions from home-work journeys.

Gas infrastructure will also contribute further to decarbonisation thanks to the injection into the network of:

- **Renewable gases**, such as biomethane, biosyngas and "**green**", hydrogen, obtained from anaerobic digestion and gasification of biomass or electrolysis of renewable electricity, respectively;
- **Low carbon gas and hydrogen** from technologies that involve carbon capture and subsequent storage or reuse (CCS/CCU).

Snam's commitment to the decarbonisation strategy is also manifested through the activities aimed at **energy efficiency** and the reduction of its **environmental impact** through the implementation of **Energy Audits** for all Group companies, in compliance with the provisions of the European Directive on Energy Efficiency.

With regard to the activities implemented to reduce methane emissions resulting from its activities in natural gas infrastructures, since 2020, Snam has signed up to the **Methane Guiding Principles**, the guiding principles defined by UNEP. Adherence to these principles has led the Group to play an advocacy role among other players in the gas chain - from producer to end consumer - in order to jointly pursue the same objective.

Finally, since 2010, Snam has participated in the **CDP** questionnaire **(formerly the Carbon Disclosure Project)**, one of the most internationally **recognised not-for-profit organisations for assessing transparency in the disclosure of information on climate change and greenhouse gas emissions** by member companies. In 2021, Snam was placed on the CDP **Climate Change A- List**, which groups together the best-performing companies at global level.

Snam and participation in the UN OGMP 2.0 protocol

Snam, already in 2020, joined the Oil & Gas Methane Partnership OGMP 2.0 Protocol[12], a voluntary initiative launched within UNEP (United Nations Environment Programme) to support energy companies in reducing methane emissions, which several leading international oil & gas companies have joined. Adherence to the framework will also provide unambiguous and shared methodologies for better accounting of natural gas and methane emissions.

Snam participates directly in the working tables with UNEP where it is working to implement the application of the protocol; some of the actions carried out concerned reporting activities and the drafting of guidelines that will apply to the Oil & Gas world.

In 2021, Snam drew up its own emissions accounting in accordance with the reporting templates provided for in the protocol, evaluating all the different types of emissions and the various assets such as compressor stations for gas transportation, storage concessions and LNG regasification terminals, including plants in the transportation network. Appropriate "implementation plans" have been prepared describing the activities that will be developed in the coming years. One particular aspect concerned Snam's involvement with all of its subsidiaries, starting with a 5% equity stake, by finalising the drafting of a specific action plan, which was sent to UNO by the deadlines set.

All these activities have enabled Snam to obtain the Gold Standard, the highest level required by the UN Protocol on methane emissions; this recognition provides governments and the public with the assurance that emissions are being managed responsibly, demonstrating that companies are using a credible means, making progress against stated targets, encouraging the best performance in both reporting and emissions containment.

The achievement of the **Gold Standard** is certified in the 2021 report of the International Methane Observatory[13] published by UNEP in which Snam also received a special mention, among the best companies, for its commitment to non-operated joint ventures, which, according to UNEP, the company has pursued with particular effectiveness.

12 OGMP 2.0 website: https://www.ogmpartnership.com/
13 The report is available at the following website: https://www.unep.org/resources/report/eye-methane-international-methane-emissions-observatory-2021-report.

The ERM Model and the risks and opportunities related to climate change

The energy and climate scenarios that form the backdrop to Snam's activities involve a series of risks and opportunities that must be identified, assessed and managed effectively and promptly. An assessment of the factors that may affect the business is in fact an essential condition to continue to operate in the long term in a sustainable manner, i.e. directing strategies and monitoring changes in the boundary conditions of the same.
The risks and opportunities identified by Snam are taken into account in the definition of corporate strategy, with particular reference to objectives in the area of energy transition and decarbonisation, as well as the reduction of greenhouse gas and methane emissions.

THE ERM MODEL FOR CENTRALISED RISK MANAGEMENT

As part of the **integrated management of corporate risks** for all companies in the Group, Snam adopts an **Enterprise Risk Management Model** (ERM Model), which follows the CoSO[14] Framework, the 2020 Corporate Governance Code and international best practices. This Model enables the **identification**, **assessment** and **monitoring** of current and prospective risks and opportunities associated with Snam's corporate strategy, i.e. defined as the effect of uncertainty on the objectives of the Strategic Plan.
Over time, the **ERM model** has integrated the assessment of risks and opportunities with a view to increasingly integrating the ERM framework with **ESG aspects**. An example of this is the introduction, recently carried out, of ad hoc metrics relating to **Environment, Social and Governance impacts**. In particular, "E" considers **environmental and climate change impacts**; "S" considers possible **impacts on human and labour rights, as well as on local communities**; "G" intercepts possible consequences on **governance capacity and the pursuit of sustainable success.**
In addition, **HS impact on health and safety** considers possible consequences on people such as possible accidents, injuries or serious events for risks and improvement of working conditions and environments for opportunities.

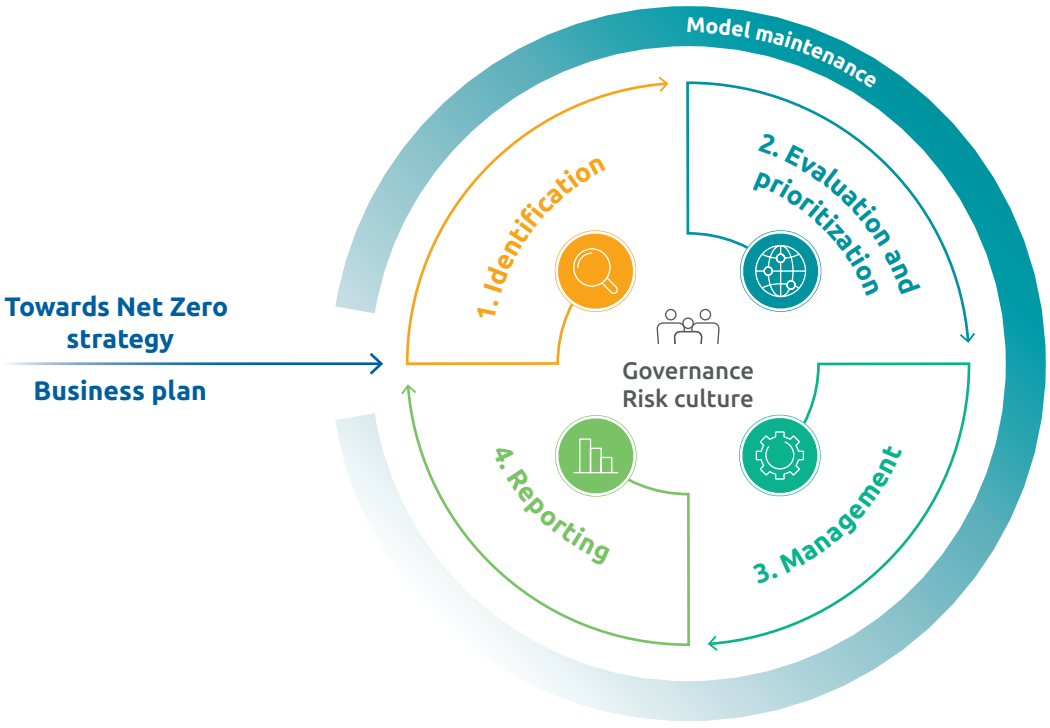
14 Committee of Sponsoring Organisations of the Treadway Commission

1. Identification

Identification of risky events relating to corporate processes and external risk factors that could affect the achievement of corporate objectives both through interviews conducted with Staff and Business Managers, responsible for the implementation of initiatives aimed at effectively managing risks, and specific analyses of operational processes of each Company and of the corporate Strategic Plan. The mapped events are periodically reviewed also in light of the growing importance of the new business development areas, in order to ensure proper monitoring of risks and opportunities relating to the latter.

2. Evaluation and prioritization

Assessment and prioritisation of each event using prioritisation matrices in which the probability of occurrence of the event and its negative (risk) or positive (opportunity) impact are represented. The probability of an event is determined based on a scale from 1 (remote) to 4 (highly probable). The impact of the event is assessed according to different dimensions, which can be qualitative (industrial/business, asset, reputational, legal, market, health and safety, environment, social and governance) or quantitative (economic, financial), also measured on a scale from 1 (low) to 4 (relevant). The prioritisation of risks takes into account the different points of view of the risk owners (first reports of the CEO/MD of the subsidiaries) and risk specialists, combining the measures of impact and probability obtained according to 4 priority classes (low, medium, high and critical for risks; slight, fair, good and excellent for opportunities).



4. Reporting

Monitoring and reporting through the periodic mapping of risks, the periodic reporting activity guarantees, through the definition of specific metrics and Key Risk Indicators (KRI), correct information at the various company levels, the availability and representation of information relating to the activities risk management and monitoring. Specific reporting flows are activated towards the CEO, the Chief Financial Officer (CFO) and the functions and control bodies.

3. Management

Definition of the management strategy (mitigation, monitoring, management, or transfer of risk), and any specific interventions for all risks, for which the relative implementation times are also identified. The mitigation interventions are aimed at limiting the probability and/or impacts of the risk in question; while the monitoring and management actions ensure that the level of criticality of the risk does not worsen. The transfer of risk is aimed at transferring, partially or completely, the impacts inherent in a risk, to a third party external to the Snam group.

The risk assessment/monitoring campaigns, provided for by the ERM Model, are repeated periodically and involve risk owners and risk specialists, who are called upon to assess risks according to the metrics of the ERM Model. In 2021, Snam's entry into the **energy transition business** has stimulated the need to define **new risk/opportunity assessment metrics at the level of the individual entity** (i.e. individual company or line of business) with the aim of grasping its specificities and integrating the current "enterprise" view (i.e. at group level) of the ERM model.
The ERM process also aims to disseminate a corporate culture of risk, in order to promote consistency in the assessments made by the various risk owners and risk specialists, and to enable informed choices to be made.
The risks identified through the ERM process are classified as: **financial, operational, legal and compliance and strategic**, which, in turn also include the **risks related to climate change**. The latter are assessed taking into account the following time horizons:

- **Short-term (0-1 year)**: 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 (1-5 years)**: 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 (5-10 years)**: 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.

Following the assessment cycles, Snam's ERM department applies a **risk prioritisation and clustering** process to identify the risks that have emerged and the related impacts on the business, followed by the definition of a **management plan** of specific actions / interventions for each risk. At the end of each assessment cycle, the results are shared with Top Management, the Audit and Risk and Related Party Transactions Committee, the Board of Statutory Auditors and the Supervisory Board. On an annual basis, the Board of Directors is also updated on these issues.
The ERM Function also promotes the sharing of the results of the assessment process with the Sustainability Function (SUST), in order to incorporate these considerations into the planning and definition of strategies for the management of ESG issues that are relevant to the Group.
Maintenance of the ERM Model is carried out continuously and independently of the process phases, with the aim of continuously having an effective Model that is consistent with the technological and methodological process of risk management. In continuity with the previous year, also in 2021, risk/opportunity mapping was updated through the RACI IT platform as part of an **Integrated Risk Assurance and Compliance Model** aimed at integrating the information flows of second level controls with a synergistic approach aimed at maximum rationalisation and overall efficiency.

Integrating ESG aspects into Snam's ERM model

Faced with the growing importance of sustainability issues in the national and international context, companies are increasingly focusing their efforts on those aspects considered to be qualifying and competitive elements of their business, as well as necessary for the creation of shared value.

In order to ensure the proper management of these aspects, it is essential to consider the **risks and opportunities** associated with them, integrating them into the company's assessment model.

In light of the most recent trends in this area, starting in 2021, Snam has launched a series of initiatives aimed **at integrating ESG issues into the ERM framework**, drawing inspiration from **leading practices** in this area, such as **CoSO ERM, CoSO ERM WBCSD** (World Business Council for Sustainable Development) and **TCFD**.

In particular, the activities were divided into two consecutive project phases: the **Diagnostic Assessment** of ESG risk areas, which was completed in 2021, and the **ESG Risk Assessment**, which will be completed in the first half of 2022.

Specifically, the Diagnostic Assessment was conducted with the aim of **identifying ESG risk areas**, based on the Sustainability issues identified in the materiality analysis, and **assessing the level of maturity of the control measures** relating to the ESG risk areas identified.

The outcome of this project led to the identification of **10 new ESG risks**, seven of which are associated with the Strategic Plan and three with environmental and social risks.

At the end of this phase, and based on the results of the study carried out, the Group **intensified its activities** by launching, for the first time, an **extraordinary Risk Assessment campaign with an exclusive ESG focus**. Prior to this campaign, which involved the entire company perimeter and all Top Management, the Group **strengthened its ERM methodology** from an **"ESG"**, perspective, and thus prepared for the systematic incorporation of ESG factors into its activities and analyses.

This methodological evolution was made possible thanks to the inclusion in the ERM model of **innovative elements** drawn from the main best practices, which were applied to the Group's business reality and tested during the ESG Risk Assessment.

For more information, see details in the paragraph "Strategy and Risk Management, Risk and Opportunity Management" in the 2021 Annual Report.

RISKS RELATED TO CLIMATE CHANGE

After identifying the events that may, even potentially, affect the achievement of the company's targets, the importance of each event is determined through the use of a **prioritisation matrix,** which indicates the **probability of occurrence** of the event and its impacts (negative or positive). Each risk is assessed according to different qualitative and quantitative impact aspects, some operational (industrial/business, economic/financial, assets), assessed by risk owners/risk specialists, and other **specialistic** (legal/compliance, governance, health and safety, environment, social, reputation and market), assessed by specialist functions.
Risk prioritisation is therefore defined by combining measurements of impacts and probability related to them.

TRANSITION RISKS - POLITICAL AND LEGAL RISKS

S Short term M Medium term L Long term

Tightening of the emerging regulatory framework

Description	Revision of EU regulations on CO_2 emissions from the European Emission Trading Scheme (ETS)	Penalising revision of EU regulations concerning the natural gas business and strengthening those concerning GHG emissions (e.g., disincentives for the use of fossil fuels, incentives for intermittent renewable sources), with a resulting reduction in demand for natural gas.	New frameworks/ guidelines that could affect Snam's reporting or behaviour in both the natural gas and the new businesses
Probability	Somewhat probable		
Impacts in the value chain	Operation	Products and services	Products and services
Time horizon	M		

TRANSITION RISKS - POLITICAL AND LEGAL RISKS

S Short term M Medium term L Long term

Tightening of the emerging regulatory framework

Potential financial impacts	Any penalties due to incorrect/non-return of fees Less investments Lower revenues[15] related to lower demand for products and services Increased costs From €9 to €10 million EBITDA/year		
Management actions	• 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 increase the energy efficiency of plants • Conversion of 6 compressor stations to dual fuel plants by replacing gas turbochargers with electric compressors	• Promotion of the use of natural gas and biomethane to replace more pollutant fossil fuels and promotion of renewable gases to support energy transition • Identification of ambitious emission reduction targets(-50% by 2030 vs 2018 for CO_{2eq} Scope 1 +2 and -55% to 2025 vs 2015 for natural gas), culminating in the achievement of carbon neutrality by 2040 • Snam Tec Project to reduce the environmental impact of Snam's activities by promoting innovation and contributing to decarbonisation • Significant contribution to the development of multi-molecule gas infrastructures, in particular energy networks and energy storage, to improve the use of programmable and low-impact fossil fuels, to improve the biomethane alternative and to ensure the necessary conditions to also accommodate hydrogen.	• Continuous monitoring of regulatory developments and best practices related to reporting, also through participation in international working groups

15 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 and tariff framework defined by 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.

TRANSITION RISKS - TECHNOLOGICAL RISKS

Short term | Medium term | Long term

Dissemination of new technologies favouring the use of energy sources alternative to gas and failure to adapt to new technological standards

Description	Reduction in natural gas demand from consumers and customers	Lack of expertise in technologies alternative to gas	Lack of development of the green hydrogen value chain and consequent reduced production capacity and/or demand
Probability	Probable		
Impacts in the value chain	Products and services	Operation	Products and services
Time horizon	M		
Potential financial impacts	Lower revenues due to lower demand for products and services Lower revenues due to lack of production capacity €1 million EBITDA/year		
Management actions	• Consolidation of new green projects related to the energy transition (biomethane, hydrogen and energy efficiency) • Commitments to expand sustainable mobility business also through the expansion of the network of natural gas refuelling stations and through hydrogen solutions	• Development of in-house expertise • Internalisation of expertise through acquisitions	• Entering into partnerships to foster the development of operators along the hydrogen value chain • Enabling hybrid technologies (e.g. dual-fuel plants) to favor the transport of green gas mixes (biomethane + hydrogen) • Participation in round tables in order to take a leading role in advocacy and awareness raising activities for the use of hydrogen as an energy source for decarbonisation, both in Italy and abroad

TRANSITION RISKS - MARKET RISKS

Short term | Medium term | Long term

Reduction in gas demand

Description	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
Probability	Probable
Impacts in the value chain	Products and services
Time horizon	L
Potential financial impacts	Lower revenues[16] due to lower demand for products and services €9 million EBITDA/year
Management actions	• 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) • Investments in infrastructures in a multi-commodity perspective (e.g. hydrogen backbone, H2 test in depleted gas field, development of storage and CO_2 skills) • Support to the diffusion of more efficient gas technologies (gas heat pumps and high- efficiency cogeneration heating pumps) • Taking part in Italian and European round table discussions, including association ones, as part of energy transition and climate neutrality • Awareness-raising activities around public opinion on natural gas as a key source to ensure energy security and enable the phasing out of coal in electricity generation • Monitoring the European and national legislative initiatives on natural gas and representing corporate interests with regard to various institutional stakeholders • Positioning activities and taking part in industry studies • Monitoring of international, European and national public financing programmes in the infrastructure, energy and sustainable transportation fields • Participation in integrated projects on an international scale concerning green and low carbon gases (biomethane and green and blue hydrogen) along the entire value chain to support their further development

16 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 and tariff framework defined by 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.

TRANSITION RISKS - REPUTATIONAL RISKS

Short term | Medium term | Long term

Negative perception of the companies that operate in the fossil fuel sector by public opinion

Description	Establishment of organised groups that disagree with the new works that could cause a delay or the non-acceptance, by the Institutions, of the construction of the works by the Institutions. Stakeholders' increased concern or negative feedback.
Probability	Probable
Impacts in the value chain	Products and services
Time horizon	M
Potential financial impacts	Lower revenues due to lack of production capacity Higher costs in communication activities €1 million EBITDA/year
Management actions	• Representation actions with institutional stakeholders in order to promote the centralisation of the gas infrastructure as a tool for the development of renewable gases (for example, biomethane and green hydrogen) supporting the fight against climate change • 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 • Taking part in Italian and European round table discussions, including association ones, as part of energy transition and climate neutrality • Adherence to Italian, European and international initiatives aimed at strengthening the commitment to reducing methane emissions such as the Oil & Gas Methane Partnership OGMP 2.0 protocol of UNEP • Identification of ambitious emission reduction targets (-50% to 2030 vs 2018 for CO_{2eq} Scope 1 + Scope 2, -55% to 2025 vs 2015 for natural gas and -46% and -55% to 2030 vs 2019 for Scope 3 emissions respectively for investees and other emission categories and for suppliers in relation to CapEx) culminating in the achievement of carbon neutrality by 2040 • Adherence to the TCFD and publication of an ad hoc document • Performance disclosure to combat climate change through sustainability-related documentation

PHYSICAL RISKS - ACUTE RISKS

S Short term M Medium term L Long term

Increase in the severity of extreme weather events, impacting service continuity and quality

Description	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
Probability	Very probable
Impacts in the value chain	Operation
Time horizon	S
Potential financial impacts	Increased costs for insurance premiums Increased operating costs Increased costs for communication with the community from €2 million to €3 million EBITDA/year
Management actions	• Bringing the recovery plan business continuity management system in line with international best practices • Technologically advanced tools for monitoring/controlling the state of infrastructures/plants, also in view of their useful life, and the environmental context in which they are located • Systematic and continuous maintenance and control • Timely implementation of Emergency Response Procedures • Continuity of investments in gas storage, to provide additional flexibility in the event of supply discontinuity or possible more aggressive gas demand peaks • Design and construction of transport infrastructures based on the latest technical and safety regulations, carrying out dedicated studies (geomorphological, hydraulic, environmental risks, etc.) during the design phase

PHYSICAL RISKS - CHRONIC RISKS

S Short term M Medium term L Long term

Temperature increase resulting in lower gas demand

Description	Lower demand for gas for heating buildings in winter periods and consequent need for storage or identification of alternative uses
Probability	Probable
Impacts in the value chain	Products and services Lower energy/gas use by the end consumer (Downstream)
Time horizon	L
Potential financial impacts	Less investments Lower revenues Increased operating costs €9 million EBITDA/year
Management actions	• Consolidation 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) through the use of a gas technologies such as heat pumps and micro-CHP • Continuous technological scouting in critical areas for the energy transition and the decarbonisation of our infrastructures

OPPORTUNITIES RELATED TO CLIMATE CHANGE

The opportunities related to climate change are identified through a similar methodology to the one described for the risks. Also in this case there is an assessment of the impacts (industrial/business, economic/financial, asset, health and safety, environmental, social, governance, reputational and market) related to each opportunity and specific actions are identified to seize the advantages that these opportunities may present.

RESOURCE EFFICIENCY

S Short term M Medium term L Long term

Reduction of internal energy consumption

Description	Reduction of energy consumption thanks to more efficient operating processes, with consequent reduction of the GHG emissions and of the cost related to the purchase of the relative CO_2 quotas
Probability	Very probable
Impacts in the value chain	R&D investments Operation
Time horizon	M
Potential financial impacts	Lower indirect operating costs of quotas €14.7 million EBITDA/medium term
Actions and strategies to capitalise on opportunity	• Identification of ambitious emission reduction targets (-50% to 2030 vs 2018 for CO_2, -55% to 2025 vs 2015 for CH_4 and -46% and -55% to 2030 vs 2019 for Scope 3 emissions), culminating in the achievement of carbon neutrality by 2040 • Increased activities and investments to meet decarbonisation targets • Conversion of 6 compressor stations to dual fuel plants by replacing gas turbochargers with electric compressors • Transfer of shares between Snam companies to optimise costs across the entire fleet of plants

ENERGY SOURCES

S Short term M Medium term L Long term

Use of energy sources and/or technologies with low GHG emissions

Description	Reduction of GHG emissions due to the use of green energy sources and consequent reduction of costs related to the purchase of CO_2 quotas
Probability	Probable
Impacts in the value chain	Operation
Time horizon	M
Potential financial impacts	Lower operating costs N/A
Actions and strategies to capitalise on opportunity	• Identification of objectives for increasing the production of renewable energy (e.g. installation photovoltaic systems), for purchasing green electricity and for installing low-emission technologies (e.g. new high-efficiency heat generators, trigeneration plants, etc.) • Identification of a new target for the use of at least 55% green electricity by 2030

PRODUCTS AND SERVICES

S Short term M Medium term L Long term

Development or expansion of business serving the energy transition

Description	**Biomethane** Development of installed capacity and of CNG and LNG and bio-CNG and bio-LNG stations, as well as of infrastructure projects for the supply of LNG to the distribution network **Hydrogen** Construction of H2 trains and refuelling stations, focus on thermal, feedstock and fuel cell sectors and development of R&D and venture capital initiatives **Energy efficiency** Development of project pipeline for Public Administration, residential sector and industrial customers	Improvement of the reputation of the business and a better perception of it by stakeholders	Increased demand for natural gas caused by the progressive reduction in the consumption of coal and oil and extreme climatic phenomena
Probability	Probable		
Impacts in the value chain	Products and services Operation	Prodotti e servizi Operation	Operation
Time horizon	L		
Potential financial impacts	Higher revenues from new business Greater investments €50 million EBITDA/medium term		
Actions and strategies to capitalise on opportunity	• Planning of investments for €1.3 billion in businesses for energy transition: • €750 million in biomethane infrastructure to reach a capacity of at least 120 MW (with particular reference to production from waste or agricultural/agro-industrial waste) and about €100 million for the development of (bio-)CNG/LNG stations and infrastructure projects for the supply of LNG to the distribution network • €250 million in hydrogen for the construction of hydrogen trains and refuelling stations for light and heavy vehicles and for the development of hydrogen in the industrial sectors (thermal, feedstock and fuel cells) • €230 million in energy efficiency to consolidate the position as national player • Acquisition of new companies in the field of energy transition (energy efficiency, biomethane) and the development of existing business (sustainable mobility) • Partnership with technological companies supporting the hydrogen business (e.g. De Nora, ITM Power)	• Promotion of Snam's business related to the energy transition	• Support for the phasing out coal and promoting the use of gas as an alternative fuel to more pollutant fossil fuels • Increased investment plan for the methanisation of new regions where the investee companies operate, linked to the coal/oil phase-out (e.g. DESFA, Terega) • Development of the gas conversion project in Sardinia, aimed at replacing fuels that have a greater impact on the climate • "LNG Offshore OLT terminal" Project located between Livorno and Pisa, in Tuscany, via an acquisition agreement with the Iren Group

MARKETS

S Short term M Medium term L Long term

Access to new foreign markets

Description	Increase in the supply of natural gas against an increase in demand due to the progressive reduction in the consumption of coal and oil with possible developments abroad	Sviluppo di nuovi business e servizi per la transizione energetica in paesi che possano usufruirne	Implementazione di accordi internazionali per rispondere alle nuove richieste di flessibilità e di diversificazione delle fonti di approvvigionamento
Probability	Probable		
Impacts in the value chain	Products and services	Prodotti e servizi Operation	Prodotti e servizi
Time horizon	L		
Potential financial impacts	Greater revenues Greater investments Up to €22 million Lower cost of debt/medium term		
Actions and strategies to capitalise on opportunity	• Analysis and possible pursuit of extraordinary operations of investments in companies operating in the Snam's core business (transportation, storage and regasification) in emerging markets where the demand for natural gas is supported by the need to replace the use of coal and other more polluting fossil sources (e.g. China, India) • Pursuit of service sales activities through Snam Global Solution, leveraging on the expertise gained in the various Group companies, also on the subject of energy transition (India, China, Middle East, North Africa, Balkans, Central and North America) • Signing strategic agreements with important sector operators within the main continental energy corridors • Redevelopment of Snam's role within the international infrastructure system (e.g. agreement for the sale to Snam of shares in the TTPC and TMPC pipelines linking Algeria to Italy and acquisition of shares in EMG, the owner of the offshore pipeline linking Israel to Egypt) • Project in the United Arab Emirates in collaboration with some of the most important international investment funds launched in agreement with ADNOC (Abu Dhabi National Oil Company) to invest in the energy infrastructure of the United Arab Emirates • Participation in national and international working groups in order to take a leading role in advocacy and awareness-raising activities for decarbonisation in Italy and abroad, using our expertise		

Attraction of new investors

Description	Expansion of shareholder base due to growing interest of SRI investors in the Company's share capital	Access to capital on favourable terms thanks to funding linked to sustainable development objectives and SRI investors
Probability	Probable	
Impacts in the value chain	Capital Operation	
Time horizon	M	
Potential financial impacts	Greater access to capital €9 million EBITDA/medium term	
Actions and strategies to capitalise on opportunity	• Participation in the assessment of the main international sustainability rating agencies (CDP, Sustainalytics and ISS ESG) and in the assessment of the main ESG indices (DJSI, MSCI, FTSE4good), increasing the Company's visibility among SRI investors and, more generally, among the entire financial community • Issuance of bonds related to emissions reduction and climate resilience projects (Transition bonds and Sustainable-Linked Bonds) • Snam's regular participation in roadshows/seminars with the aim of meeting institutional investors around the world, including SRI investors • Setting a target in the ESG Scorecard related to sustainable finance of increasing the weight of sustainable finance in total funding to 80% by 2025 • Publication of a Sustainable Finance Framework for the issuance of instruments to finance projects aligned with the Delegated Acts of the European Taxonomy and corporate activity in general • Alignment of activities related to European Taxonomy	

RESILIENCE

S Short term M Medium term L Long term

Business diversification

Description	Market development of energy transition businesses
Probability	Probable
Impacts in the value chain	Products and services Operation
Time horizon	M
Potential financial impacts	Diversification of revenues from growing demand for energy transition-related products and services Greater investments €50 million EBITDA/medium term
Actions and strategies to capitalise on opportunity	• 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), in Italy and abroad • Investments in energy networks and CO_2 storage from the perspective of a "multi-molecule" infrastructure company • Participation in working groups in order to take a leading role in advocacy and awareness-raising activities to promote the use of hydrogen at national and international levels • Actions and investments aimed at developing hydrogen as an additional source to support the energy transition (e.g. creation of dedicated business units, the inclusion of a 10% hydrogen blend in a section of the national grid, position papers, dedicated studies and strategic positioning) • Modernisation of infrastructure in a H-ready perspective, already 99% ready, and the definition of standards for the acquisition of only H-ready components for the grid

Governance for the management of climate change

In accordance with corporate governance best practices, Snam's commitment to combating climate change is a fundamental aspect of its corporate governance system. In order to strengthen this commitment even further, in February 2021, Snam supplemented its Articles of Association with an explicit reference to the corporate purpose, i.e. "Energy to inspire the world", with the aim of promoting the energy transition with a view to decarbonisation, as well as pursuing the principles of sustainability in the creation of long-term value not only for shareholders, but also for all stakeholders. In this regard, Snam also applies the recommendations of the new **Corporate Governance Code**, which came into force in 2021 and which emphasise the importance of the role of the Board of Directors in guiding the Company by pursuing sustainable success.
This commitment is evidenced by the presence of Snam, also for 2021, among the best Italian companies in the **Integrated Governance Index** developed by ETicaNews, the index that assesses corporate governance and the integration of ESG factors into corporate strategies.
Snam's Board of Directors, appointed by the Shareholders' Meeting of 2 April 2019, has set up four committees, three of which have been given specific roles in promoting sustainability within the Group. First and foremost, the **Environmental, Social & Governance Committee** (ESG Committee), which supports the continuous integration of environmental, social and governance factors into the company's strategies and activities aimed at sustainable success.
The **Remuneration Committee**, on the other hand, ensures the adequacy of the Company's Remuneration Policy, which also includes performance targets relating to ESG factors, including those related to climate change, in management's short- and long-term incentive plans (for more information, see the section "Snam's remuneration policy" at the end of this chapter). The **Control and Risks and Related Party Transactions Committee** defines the guidelines of the internal control system and supervises the process of identifying and managing the main corporate risks, including sustainability risks. Finally, the **Appointments Committee** performs investigative, propositional and advisory functions for the Board of Directors, proposing, evaluating and examining, among other things, candidates for the administrative bodies of Snam and the subsidiaries included in the scope of consolidation.
For more information on the composition of the Board of Directors and Board Committees, as well as on the ownership structure and the structure of the corporate governance system adopted by Snam, refer to the Report on Corporate Governance and Ownership Structure 2021.
Integrating sustainability into corporate governance also involves periodic communication between the Board of Directors, committees and management, which is essential to ensure that Snam's top management is constantly informed of the guidelines and the risks and opportunities associated with climate change.

The committees and managerial figures with expertise in climate change issues work closely with Snam CEO Marco Alverà, who has always been very committed to fostering energy transition and combating

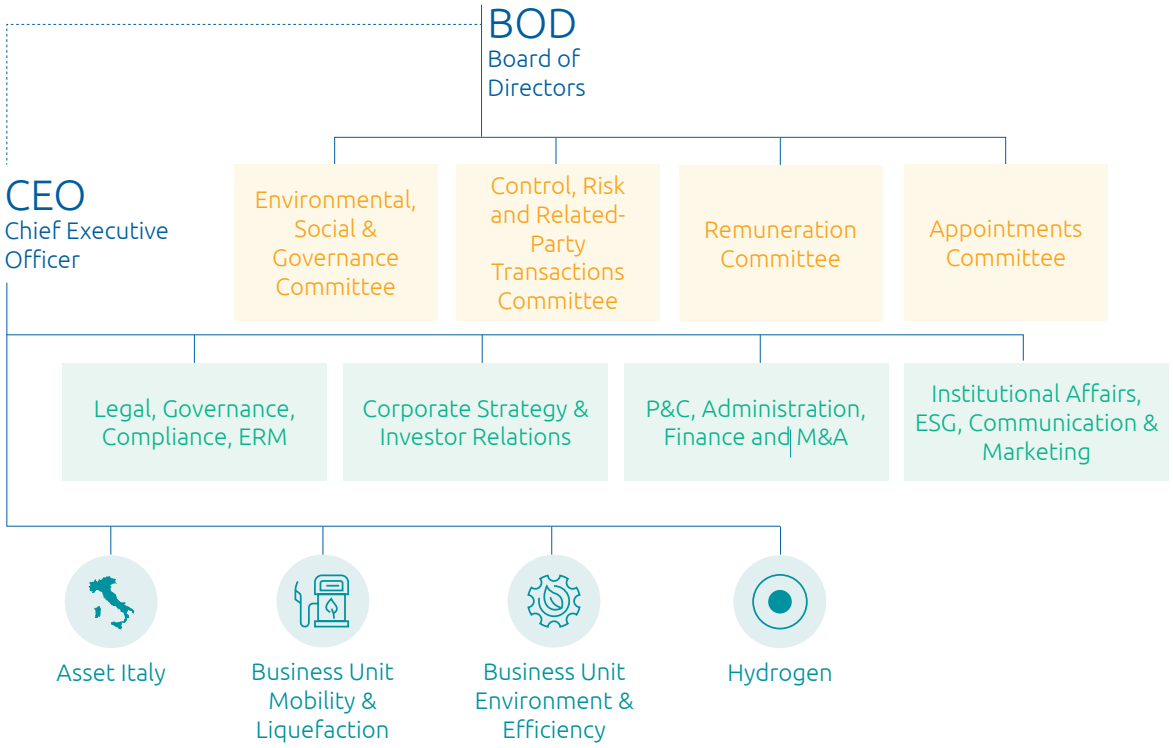
climate change through a strategy that sees natural gas as a bridge and green gas as a long-term solution for a truly green planet. As proof of this, in April 2021, he was awarded **"Person of the Year 2021" by #FORUMAutoMotive**[17] as an outstanding personality in promoting the development of biomethane and hydrogen for the benefit of sustainable mobility.

"Zhero. Il segreto dell'acqua (The secret of water)", a book for young people and the environment

Snam's CEO's activities to raise awareness of the importance of climate change issues continued in 2021 when his new book **"Zhero. Il segreto dell'acqua (The secret of water)**, published by Salani Editore.

The book, which tells the story of three boys who must solve a riddle to reveal to the world the potential of a clean energy source created from water, aims to open up to a young audience to spread the themes of sustainability, ecological transition and encourage the study of STEM (Science, Technology, Engineering and Mathematics) disciplines.
In November 2021, in conjunction with COP26, a podcast fiction inspired by the book was also presented to further illustrate the environmental benefits of hydrogen, especially that produced by electrolysis of water using renewable sources. The podcast is available on all the main listening platforms (Spotify, Spreaker, Google Podcasts, Apple Podcasts) and on the snam.it website.

THE GOVERNANCE SYSTEM FOR CLIMATE CHANGE MANAGEMENT



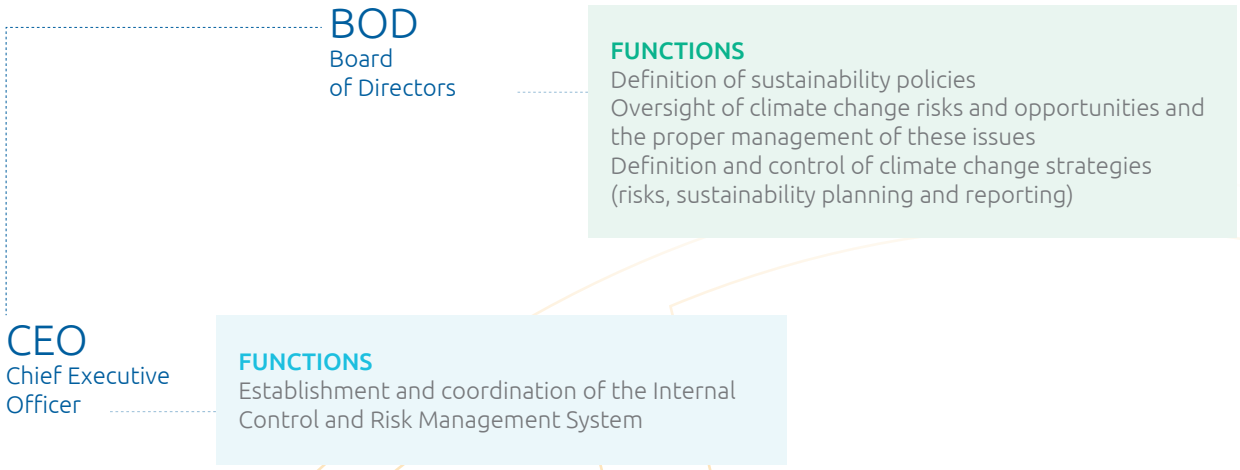
17 A movement of opinion on mobility issues and a reference point for the sector in Italy.

The Board periodically reviews 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 include the risks due to climate change, subject to an annual review;
- the share-based **Long-Term Incentive Plan** for the Chief Executive Officer and Executives with Strategic Responsibilities, which also includes ESG objectives including a KPI tied in part to the reduction of natural gas emissions consistent with the guidelines provided in the strategic plan approved each year;
- the **annual sustainability results and the HSE reassessment**, including their impacts on climate change;
- 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;

and it acknowledges the **information provided 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 OF DIRECTORS



The Board of Directors met 13 times in 2021, with an average attendance of 98% of its members. The average length of the Board meetings was 193 minutes. Demonstrating again the utmost importance given to sustainability issues in the Board discussions, the time dedicated to ESG issues by the Board of Directors amounted to approximately 41% of the meetings held in 2021, including during the board induction sessions held during the year.

The Chair of the Board of Directors, who does not have an executive role, is attributed, among others, the task of coordinating the work and ensuring that adequate information on the items on the agenda is provided to all Directors.

In particular, in 2021, the Board of Directors:

- was informed subsequently at each meeting of the Environmental, Social & Governance Committee (ESG Committee) about the matters dealt with by the Committee, as described below (see the "Committees" section);
- as part of the reporting on non-financial information, has reviewed and approved the Non-Financial Statement pursuant to Legislative Decree no. 254 of 2016, the Sustainability Report, as well as the

document "Financial Disclosure on climate change 2020";
- reviewed the progress of projects and initiatives launched in the area of sustainability.

The Board Induction

Although Snam's Directors have significant experience in the field of sustainability (55% of Directors have expertise in these issues), the dynamism and relevance to the sector of ESG issues, and in particular those relating to climate change, make it necessary to update them periodically. The board induction sessions, organised after the appointment and throughout the term of office, are aimed at providing adequate knowledge of the business sector in which the Group operates, taking into account the dynamics of the company and the evolution of the corporate structure. ESG sessions are organised with a view to keeping Snam's Board of Directors and Board of Statutory Auditors informed about climate change aspects and initiatives. These sessions focus, among other things, on issues related to sustainability and their integration into corporate strategy and business decisions. In 2021, six board induction sessions were held on, among other things, the role of sustainable mobility; in-depth discussions on hydrogen development projects; hydrogen transport and storage and market scenarios; recent developments in the regulatory framework; talent development and corporate welfare initiatives.

Environmental, Social & Governance Committee	**FUNCTIONS** Examines the policies for integrating environmental, social and governance issues into the business model, also through the analysis of the related KPIs Supports the Board of Directors in carrying out the analysis of issues relevant to the generation of long-term value for the purpose of examining and approving the Company and Group's business plan Examines the initiatives undertaken by the Company to deal with the issues raised by climate change and related reporting Examines the guidelines, objectives and consequent sustainability processes and the sustainability report submitted annually to the Board of Directors Monitors the Company's positioning with respect to the financial markets on sustainability issues Examines sustainable finance initiatives Examines the non-financial reporting submitted to the Board of Directors Assesses sustainability risks in the medium to long term
Control, Risk and Related-Party Transactions Committee	**FUNCTIONS** Periodically examines the main risks and opportunities, including those resulting from climate change Supports the Board of Directors in the definition of the guidelines for the internal control and management of medium and long term risks, so that the main risks are correctly identified, measured, managed and monitored (including risks that may be relevant in terms of sustainability, in coordination with the ESG Committee) Supports the Board of Directors in determining the degree of compatibility of these risks with management that is consistent with the strategic objectives
Remuneration Committee	**FUNCTIONS** Examines the guidelines issued by the CEO and, with a view to promoting the creation of sustainable value in the long term: (i) general criteria for the remuneration of executives with strategic responsibilities; (ii) general guidelines for the remuneration of other executives of Snam and its subsidiaries; (iii) annual and long-term incentive plans, including share-based plans Defines ESG performance targets, identified in agreement with the ESG Committee, including those related to climate change (e.g., emissions reductions), which are included in management's short- and long-term incentive plans

COMMITTEES

In 2021, the ESG Committee met 16 times, with 98% of its members present. The meetings lasted an average of 115 minutes and covered the following topics:

- review of Snam's positioning in the sustainability indices
- review of: (i) the Sustainability Report, (ii) the Consolidated Non-Financial Statement (DNF) and (iii) the Financial Disclosure on Climate Change;
- review of the Report on Corporate Governance and Ownership Structure;
- calculation methodologies regarding the gender pay-gap;
- review of the results of the board evaluation activity;
- review of the harassment policy and stakeholder engagement policy;
- review of the Human Rights Policy;
- review and proposal for adoption of the Shareholders' Engagement Policy;
- review of ESG performance indicators included in the Remuneration Policy;
- update of the ESG risk framework
- review of the methodology and results of the ESG risk analysis as per the 2021-2025 Strategic Plan;
- analysis of Sustainable Finance initiatives;
- review of proposed amendments to the Committee's Regulation;
- analysis in view of the Company's adherence to the UNEP Framework and consequent changes in the methodologies for calculating the emissions reduction target.

THE ROLE OF MANAGEMENT

Given the relevance of issues related to the energy transition within the company's strategy, Snam's managers have specific skills not only in the area in which they operate, but also in climate change, confirming the integration of these aspects into the corporate governance model. These figures act as support to the CEO, to whom they report directly. With a view to raising awareness on the issues of climate change and energy transition, Snam presented the new 2021-2025 Strategic Plan to the corporate population, also providing Q&A sessions.
In addition, in support of the collaboration, dialogue and listening nature of the Company, since 2018 the various corporate areas and functions, including ERM, Health, Safety, Environment and Quality, CSR & Communications, Corporate Strategy and Business Unit Asset Italia, have been meeting periodically to discuss and consequently harmonize their actions in pursuit of the objectives related to climate change.

CEO
Chief Executive Officer

The AD, identified by the Board of Directors as the subject responsible for the internal control and risk management system, with the task of planning, implementing and managing this system, has set up an organisational structure that integrates climate change issues and risks into all phases of the business cycle.

Asset Italy

The **Chief Industrial Asset** oversees the definition of the industrial strategies, guidelines and objectives of the gas transportation, storage and regasification business, in line with the strategic guidelines and protocols defined by Snam, including those relating to energy transition. It participates actively in sharing the objectives related to climate change during periodic meetings with other functions.

Business Unit Mobility & Liquefaction

The **Chief Mobility Officer** oversees the definition of strategies, guidelines and objectives for the development activities of the mobility business. Furthermore, in collaboration with the Environment & Efficiency and Hydrogen Business Units, the application of biomethane and hydrogen in the mobility sector will maximise synergies with existing activities and investments.

Business Unit Environment & Efficiency

The **Executive Vice President** oversees the definition of strategies, guidelines, objectives and development of the biomethane and energy efficiency businesses. The latter promotes the origination of potential business initiatives in line with the Company's strategy, the evolution of the markets of interest and the expected economic results.

Hydrogen Business Unit

The **Executive Vice President** oversees the development of the Hydrogen Business, the definition of development strategies, guidelines and objectives, in line with the strategic guidelines and protocols defined by Snam, which place hydrogen as the long-term decarbonisation solution.

Legal, Governance, Compliance, ERM

The **Enterprise Risk Management** (ERM) function, which is supervised by the General Counsel, defines a risk management model that makes it possible to identify and assess risks, using standardised policies at the Group level, in order to plan risk mitigation actions and implement a (quarterly) reporting system. Climate-related issues are integrated into the overall Enterprise Risk Management process.

Corporate Services

The **Energy management & climate change** (belonging to the HSEQ function) has the goal of continuous improving the correct management of natural gas emissions, including through participation in the various international working parties and task forces (IGU, Marcogaz, GIE, GERG, etc.), also being involved in implementing the requirements of the energy efficiency directive in Italian legislation.

Corporate Strategy & Investor Relations

The **Head of Market Analysis and Strategy Definition reports to the Executive Vice President Corporate Strategy and Investor Relations** and oversees the monitoring of the development of the reference markets and competitors for Snam globally and the development of long- term strategic scenarios and evaluations of the attractiveness of reference markets, ensuring the development of the reference scenario for Snam.

P&C, Administration, Finance and M&A

The **Chief Financial Officer**, oversees the strategic planning process, the process of economic evaluation of investments and merger & acquisition transactions, and financial planning activities. Carries out feasibility studies also through analysis of the best national and international practice, in relation to potential sustainable finance initiatives.

Institutional Affairs, ESG, Communication & Marketing

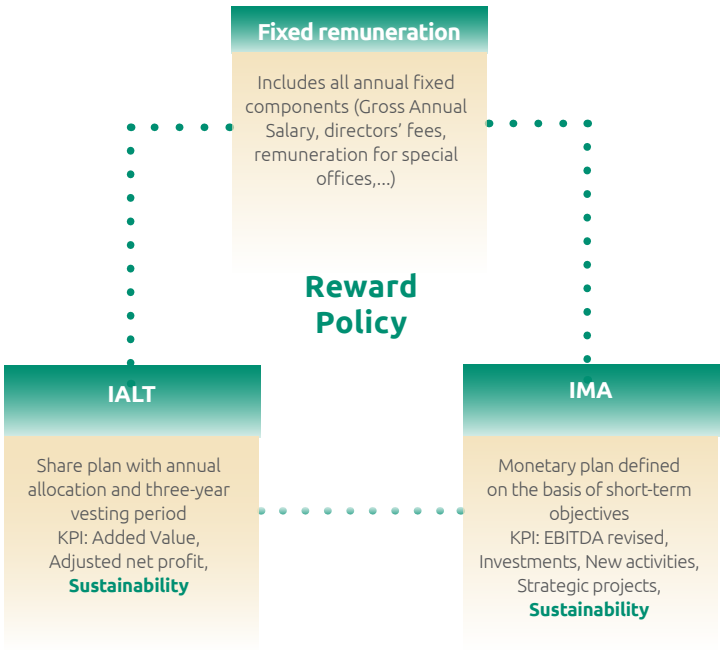
The **Head of Sustainability, reporting to the Executive Vice President Institutional Affairs, Corporate Social Responsibility& Communications**, contributes to identifying the processes and projects with regard to the issues relating to climate change and is responsible for internal and external reporting on these issues(half-yearly).

Management carries out its activities through periodic meetings and the sharing of information flows to also identify any new initiative related to climate change, as well as implementing and monitoring strategies identified:

- **Business review**, quarterly meeting between the Chair, the CEO and senior executives for monitoring the progress of the strategic targets and lines;
- **HSE review**, half-yearly meetings during which HSEQ 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.

SNAM'S REMUNERATION POLICY

Snam is committed to ensuring a remuneration system that complies with European and national legislation, which guarantees constant alignment with international best practices and promotes the Company's development in line with its Strategic Plan.
Snam's remuneration system, overseen by the Remuneration Committee, is aimed at recognising the responsibilities assigned to it, the results it achieves and the quality of the professional contribution provided by the Company management department and complies with the principles of people promotion and equal opportunities, established in the Code of Ethics and present, for some time, in Snam's organisational culture.
The Snam 2021 Remuneration Policy[18] for Directors, Auditors and Managers with strategic responsibilities[19] was approved during the shareholders' Meeting of 28 April 2021. The performance targets, used in the short- and long-term incentive schemes, are closely linked to the fundamental guidelines of the Strategic Plan.
Essentially, three remuneration instruments provided for in the Policy: fixed remuneration, short-term variable incentive (IMA - Annual Monetary Incentive) and long-term variable incentive (IALT - Long-Term Equity Incentive).



18 The Snam 2022 Remuneration Policy for Directors, Auditors and Managers with strategic responsibilities will be approved during the shareholders' Meeting of 27 April 2022.
19 Snam's Managers with strategic responsibilities, other than Directors and Auditors, are the following: Chief Industrial Assets Officer, Chief Financial Officer and Chief International & Business Development Officer, Executive Vice President Human Resources & Organization & PFM.

In the new Remuneration Policy, sustainability becomes an even more relevant factor as the following performance targets are considered: the weighted accident frequency and severity index, inclusion in the DJSI, FTSE4GOOD, CDP Climate Change, Sustainalytics indices, increased sustainable financing, reduction of natural gas emissions and fairer representation in terms of gender diversity in the management team. In particular, it provides that **20% of the short- and long-term variable incentive** is linked to sustainability KPIs, as described below:

SHORT-TERM VARIABLE INCENTIVES

Target	Description	Importance
IpFG (*) Weighted occupational accident frequency and severity index for employees and contractors	This index is made up of the frequency index, measured in terms of the number of accidents per million hours worked during the year, and the severity index, measured in terms of days of absence in relation to the number of hours worked	10%
ESG indices and ratings Inclusion and presence of Snam in sustainability equity indices and ESG ratings	This target provides for the inclusion and maintenance of Snam in the main sustainability equity indices, such as the Dow Jones Sustainability Index, FTSE4Good, and in ESG ratings, such as CDP Climate Change and Sustainalytics	5%
Sustainable Finance – Committed Funding	Target to increase (in €m) sustainable funding	5%

(*) Combined index of frequency and severity of accidents involving employees and contractors (the latter with the exception of those relating to non-regulated companies), with the exclusion of commuting accidents, takes into account both the frequency and the severity of the total accidents recorded with respect to the number of hours worked and is calculated by adding and weighing the two indices (IF and IG). The scope of analysis will include, if any, the companies acquired 6 months after their acquisition.

LONG-TERM VARIABLE INCENTIVES

Target	Description	Importance
Reduction of natural gas emissions[20]	Target calculated by linear interpolation between minimum (-26%), target (-27%) and maximum (-29%) values compared to actual emissions values at the end of 2015	10%
Gender diversity	Target that considers fair representation, in terms of gender diversity in Snam's management team, calculated in terms of the percentage of women in managerial and executive roles out of all Group managers and executives	10%

Performance Management is a process of assigning and assessing objectives linked to sustainability issues and behavioural aspects consistent with those defined in the corporate strategy to all the people who contribute to results on a daily basis, enabling them to grow together with the business. During 2021, the fourth cycle of Performance Management was launched, expanding the perimeter with the population of BUAIT technicians and employees (Business Unit Asset Italy) and with part of the New Businesses. The process was supported by an ad hoc training activity organised for the territory starting in October 2020 and ending in February 2021.

20 The target will be repriced in the 2022 Remuneration Policy taking into account the increase in the 2030 vs 2015 natural gas emission reduction target from -45% to -55%.

Acting for tomorrow: Snam and commitment against climate change

As part of its commitment to combating climate change, in 2020 Snam formalised its "Net Zero Carbon" decarbonisation strategy, which presents targets for reducing CO_{2eq} Scope 1 and Scope 2 emissions, as well as reducing methane emissions, with the ultimate goal of achieving carbon neutrality by 2040.
In addition, as explained in detail in the chapter "Strategy for the future: Net Zero Carbon", in 2021, Snam renewed its commitment by setting itself a more stringent methane emission reduction target, including two intermediate targets for reducing Scope 1 and Scope 2 emissions in 2025 and 2027 and integrating two additional Scope 3 CO_{2eq} emission reduction targets, to be achieved through joint initiatives between Snam, its subsidiaries and its suppliers.
In order to understand the progress made with respect to the set targets, the Group constantly monitors the evolution of its performance trends, identifying, at the same time, actions for improvement and adopting transparent communication addressed to all stakeholders. With this in mind, Snam measures and reports climate performance in relation to energy consumption, energy produced from renewable sources, greenhouse gas emissions (Scope 1, Scope 2 and Scope 3), emissions from the combustion process and natural gas emissions, as well as other indicators included in the Group's ESG Scorecard. For more information on the latter, see the section "Transition to Net Zero, ESG Scorecard" in the 2021 Sustainability Report.

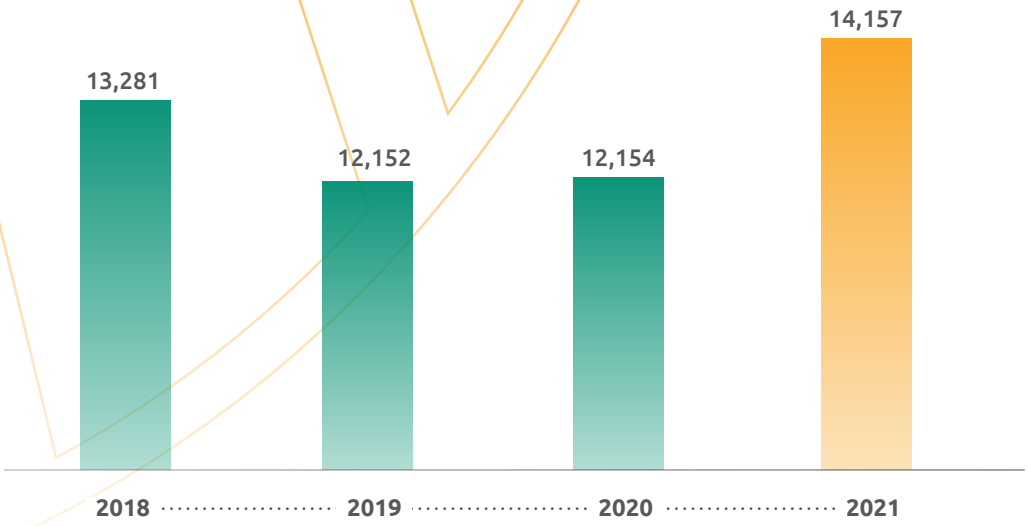
ENERGY EFFICIENCY

In order to further contribute to improving energy efficiency and reducing climate-altering emissions, Snam will gradually replace gas turbines with electric compressors in gas transport and storage plants.
In terms of Snam's energy consumption, the most significant portion is attributable to the operation of the gas turbines used in the compression plants and storage concessions, which account for 89% of total consumption. In order to reduce the resulting impact on the environment, Snam has launched **energy management**, including:

- the installation of photovoltaic plants at the main premises for the production of green electricity;
- the acquisition of electricity from certified renewable sources through specific supply contracts;
- the installation of high-efficiency heat generators, in particular at gas reduction and regulation plants;
- the installation of trigeneration plants;
- the installation of turboexpanders;
- the improvement of the energy efficiency of buildings.

In order to further contribute to improving energy efficiency and reducing climate-altering emissions, Snam will gradually replace gas turbines with electric compressors in gas transport and storage plants.

2018-2021 ENERGY CONSUMPTIONS (TJ)



Despite the difficulties related to the Covid-19 health emergency, during 2021, Snam continued energy efficiency activities at the Group's operations.
The amount of electricity produced from renewable sources decreased in 2021, due to the partial decommissioning of the Snam4Environment group's cogeneration plants at the end of February, following the start of biomethane production. On the other hand, the total number of plants has increased thanks to the installation of multiple photovoltaic plants in various buildings owned by the company (territorial offices and maintenance centres), reaching a total number of 2,833 (+20% compared to 2020) while the installed capacity has decreased from 5.12 MW to 4.31 MW (-16%). This decrease, due to the Snam4Environment plants, was partly mitigated by the increase in power related to the new back-up plants on the gas transportation network (increase in monitored plants and replacement of obsolete models), as well as two new photovoltaic plants connected to the electricity grid.

RENEWABLE ENERGY PLANTS

Type	2019			2020			2021		
	no.	Total power (kW)	Energy produced (MWh)	no.	Total power (kW)	Energy produced (MWh)	no.	Total power (kW)	Energy produced (MWh)
Wind generators	1	1.7	829	1(*)	1.7	22,125	**1 (*)**	**1.8**	**10,562**
Photovoltaic systems	1,793	1,127		2,355(*)	1,198		**2,829 (*)**	**1,306**	
Cogeneration plants				4(**)	3,922		**3 (**)**	**2,997**	
Total	1,794	1,129		2,360	5,122		**2,833**	**4,305**	

(*) Back-up plants = 2,788, of which 2,787 photovoltaic and 1 wind.
(**) Biomass-fuelled plants producing green electricity (the number refers to electric generators)

In 2021, Snam has further increased some energy KPIs, making them more challenging and targeting 2025, in relation to energy production from the trigeneration plants installed at the Gallese and Istrana power plants and to improving the energy efficiency of buildings. The Group's multi-year energy efficiency targets are in line with expectations, while the KPI that foresees the achievement of an annual production of electricity from photovoltaic plants of at least 860 MWh has been amply met, with 950 MWh reached in 2021.
Finally, with a view to contributing to the sustainable development and energy transition of the entire country system, in January 2021, CDP Equity acquired a 30% stake in Snam4Efficiency, Snam's energy efficiency subsidiary, which took the name **Renovit**. The platform, aimed at promoting energy efficiency in condominiums, companies and public administration, is positioned in line with the objectives of the European Union's **Clean Energy for all Europeans** strategy and the national energy efficiency targets for 2030. Renovit allows its customers to reduce their environmental impact and increase their competitiveness, while at the same time improving the quality of life and the resilience of territories and cities.

OBJECTIVES AND PERFORMANCE

SGDs	KPI		Target	Performance 2021	
7, 13	MWh production of electricity from photovoltaic plants	ESG Scorecard	>860 MWh until 2025	**950 MWh**	✓
	Increase electricity purchased from renewable sources		55% to 2030	**41%**	⚙
	Trigeneration plants		13,000 MWh by 2025	**5,445 MWh**	⚙
	High-efficiency heat generators		110 MW by 2025	**94 MW**	⚙
	Improvement of the energy efficiency of buildings		Savings of 75,000 m³ per year of gas and 250 MWh per year of electricity by 2025	**Saving of 30,000 m³ of gas and 80 MWh of electricity**	⚙
	Installation of LED lighting systems		Replace 534 kW with 1,860 MWh savings by 2022	**Replaced 534 kW with 1,774 MWh savings**	✓
	% of retrofitted or methane-powered cars out of the total company car fleet	ESG Scorecard	49% to 2021 88% to 2025	**51%**	✓

ESG Scorecard KPI inserito nella ESG Scorecard

NET ZERO KPI inserito nella strategia Net Zero Carbon

✓ Target raggiunto

⊘ Target non raggiunto

⚙ Target in progress

GREENHOUSE GAS EMISSIONS

Combating climate change is the main challenge to which the energy world is called to respond by mitigating and reducing its greenhouse gas emissions. Using energy efficiently and procuring it from renewable energy sources are at the heart of Snam's strategy, which aims to contribute actively to achieving an energy mix made up of a good percentage of green gases, with the aim of reducing climate-changing gas emissions in the short term.
In 2021, the Group's total GHG emissions amounted to approximately 2.4 million tonnes of CO_{2eq} (+6% compared to 2020), an increase that was lower than that recorded for energy consumption (+16.5%). The increase in emissions is mainly attributable to the increase in fuel gas used in the compression stations of the gas transmission network, partially offset by the reduction in the storage stations and the regasification terminal. This containment has been further accentuated by the many emission reduction initiatives in place, including:

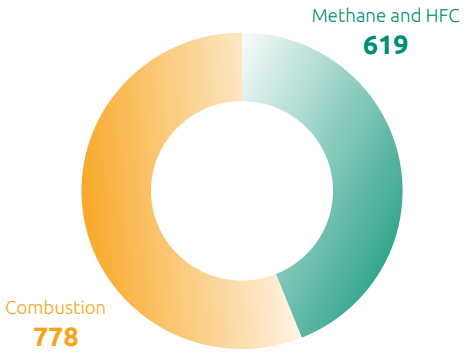
- reduction of natural gas emissions through gas recompression, hot tapping, LDAR, etc.;
- production and/or purchase of electricity from renewable sources;
- installation of heat generators with greater efficiency;
- installation of plants with LED lighting replacing other lighting equipment with greater consumption;
- savings derived from the restructuring and energy efficiency of buildings;
- expansion of smart working by employees, partly due to the Covid-19 pandemic.

The quantity of emissions not released into the atmosphere thanks to the implementation of these activities amounts to more than 171 thousand tonnes of CO_{2eq}, demonstrating Snam's commitment to reducing greenhouse gas emissions.

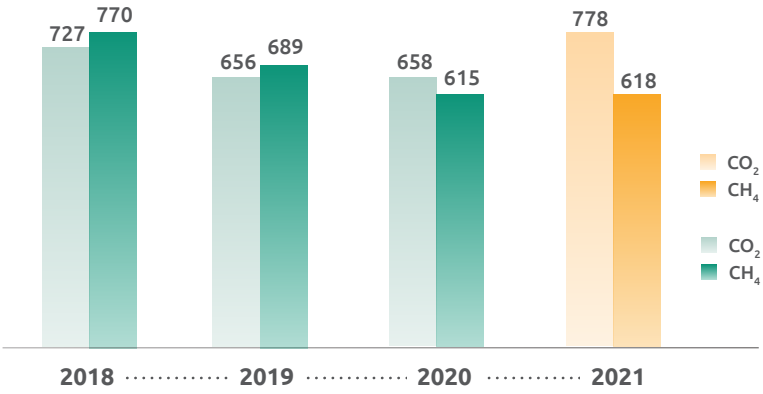
Direct emissions (Scope 1)

Methane (CH_4), the main component of natural gas, and carbon dioxide (CO_2) are the main greenhouse gas emissions emitted by Snam. Methane emissions arise from the release of natural gas into the atmosphere and are generated by normal plant operation, by operations to connect new gas pipelines and the maintenance thereof, or by accidental events occurring on infrastructure, whereas the CO_2 produced is directly correlated with fuel consumption.
In 2021, as in previous years, among the direct Scope 1 emissions by Snam, the marginal contribution from the use of hydroflurocarbons (HFC) in refrigeration systems, equal to 1 kt of CO_{2eq}, was evaluated.
Snam's direct emissions in 2021 amounted to around 1.4 million tonnes of CO_{2eq}, an increase of 10% compared with 2020, however down -7% vs. 2018, the reference year for the target.
During 2021, the company increased its target to reduce natural gas emissions from -45% to 2025 vs. 2015 to -55%; this target is even higher than the UN protocol's recommendation for the same period (-45%). The 2021 natural gas emission is essentially unchanged from 2020 (+0.4%) and remains in line with the Company's projection for 2025.

SNAM SCOPE 1 ($ktonCO_{2eq}$)



GHG SCOPE 1 EMISSIONS (2018-2021) ($ktonCO_{2eq}$)



Emissions from the combustion process

Snam's energy mix is composed almost entirely of natural gas (96.5% of total requirement in 2021), used to operate the gas turbines employed in the compression plants that provide the pressure needed to transport the gas (thrust consumption) and in the storage concessions (storage consumption), which, overall, represent 89% of total consumption, an increase compared to previous years (about 82%). In addition to natural gas, the other energy sources are electricity (2.8%) and other fuels (diesel fuel, gasoline, LPG and heat), which together amount to 0.7% of the total consumption. In 2021, global energy consumption increased compared to the previous year, increasing from 12,154 TJ in 2020 to 14,157 TJ in 2021 (+16.5%).

The trend of energy consumption for gas transport is strongly influenced by the use of import backbones: in 2021 there was an increase in gas injected into the network (8%) but, compared to 2020, gas was transported by more energy-intensive routes (North Africa backbone +48%), compared to the less energy-intensive and Russia (+2%) and Northern Europe (-75%) backbones. Overall, total gas transport consumption increased by 51% vs. 2020 and represents 68% of Snam's global consumption. On the other hand, there was a reduction in consumption for storage (-12% vs. 2020), which was greater than the reduction in stored gas (-6%) because the turbo-compressors were used more efficiently, reaching lower maximum pressures than the previous year, taking into account that the fields were not filled to their maximum capacity; this consumption represents 28% of Snam's total. With regard to the gas regasification plant, which accounts for 4% of Snam's overall consumption, there was a significant decrease in consumption (-57% compared to 2020), absolutely line with the decrease in the quantity of regasified gas (-58% compared to 2020). The total energy consumption of new businesses is stable at 1% of total consumption.

For these reasons, the overall trend in energy consumption in 2021 compared to 2020 (+16.5%) increased more than the increase in gas injected into the grid (+8% compared to 2020).

For some time, Snam has taken steps to activate measures aimed at containing the energy consumption of the power plants by implementing an integrated management system for the power plant fleet based on the acquisition of real-time data and by launching a program to replace gas turbines with electric motors that will materialize in the coming years.

Direct emissions from combustion, for most of the Company's plants, fall within the scope of the European Union Emission Trading Scheme (EU ETS). Overall, carbon dioxide emissions from ETS installations were higher than the emission allowances allocated for free, which are progressively reduced each year. Against approximately 0.73 million tonnes of carbon dioxide emitted into the atmosphere by ETS sites, approximately 0.14 million allowances were allocated free of charge, while another 0.59 million tonnes were bought from the market.

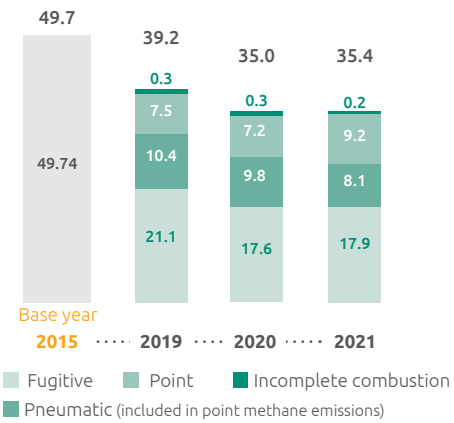
Natural gas and methane emissions

Snam's commitment to reducing natural gas and methane emissions concerns all its businesses, such as gas transport, storage and regasification, where emissions make up a significant part. Adherence to the UNEP[21] "OGMP 2.0" (Oil and Gas Methane Partnership 2.0) Protocol has encouraged a series of systematic, lasting and significant actions for Snam's subsidiaries as well, since the reference Framework provides for the involvement of not only the operated businesses, but also the non-operated ones, starting from a stake of more than 5%. With regard to methane emissions methane, for 25 years, Snam has been using an international methodology developed in collaboration with the GRI - US EPA (Gas Research Institute - US Environmental Protection Agency), integrated with a series of on-site measures carried out by various companies external already since the 90s. Over the last few years, the method of accounting for emissions has been updated by contracting out to a company a number of on-site measurement campaigns on representative plants and portions of the network, performed in accordance with UNI EN 15446[22].
Snam's natural gas emissions are:

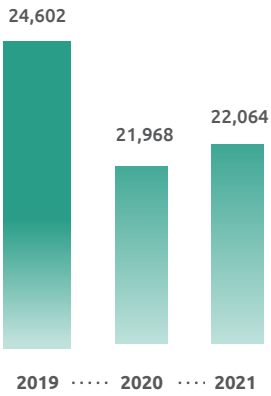
- Fugitive
- Point (including pneumatic ones, in accordance with the UN protocol)
- Incomplete combustion

In 2021, natural gas emissions amounted to 35.4 million m³, substantially stable compared to 2020 (+1%) and -29% compared to 2015, in line with the trajectory that plans to reduce methane emissions by -55% by 2025 vs. 2015, as announced in the 2021-2025 Strategic Plan. With regard to the target of recovering natural gas emissions during maintenance activities, which from 2019, was increased to 40% annual recovery from the previous value of 33% (understood as the average of the last 5 years), the 2021 value was 52%, 12 points above the set target and up from the 2020 figure of 49%.
Thanks to the implementation of numerous best practices that include in-line gas recompression interventions, interventions with tapping machine, a technology that allows disconnection from pipelines in operation for new connections without interrupting the service, the implementation of **Leak Detection and Repair** and other initiatives to replace emission components, in 2021, Snam avoided the emission into the atmosphere of over 156,000 tonnes of CO_{2eq}. Confirming the efficacy of the actions undertaken, the methane emissions per kilometre of network of the gas transport activity decreased (-2% compared to 2020 and -25% compared to 2015).

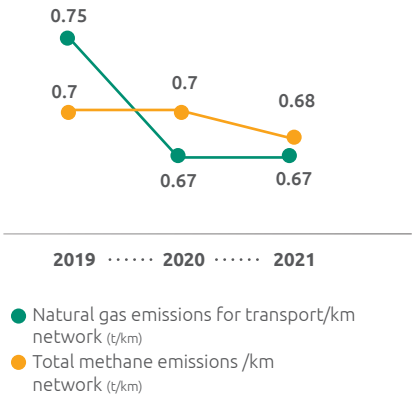
NATURAL GAS EMISSIONS (billions of m³)



CH_4 EMISSIONS (t)



NATURAL GAS AND CH_4 EMISSIONS NETWORK (t/km)



21 United Nations Environment Programme
22 Fugitive and diffuse emissions related to industrial sectors - Measurement of fugitive emissions of gaseous compounds from equipment and piping leaks.

OBJECTIVES AND PERFORMANCE

SGDs	KPI		Target	Performance 2021	
	Percentage of reduction in natural gas emissions (vs. 2015)	NET ZERO	-25.1% to 2021 -55.0% to 2025	**-28.9%**	✓
13 CLIMATE ACTION	Percentage of natural gas recovered from maintenance activities	ESG Scorecard	>40% of the average of the last five years until 2025	**52%**	✓

ESG Scorecard KPI inserito nella ESG Scorecard

NET ZERO KPI inserito nella strategia Net Zero Carbon

✓ Target raggiunto

⊘ Target non raggiunto

⚙ Target in progress

Snam's best practices to reduce methane emissions

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 55% reduction of greenhouse gas emissions by 2025, a more ambitious target than that indicated by the UNEP OGMP 2.0 protocol to which Snam adheres. This target was revised in 2021, and further improved on the previous target (-45%). Despite the constraints imposed by the health emergency, Snam achieved significant results in 2021, which are outlined below.

To improve the emission **accounting system**, the campaign in the field, conducted by a highly qualified outside firm has continued. In particular, emissions measurements were carried out at the vents of a representative sample of valve stations and a first measurement campaign of pneumatic emissions was initiated. During these years of activity, about 180,000 components have been measured and the technical data and models of the manufacturers of pneumatic equipment have been surveyed and verified. Based on this data and analysis, the Emission Factors were updated.

In order to minimise **point emissions,** gas recompression systems have been adopted which, during important works on the transport network, allow gas to be reinjected into the network avoiding its release into the atmosphere. A similar gas recovery system has been permanently installed in some compressor stations. In 2021, emissions of 5 million m³ of natural gas into the atmosphere were avoided thanks to specific projects involving the recompression of gas in the network and in the booster stations, the lowering of discharge pressure when work is carried out on the network and work using a tapping machine, a technology that makes it possible to disconnect from operating pipelines in the case of new connections without interrupting service.

Pneumatic emissions have been reduced by replacing existing models with new low or zero emission equipment and, in some plants, with air-powered instead of gas-powered actuation systems. In 2021, these emissions were reduced by 1.13 m³ as a result of the following initiatives:

- continuation of the **campaign to replace or decommission** approximately 460 control and command devices for globe control valves acting as monitors in pressure reduction systems. An additional 53 devices were replaced / decommissioned during 2021, with benefit to be achieved in 2022. In total, 427 devices were replaced or eliminated since the start of activities;

- continuation of the initiative to **install new thermal power stations** with high efficiency to replace existing heaters (around 300), with the associated pneumatic equipment removed (15 heaters replaced in 2021, and 97 since the start of activities);

- continuation of the **campaign to replace/remove high-emission control and command devices** on control valves acting as regulators in network pressure reduction systems, to be completed over a period of 4 years. During 2021, 115 devices were replaced (136 since the start of activities), of the approximately 400 subject to the intervention;

- completion of the **replacement of pneumatic actuators** with air models in all storage plants, with the last activities completed at the Fiume Treste and Settala plants.

Several strategies have been implemented to reduce **fugitive** emissions including the Leak Detection And Repair (LDAR) approach. LDAR programs consist of campaigns to monitor plant components for methane leaks and schedule maintenance work. In particular, the following results were achieved in 2021:

- continuation of LDAR activities with its own personnel, with a reduction in fugitive emissions of about -2.8 mln m³. Since the start of activities to date, this technology has already been implemented at more than half of the plants in the transmission network, at all booster and storage plants and at the LNG terminal;

- continuation of the project to **replace valves with pneumatic actuators with valves with electric actuators** on unit vents and replacement of pressurising valves on turbocompressors in booster and storage units. Activities at the Enna, Tarsia and Montesano power plants were completed in 2021, with benefits expected in 2022.

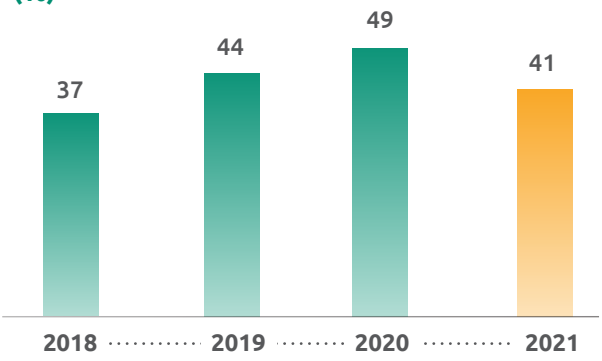
Energy indirect emissions (Scope 2)

Scope 2 indirect CO_{2eq} emissions, i.e. those from energy consumption, are determined using two approaches:

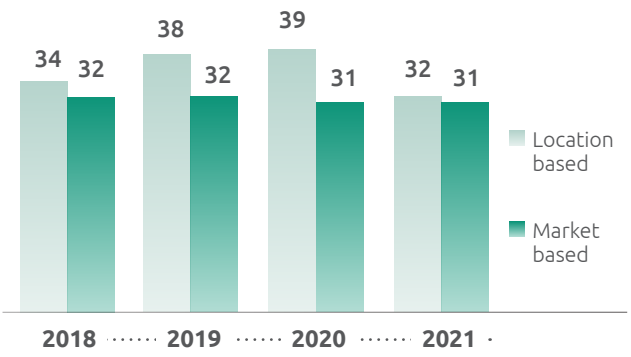
- **Market based (MB)**, which attributes a zero CO_{2eq} emission factor to energy consumption deriving from certified renewable sources. The MB approach highlights the commitment to reducing Scope 2 emissions from the use of energy produced from renewable sources;
- **Location based (LB)**, which instead considers an average emission factor of the national electricity grid.

Indirect CO_{2eq} emissions from energy consumption derive from the procurement of electricity and heat generated by third parties, which the Company uses for its own activities. In 2021, electricity consumption, at around 111 thousand MWh, decreased by 14% compared to 2020 as a result of the reduction in LNG consumption in Italy (-57% compared to 2020), due to the decrease in regasified gas. This decrease is reflected in the reduction of CO_{2eq} Location Based emissions (-20.5%). Market-based CO_{2eq} emissions, on the other hand, remained in line with the previous year, as a result of increased consumption by new businesses (+24% vs. 2020), mainly due to the energy expenditure required for waste treatment and biogas production at Snam4Environment sites, which are now fully operational and account for 85% of the total electricity consumption of the new businesses.
The result of the two opposing effects, the reduction in the energy consumption of GNL Italia, which is supplied with green electricity, and the increase in that of Snam4Environment, which is supplied with fossil electricity, has been a reduction in the overall share of electricity from renewable sources for the entire Snam Group, which has been offset by the switch to electricity from renewable sources at the Melizzano power plant and at Snam's headquarters.
The result of the two effects in indirect emissions from energy consumption has avoided a total of more than 12 thousand tonnes of CO_{2eq}.
As defined in the 2021-2025 Strategic Plan, Snam plans to cumulatively reduce Scope 1 and 2 emissions by 50% by 2030, in line with the previous plan.

GREEN ELECTRICITY PURCHASED / TOTAL ELECTRICITY PURCHASED (%)



GHG SCOPE 2 EMISSIONS (2018-2021) (ktonCO$_{2eq}$)



Other indirect emissions (Scope 3)

Indirect Scope 3 emissions are those emissions that originate from the value chain and are therefore not directly attributable to the scope of the Company. In 2021, Snam has decided to launch a project to define specific Scope 3 emission reduction targets and make them an integral part of its decarbonisation strategy. In particular, two targets have been set for 2030 compared to 2019 values, one on absolute emissions and the other considering emission intensity.

-46%

for emissions deriving from investee companies, from the extraction of fuels and from the production and transport of electricity, from business travel and from home-work commuting of employees

-55%

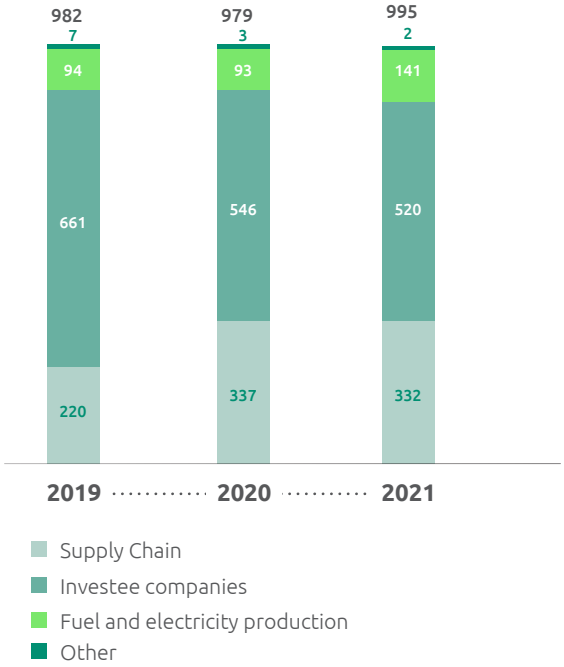
for the intensity index for emissions deriving from the supply chain, calculated as the emissions of suppliers parameterised with respect to the millions of euros of CapEx

Snam's Scope 3 emissions are calculated according to the **GHG Protocol** and have been reported for years in the CDP Climate Change Questionnaire (formerly the Carbon Disclosure Project). As part of the Scope 3 target-setting project, Snam revised its calculation methods and thus refined the data from previous years. In addition, a major coordination effort was also made to include in the emissions reported in this Report the emissions of investee companies, for which numerous exchange and coordination meetings were held.
Snam's value chain emissions can be classified into the following macro-categories:

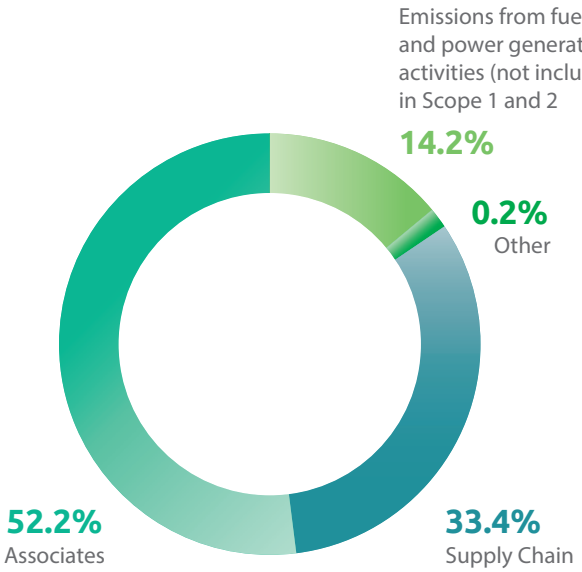
- **Emissions from Snam's investees** (GHG Protocol category): Investments);
- **Emissionsfrom the supply chain**, which include emissions from suppliers working for Snam (GHG Protocol categories: Purchased goods and services, Capital goods, Upstream transportation and distribution, Waste generated in operations and Upstream leased assets);
- **Emissions from fuel extraction and electricity generation and transport** that are not included in Scope 1 and 2 (GHG Protocol category): Fuel-and-energy-related activities not included in Scope 1 or 2);
- Other, including **business trips and home-work trips** of employees (GHG Protocol categories): Business Travels; Employee commuting).

During 2021, Scope 3 GHG emissions amounted to approximately 995 thousand tonnes of CO_{2eq} with an

INDIRECT GHG EMISSIONS SCOPE 3 ($ktCO_{2eq}$)



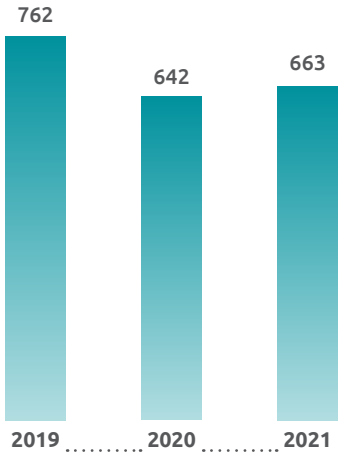
INDIRECT EMISSIONS SCOPE 3 (%)



increase of 2% compared to 2020 and 1% compared to 2019, mainly due to indirect emissions associated with the production of fuel and electricity, which are closely linked to the Group's energy consumption (+16.5 vs. 2020).
Compared to the targets of the net zero strategy, Snam has reduced its absolute emissions due mainly to investee companies (target 1) by **13% compared to 2019**, thanks to the increasing awareness of the investee companies themselves, which have reduced their emissions by 21% over the same period. Snam is continuing to work on this issue by organising workshops and meetings to share best practices for reducing greenhouse gas emissions, including the use of green gas, the implementation of LDAR programmes and the use of energy from renewable sources. Other activities to work towards this target include sustainable mobility and employee initiatives (company shuttles, public transport facilities, smartworking and the use of video conferencing systems for meetings).
On the other hand, with regard to the target for the intensity of emissions from the supply chain, Snam remained broadly in line with the 2019 values (+2%), while achieving a reduction compared to the 2020 values (-16%), thanks to green procurement initiatives for the procurement of goods and services and the continuous activity of raising awareness among suppliers on the issue of decarbonisation. For the next few years, this will be a challenging objective on which to work and on which Snam is committed to incentivising those suppliers that define clear plans to reduce greenhouse gas emissions and to develop synergies with suppliers to accelerate the fight against climate change
2021 was a significant year in the reporting of indirect GHG Scope 3 emissions, i.e. emissions from the value chain that are not directly attributable to Snam. In fact, the Company has defined specific Scope 3 emission reduction targets in its decarbonisation strategy, which will directly involve the supply chain and subsidiaries, as well as other emission categories.
For years, Snam has been calculating its Scope 3 emissions according to the GHG Protocol and reporting them in the CDP - Supply Chain Questionnaire (formerly the Carbon Disclosure Project), carrying out activities

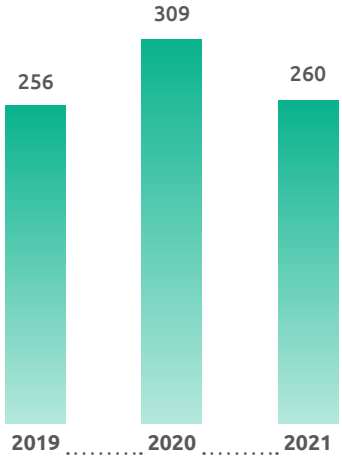
to raise awareness among suppliers, subsidiaries and employees. In promoting a culture aimed at saving energy and minimising indirect emissions associated with the Group's activities, Snam has adopted green procurement criteria for the procurement of goods and services, has carried out sustainable mobility initiatives and has implemented activities aimed at energy saving by employees (company shuttles, concessions for public transport, smartworking and use of video conferencing systems for meetings).

TARGET 1
($ktCO_{2eq}$)



Emissions deriving from associate companies, fuel extraction and electricity production and transportation, business travel and employee commuting

TARGET 2
(tCO_{2eq}/M€ CapEx)

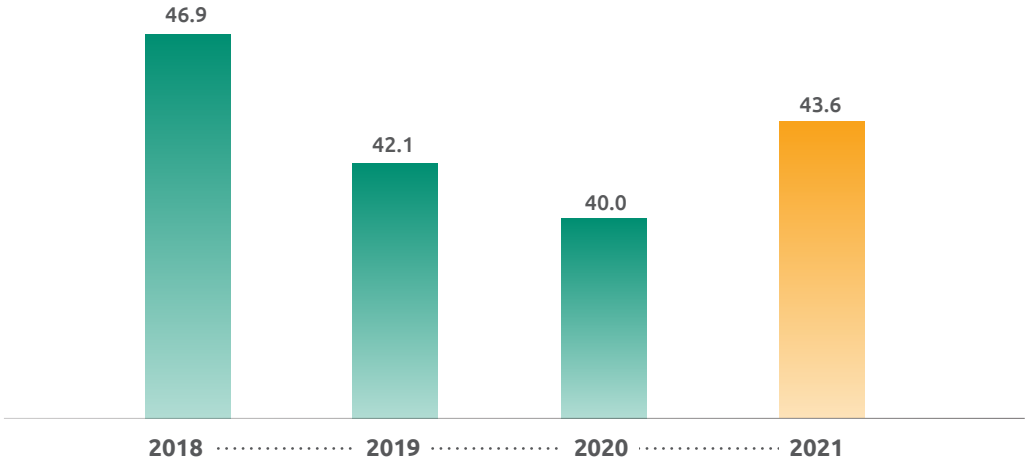


Emissions deriving from the supply chain, calculated as the emissions of suppliers parametrised against millions of euros of CapEx

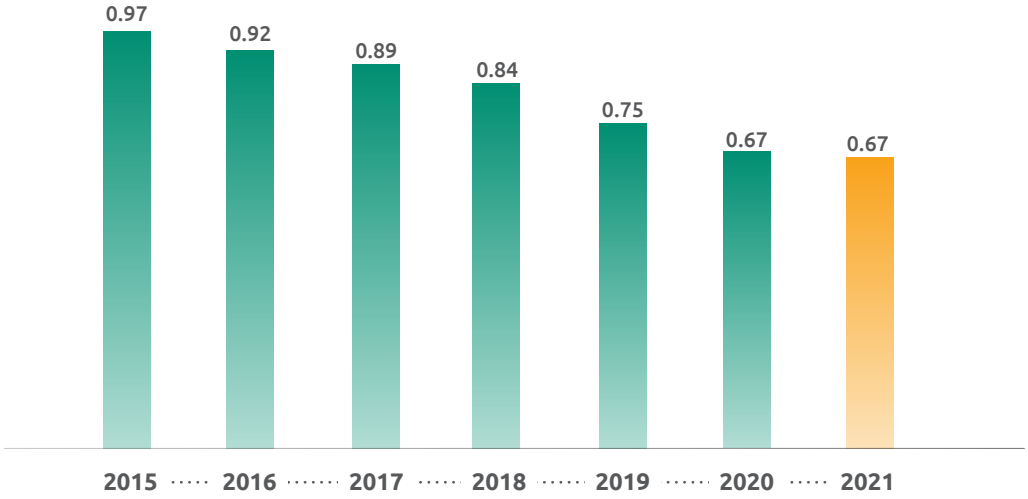
Emissions reduction and trend indicators

Snam plans to reduce Scope 1 and Scope 2 emissions by 50% by 2030 compared to 2018 to achieve carbon neutrality by 2040. With respect to the overall CO_{2eq} emissions - Scope 1 and 2, an increase of 9% was achieved in 2021 compared to 2020 and -7% compared to 2018.
The CO_{2eq} emissions (Scope 1 and 2) indicator on length decreased by 10% compared to 2020 and -7% compared to 2018 while the same indicator referred to gas injected into the network increased slightly compared to 2020 (1%) but was still down compared to 2018 (-10%). These trends are clearly affected by the increase in fuel used to transport gas.
The last indicator, global methane emissions related to network length, remains stable compared to 2020 and is significantly reduced compared to 2015 (-30%) thanks to the implementation of natural gas emission reduction initiatives implemented in recent years.

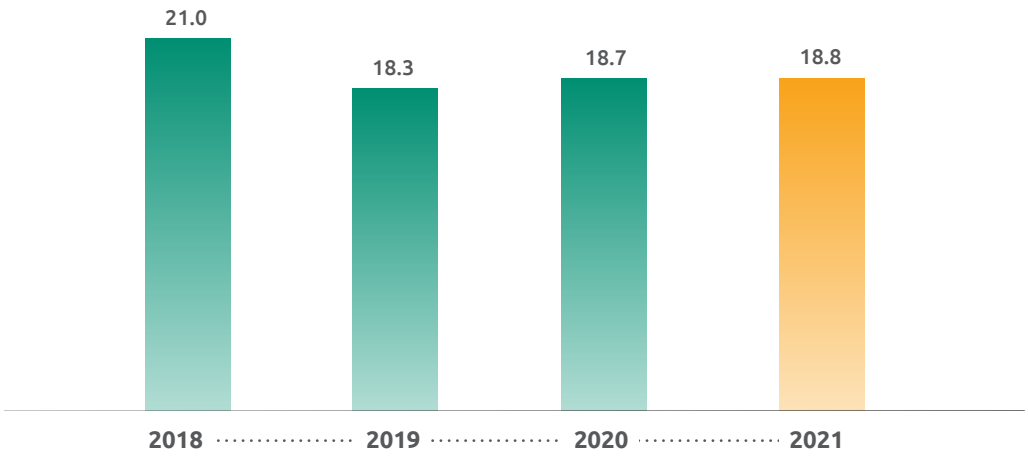
GHG INTENSITY INDEX - SCOPE 1 + 2 VS. NETWORK LENGTH (tCO_{2eq}/km)



TOTAL METHANE INTENSITY INDEX VS. NETWORK LENGTH (tCH_4/km)



GHG INTENSITY INDEX - SCOPE 1 + 2 VS. TRANSPORTED GAS (tCO_{2eq}/billion m^3)



PERFORMANCE INDICATORS

Snam's main targets and metrics related to the decarbonisation strategy are shown below.

	Measurement unit	2018	2019	2020	2021	KPI
Energy consumption	TJ	13,238	12,152	12,154	**14,157**	
Electricity consumption	MWh	104,694	117,378	128,752	**110,912**	
Use of green electricity	MWh	38,709	51,791	62,916	**45,105**	
Percentage share of green electricity on total	%	37%	44%	49%	**41%**	**KPI 2030**: to reach 55%
GHG Scope 1, 2 and 3 emissions (*)	Mt CO_{2eq}	1.97	2.36	2.28	**2.42**	
GHG Scope 1 and 2 emissions	Mt CO_{2eq}	1.53	1.38	1.31	**1.43**	
Mix reduction - Scope 1 and 2 on 2018	%		-10%	-15%	**-7%**	**KPI 2030**: -50% vs. 2018
GHG Scope 1 emissions	Mt CO_{2eq}	1.50	1.35	1.27	**1.40**	
of which CO_2 from combustion	Mt CO_{2eq}	0.73	0.66	0.66	**0.78**	
of which CO_{2eq} from methane	Mt CO_{2eq}	0.77	0.69	0.62	**0.62**	
of which from CO_{2eq} point methane	*Mt CO_{2eq}*	*0.16*	*0.13*	*0.13*	***0.16***	
of which CO_{2eq} from fugitive methane	*Mt CO_{2eq}*	*0.39*	*0.37*	*0.31*	***0.31***	
of which CO_{2eq} from pneumatic methane	*Mt CO_{2eq}*	*0.21*	*0.18*	*0.17*	***0.14***	
of which CO_{2eq} from unburned methane	*Mt CO_{2eq}*	*0.006*	*0.005*	*0.005*	***0.004***	
of which CO_{2eq} from HFC	Mt CO_{2eq}	0.0001	0.0015	0.0011	**0.0010**	
GHG Scope 2 emissions - Market based	Mt CO_{2eq}	0.032	0.032	0.0313	**0.0308**	
GHG Scope 3 emissions (*)	Mt CO_{2eq}	0.440	0.982	0.980	**0.995**	
Total natural gas emissions	mln m^3	44,4	39.2	35.0	**35.4**	
Percentage of reduction on 2015	%	-11%	-21%	-30%	**-29%**	**KPI 2025**: -55% vs. 2015 (KPI reprogrammed with more challenging target, also with respect to UNEP OGMP 2.0 indications)

	Measurement unit	2018	2019	2020	2021	KPI
Natural gas recovered from maintenance (recovered emissions/ potential point emissions)	%	40%	44%	49%	**52%**	**KPI 2023**: recover at least 40% as an average over the last 5 years
Gas injected into the grid	mld m^3	72.82	75.37	69.97	**75.77**	
Natural gas emissions/gas injected into the grid (**)	(%)		38.1	40.7	**37.1**	
Emissions of natural gas / gas stored (**)	(%)		0.033	0.035	**0.044**	
GHG Intensity Index - Scope 1 and 2 vs. grid length	t CO_{2eq} / km	46.9	42.1	40.0	**43.6**	
GHG Intensity Index - Scope 1 and 2 vs. transported gas	t CO_{2eq} / mld m^3	21	18.3	18.7	**18.8**	
Total Methane Intensity Index vs. grid length	t CH_4 / km	0.84	0.75	0.67	**0.67**	

(*) 2019 and 2020 figures recalculated.

(**) The figure includes point, pneumatic, fugitive and incomplete combustion emissions.

TABLE OF CORRESPONDENCE OF TCFD RECOMMENDATIONS (TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES)

TCFD Recommendations		Disclosure
GOVERNANCE **Disclose the organization's governance around climate-related risks and opportunities.**		
a)	Describe the board's oversight of climate-related risks and opportunities.	Describe the board's oversight of climate-related risks and opportunities.
b)	Describe management's role in assessing and managing climate-related risks and opportunities.	"Governance for climate change management - The role of management"
STRATEGY **Disclose the actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning where such information is material.**		
a)	Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term.	"The ERM model and the risks and opportunities associated with climate change - The risks associated with climate change" "The ERM model and the risks and opportunities associated with climate change - The opportunities associated with climate change"
b)	Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning.	"The ERM model and the risks and opportunities associated with climate change - The risks associated with climate change" "The ERM model and the risks and opportunities associated with climate change - The opportunities associated with climate change"
c)	Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.	"The context and reference scenarios" "Net Zero Transition" "Acting for tomorrow - Snam and the commitment against climate change"
RISK MANAGEMENT **Disclose how the organization identifies, assesses, and manages climate-related risks.**		
a)	Describe the organization's processes for identifying and assessing climaterelated risk	"The ERM Model and the risks and opportunities related to Climate Change - The ERM Model for Centralized Risk Management"
b)	Describe the organization's processes for managing climate-related risks	"The ERM Model and the risks and opportunities related to Climate Change - The ERM Model for Centralized Risk Management"
c)	Describe how processes for identifying, assessing, and managing climaterelated risks are integrated into the organization's overall risk management	"The ERM Model and the risks and opportunities related to Climate Change - The ERM Model for Centralized Risk Management"
METRICS AND TARGETS **Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material.**		
a)	Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process	"Acting for tomorrow - Snam and the commitment against climate change" "Performance indicators"
b)	Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks	"Acting for tomorrow - Snam and the commitment against climate change, the reduction of GHG emissions" "Performance indicators"
c)	Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.	"Acting for tomorrow - Snam and the commitment against climate change, the reduction of GHG emissions" "Performance indicators"

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