

Other operating information and results



This section of the report deals with activities and initiatives that have an impact on aspects that do not relate directly to core business processes, but contribute to the creation of value for the Company and its stakeholders.

In Snam's business model, the stakeholders "interpret" the industry environment and can influence, sometimes decisively, the conditions which determine the availability of the different capitals which the business needs in order to be able to operate. These close ties with the capitals, which develop around material issues of mutual interest, enable the stakeholders to benefit from the value that the business creates through its activities.

Development of human, social and relationship, and intellectual capital

Employment in times of change

To continue to play a key role within an ever-changing environment while continuing to lead in an international market abundant in opportunities, it is necessary to become capable of enhancing know-how and meeting new challenges in the regulated and free market alike.

People are called to effectively share experiences and skills and through teamwork to reach a single objective: a decisive factor to create innovation and bring value to the business. The strong sense of belonging to the Group makes it possible to actively engage all employees in continuous improvement, which is increasingly driven by an entrepreneurial spirit, simplification and implementation capacity. In this way, Snam continues to generate "good employment", characterised by stable and continuous work relationships for qualified and specialised activities. Moreover, through the Snam Institute, the Company sets itself the goal of enhancing the skills not only within the company but also outside.

As at 31 December 2018, out of a total of 3,016 employees, 93% were on permanent contracts of employment. Of these, 41 had a part-time contract. The average age of Snam Group employees is 44.9, while the average length of employment is around 19.5 years.

Breakdown of Staff as at 31 December

(no.)	2016	2017	2018
Executives	87	93	107
Middle Managers	421	456	480
Office workers	1,651	1,655	1,682
Manual workers	724	715	747
Total employees	2,883	2,919	3,016

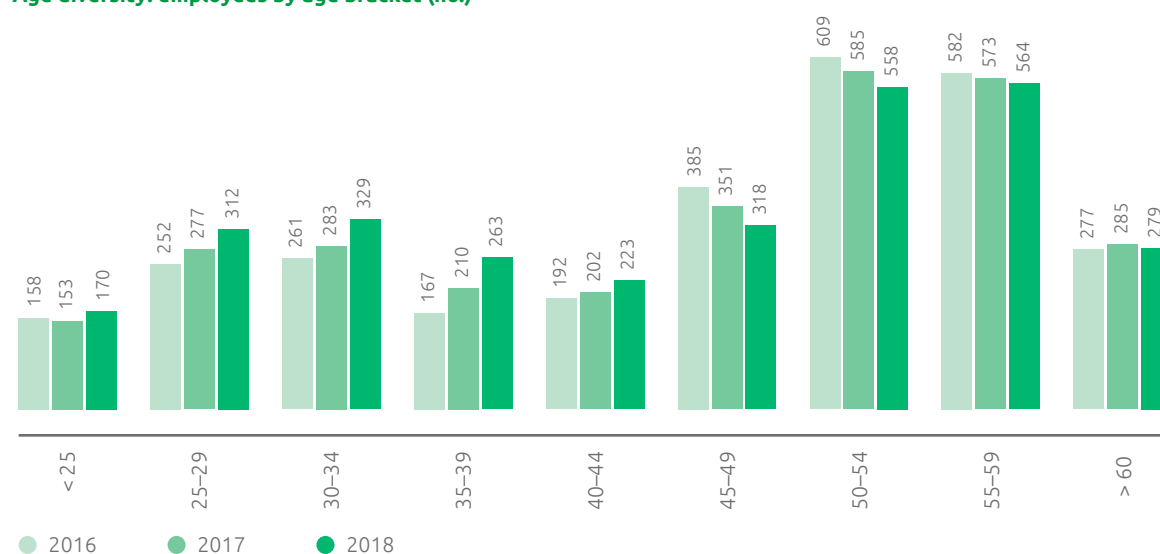
Personnel broken down by type of contract

(no.)	2016	2017	2018
Permanent contract	2,631	2,755	2,812
- Of whom on part-time contracts	45	42	41
Apprenticeship or internship contract	206	150	185
Fixed-term contract	1	14	19

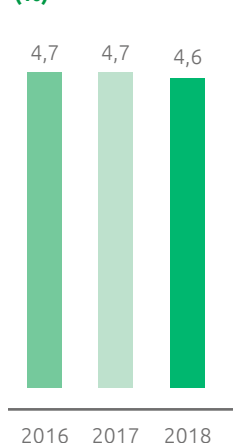
Personnel hired during the year

(no.)	2016	2017	2018
Hired from the market (total)	141	148	195
- of which university graduates	73	100	108
- of which school graduates	66	48	86
- of whom other	2	-	1
- of which women	35	53	42
Other new employees (non-consolidated companies, tender acquisitions, etc.)	36	36	126

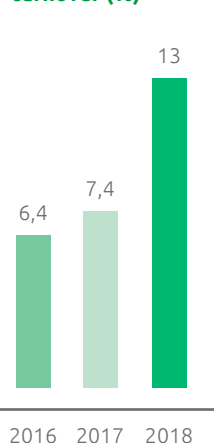
Age diversity: employees by age bracket (no.)



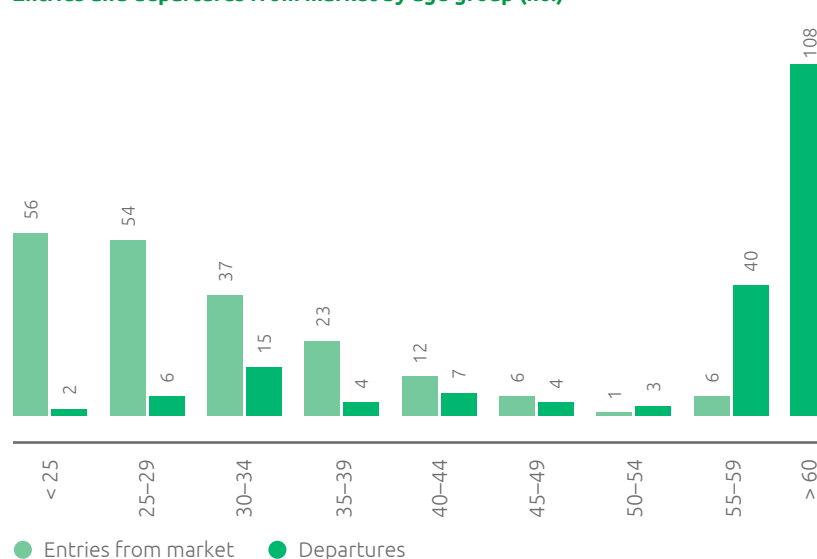
Absenteeism rate (%)



Personnel turnover (%)



Entries and departures from market by age group (no.)



Under 35s (811) account for 27% of the company population and have increased by 98 units on 2017. The absenteeism rate does not include senior managers and it was calculated taking into consideration all hours not worked (paid and

not paid) excluding holidays and catch up leaves. In 2018, the female absenteeism rate was 4.8% and the male absenteeism rate was 4.6%.

Development of roles and skills

In 2018, the development of the roles and skills of Snam focussed on improving the leadership model, on the implementation of a model of skills, on the identification and optimisation of talent throughout the organisation, on the maintenance of solid, structured succession plans guaranteeing a sustainable line of succession and the intensification of the level of engagement. In particular, 2018 saw the launch of the new Performance Management System, a decisive part of the Talent Review Discussion and the realisation of the Succession Plans. All assessment processes are formalised and include a feedback interview, which constitutes an institutional moment for exchange and communication between the manager and the employee, also in order to gather information that can be used to define new actions for the development and enhancement of people.

All jobs within Snam, Snam Rete Gas, GNL Italia and Stogit are subject to an analytical and overall evaluation of Complexity, Responsibility, Experience and Autonomy (C.R.E.A.) factors. In 2018, 198 CREA assessments were approved. Compensation systems are updated periodically based on a benchmark to the reference markets and taking into account the instructions received from the external stakeholders. In particular, these systems are meant to ensure recognition of the results achieved, the quality of the professional contribution provided and individual development potential of the person. In 2018, the scope of possible Long-Term Incentive Plan (ILT) beneficiaries was expanded to include all managers, with the aim of creating greater alignment of long-term variable remuneration with the primary goal of creating value for shareholders.

Incentive systems for the various brackets of the corporate population

Executives	<p>Along with any annual adjustment to fixed remuneration for merit or progression of roles/ responsibilities, Snam provides a variable incentive system designed to enhance the value of the professional contribution in the short term (IMA), through the allocation of an annual monetary incentive, and the medium-long-term, if necessary through the allocation of a long-term stock incentive (ILT).</p> <p>Claw-back mechanisms are provided, aimed at recovering the variable portion if the resulting compensation is not due because it was earned based on targets that were attained as a result of malicious or grossly negligent behaviour or that were proven to be manifestly incorrect.</p> <p>The Total Reward Statement, the informational packet regarding the breakdown of individual remuneration, ensures the valorisation and transparency of the remuneration system.</p>
Non-executive population	<p>Snam adopts a short-term variable incentive plan intended to reward best performance and the young resources with potential for development.</p> <p>What is more, all the companies in the group anticipate a "Participation Bonus", instituted by the National Collective Labour Agreement, based on the performance of profitability and productivity parameters, measured in relation to the targets agreed upon every year between the company and the trade-union representatives.</p>

Professional enhancement

The People Strategy developed by Snam focuses on three main pillars: enhancing the value of human resources, increasing productivity and the level of engagement, disseminating a culture of innovation and renewal. In this context, training plays a fundamental role in supporting management and the whole corporate population in paths to develop managerial capacity, technical skills, know how and innovation. Snam's commitment for 2018 was to increase the average number of training hours up to at least 32 per employee and to involve the 80% of the corporate population in at least one training session. The objective was achieved during the year with an average of approximately 36 hours of training per employee, whilst the involvement of the company population was 93%.

Extensive effort went into the worker training programmes, on sensitive matters such as health, safety and the environment. Numerous refresher, information and awareness-raising meetings were organised for all professional figures in relation to the implementation of safety measures.

To favour accurate information and the application of the principles set forth in the Model 231, the Code of Ethics and Anti-corruption legislation, specific training activities were carried out for specific segments of the corporate population. As regards training on business ethics and anti-corruption, a total of 321 hours of training were provided to 112 participants in 2018.

Staff training broken down by position

(no hours.)	2016	2017	2018
Executives	2,940	1,908	4,392
Middle Managers	10,021	8,600	19,072
Office workers	31,072	39,316	49,650
Manual workers	38,151	35,522	34,657
Total	82,184	85,346	107,771

Key training initiatives

Description	Hours provided (no.)	Participants (no.)
Technical training	58,120	4,454
Health, safety, environment and quality	28,345	4,953
Managerial training	19,257	3,822

NFS Corporate welfare and work-life balance

Corporate welfare is a powerful tool that is integrated with the public welfare system and which attempts to protect people from new social risks. Corporate welfare refers to a multiplicity of interventions, both monetary and in the form of services, which on the one hand generate benefits for employees who see increasing social protection and purchasing power, on the other they become a lever fundamental for companies, which benefit from a better working and productive climate.

With the aim of fostering a positive working environment, over the years, Snam has created a welfare system based on a long tradition of attention to people, that can grow and modify over time and meet with the emerging needs and demands of the various categories of employees. The in-depth analysis of the company population, different needs and sensitivities, periodically updated, allows Snam to develop a shared, functional and effective welfare system.

Digital culture and personal well-being are the drivers of the new 2018 Welfare Plan, reorganised into five areas of intervention: Family, Education, Life-work balance, Well-being and free time, Health. The five areas are then further divided up into 28 services (company and contractual), which allow Snam to meet the most current needs of the society in which we live. Some of the most innovative activities include the dediCARE service (Family area), created to help Snam employees solve minor and major family issues like assistance to the elderly, help with schooling and babysitting. In a time that is dominated by digital communication, the Education area prepares children, teenagers and adults to a correct use of the web and social media, with coding generation

courses and digital education. Within the projects of the Well-being and free time area, the workshops have been planned dedicated to food education, financial education and mindfulness, i.e. self-awareness and of the context in which we live. Alongside the services for health, home-work mobility and the concession of micro loans, the agreements have been renewed with the trade unions, with the "Welfare Premium" and Smart Working projects, designed to better meet the needs to conciliate life and work, striking an appropriate balance. Thanks to the "Welfare Premium", the choice can be made voluntarily as to whether or not to convert a percentage of the Participation Premium into Welfare Credits that can be used to purchase services for themselves or their families. All the news and active projects are available for consultation on the website snammy.it, which has been reorganised and given a new look to be even more user-friendly for ease of browsing.

NFS Diversity

Snam respects the dignity of everyone, and offers equal opportunities in every step and aspect of the employment relationship, avoiding all forms of discrimination based on sex, age, health, nationality, political opinion or religious views.

For Snam, diversity is a value and, in particular, gender diversity and equal opportunities: this is proven by the fact that the female component in 2018 grew compared with the previous year (+6.6%) notwithstanding a large portion of the business activities, in particular the operational ones, requires a technical training which on the market is owned by candidates which are mostly male.

The company's female population, at the end of the year, numbered 419 resources, 13.9% of the total number of employees (13.5% in 2017). 37 women have part-time contracts, out of the 41 working in the company. In order to make the most of diversity, in 2018 Snam continued to collaborate with Valore D, which Snam has supported since 2017, the first association of companies promoting diversity, talent and female leadership for the growth of companies and the country. This collaboration

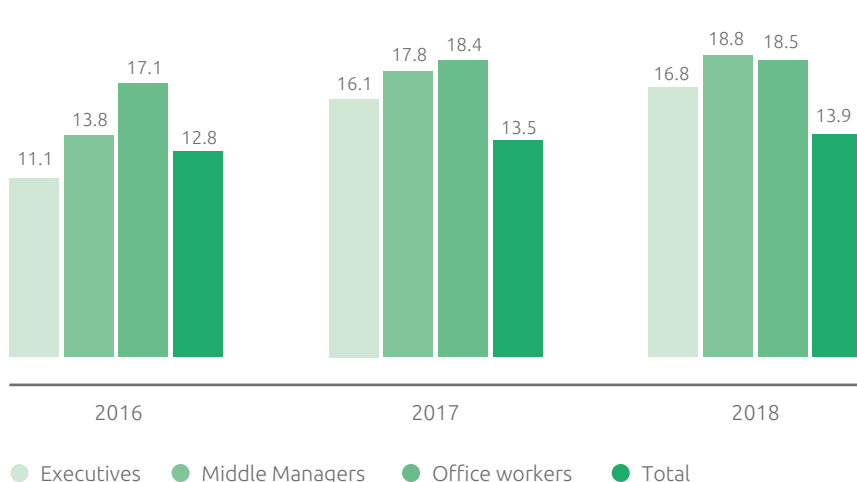
provided the employees with the chance to attend classes to enhance gender diversity, the differences that characterise different generations and cultures, for the development of an inclusive culture, a factor of innovation, competitiveness and growth for people and businesses.

125 people with disabilities work at Snam and their career path promotes inclusion and integration in company processes.

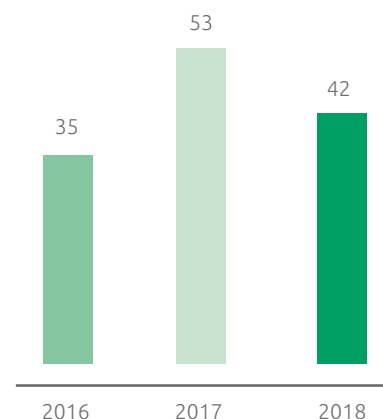
Staff training broken down by position (no. hours)

	2016	2017	2018
Average hours of training provided to men (hours/year)	30.2	31.3	36.9
Average hours of training provided to women (hours/year)	17.0	15.8	28.7

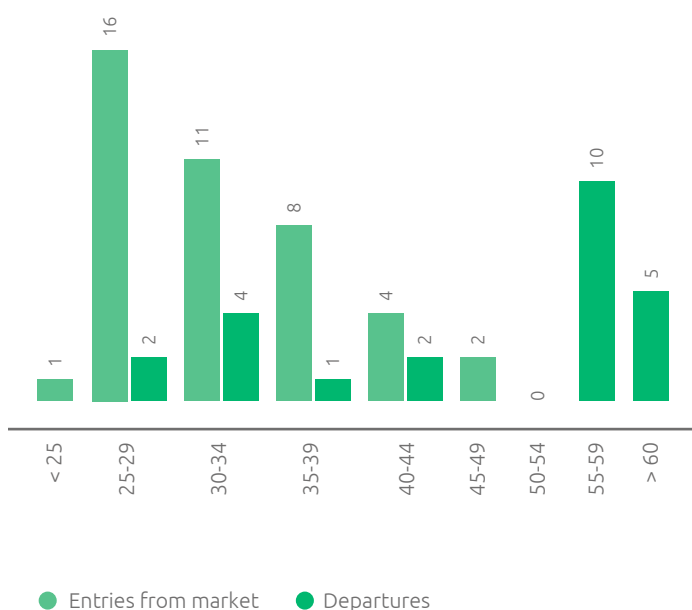
Total female presence and by qualification (%)



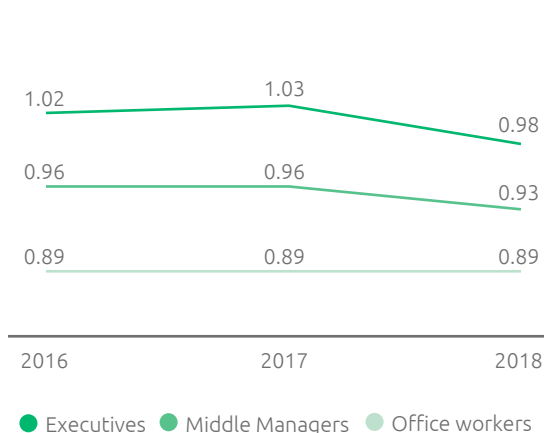
Women hired by the market (no.)



Entries from the market and exits by female



Gender and the pay gap (women/men)



The decrease in the pay gap between men and women in 2018 is mainly due to new hiring of executives and managers in entry level, which had a greater impact on the average AGR of women.

Stakeholders and relationship capital

In Snam's business model, the stakeholders "interpret" the industry environment and can influence, sometimes decisively, the conditions which determine the availability of the different capitals which the business needs in order to be able to operate. These close ties with the capitals, which develop around material issues of mutual interest, enable the stakeholders to benefit from the value that the business creates through its activities.

In order to develop our business activities, internal cohesion, image and reputation are also important. As a result, it is essential to manage our long-term relations with stakeholders (social and relationship capital) by focusing on trust, listening, being universally open and transparent, and attempting to maintain and develop constructive dialogue both within and outside the Company.

As evidence of this, again in 2018, Snam met with its stakeholders at the Partners' Day, held late November at Officine del Volo in Milan, witnessed by more than 500 suppliers, clients, employees, institutions, financial communities and media. The initiative was characterised by the attendance of the Chairman of the Board, Giuseppe Conte, and numerous speakers from the company's senior management and representatives of institutions. For the occasion, three new initiatives were presented on matters of innovation and the energy transition and social business: the Snamtec project, under the scope of which the company will invest 850 million euro by 2022 to construct the energy business of the future, the "Social Supply Chain", a policy that will facilitate the direct involvement of social businesses in the supply chain and foster the inclusion, also as subcontractors, and the new open innovation platform, "Snam Up". During the course of the day, discussions were held on the territories' social development policies, on the role played by companies as a driver of sustainable growth and on the future of energy, as well as on themed tables dedicated to matters of interest to the business,

ranging from innovations in the supply chain to the digital transformation, network and site safety to open innovation and energy efficiency to the new lean working methods adopted in the company. A strategic agreement has also been stipulated with SEAT for natural gas and renewable gas sustainable mobility in Europe.

Engagement of people

Through internal communication, Snam promotes the involvement of people with regard to events and activities which affect the company, with the aim of stimulating participation in the processes of change, especially from a cultural point of view.

The 2018 internal communication plan focussed on the enriching of contents and the increase in the frequency of update of all channels currently in place, as well as on the introduction of new initiatives, activities and information formats and the involvement of people, also thanks to the collaboration with the Snam Foundation and Snam Institute. The collaboration with the Snam Foundation has made it possible to launch two initiatives in support of the company's social commitment and foster the strengthening of team-building and relations between people: in addition to the Snam Volunteer Day, which was held throughout Italy, this year eleven sites of the company also organised the Christmas with the Family initiative, involving employees, their children and local charities. As regards the information format, the dissemination of streaming methods and events webinars has enabled the Snam Institute to finalise a plan of training initiatives accessible via the company intranet. This will make it possible to expand participation by the company population in courses organised with a view to spreading new working philosophies and the digital culture (such as lean speech and digital journeys).

Tools	Description
"Easy" the Intranet portal	A place for information and awareness, addressed to all the Snam employees, but also a place to share knowledge, exchange working documents and share views through the "let's collaborate" section, designed to facilitate teamwork.
Main printed tools	The "Energies" magazine represents Snam's corporate identity and is the voice that tells of the main company events. The "Energy Specials" - attached to the editorial, with a focus on specific topics. The "Observations on Gas Demand" newsletter with news, analysis and comments on gas demand, also available on mobile devices to all employees.
Management meetings	Meeting of executives and managers to deepen the corporate strategic plan, also shown via streaming. On-line webinar presenting the Strategic Plan, during which the CEO explained the pillars of the new plan, answering live the questions asked by employees of the whole organisation. During the year, around twenty roadshow stops were also held, organised by the HR and Digital Innovation Departments, to tell the local populations all about the activities included in the Strategic Plan. Event at the end of the year shown by video conference in the territorial offices, to exchange seasonal greetings.

Market reputation

Though in regulated sectors Snam has a natural monopoly, when dealing with its customers it adopts an approach based on a competitive market, in which it is essential to understand how the customer perceives value.

In November 2018, a new online survey was conducted, involving all Shippers and Traders with whom Snam collaborated in the recently concluded Thermal Year 2017-2018.

The analysis was extended to include transmission, storage and regasification. The survey covered customer satisfaction over the quality of services offered, customer engagement activities carried out by the Company and the additional functions and services introduced in 2018, also in view of the needs emerging from the clients themselves during previous meetings and regulatory evolutions.

The participation rate was 55% and about 93% of the results showed great satisfaction with the Customer Engagement activities which were developed by Snam to improve the services offered and consolidate a proactive collaboration with its contacts. All observations received provide a starting point from which to identify specific action to increase the efficiency of Snam's work yet further. In 2018, four workshops were held aimed at discussing the function of the balancing and market. In particular, the meetings provided an opportunity to discuss innovations and the progress of balancing and transmission, storage and regasification activities, as well as providing feedback on the process of updating IT systems.

Commercial stakeholders were also met during the Partners' Day, during which, for the matters of interest, a debate was held on the digital transformation in the gas sector, in particular with reference to the blockchain and new technologies.

Relations with the Supply Chain

Snam carries out intense engagement activities with its suppliers to encourage growth and improvement of the supply chain and to create a common vision, sharing values, ideas, know-how, best practices and information.

In the context of the 2018 Partners' Day, Snam met its suppliers during a technical session divided up into ten areas connected with the business activities that strengthened the dialogue, exchange of views and experiences.

Continuous communication with suppliers takes place through the Supplier Portal, the web platform through which existing and potential suppliers come into contact with Snam. On-line since 2013, the portal contains documents, insights, best practices, and updates on processes and procedures that govern the procurement status and activities. Registered suppliers also have a special reserved area, containing information regarding them directly (commodity sectors for which they are qualified, the contracts running, and their performance in terms of

workplace safety, notifications for the invoicing of services provided). The Supplier Portal is a tool that is undergoing continuous evolution and constant growth: the new functions introduced year after year improve its efficiency and stimulate the frequency of use in interactions with Snam. Late 2018, more than 2,000 suppliers were registered with the portal (+5% on 2017), with a number of one-time users that accessed at least once during the year, of 1,410 (+38%). The more than 470 thousand pages read during the year and the contents inserted both by Snam and suppliers (1,033, +83% on 2017) show that the website is lively and frequented.

RELATIONS WITH LOCAL COMMUNITIES

Snam is present, through its infrastructure, in almost all the Country's regions, in areas and communities that vary in terms of culture, traditions and economic, social and environmental conditions.

In creating new infrastructure and in managing existing infrastructure, Snam takes a strict, transparent, collaborative and constructive approach to ensure the environmental compatibility of the sites and to facilitate their acceptance on the part of stakeholders.

The assessments of the environmental effects involve all the phases of the work life cycle, site selection, planning, construction, operation and decommissioning. These assessments are made within the purview of the Environmental Impact Assessment (EIA) procedure, at the end of which the central and local administrations issue the permits required under current law.

Snam also evaluates, in relation to the performance of the most important works (compression systems or large natural gas pipelines), the direct and indirect economic and social impact on the territory and on the local communities with "Social Impact Assessment" tools and methods. In particular, in 2018, in collaboration with the Department of Economy and Management of the University of Brescia, the method used was revised and a regional input-output model adopted. This model makes it possible to assess the impact of a project, calculating the value added generated by the investment starting from the total value of production. Over time Snam has built a network of relationships with regional branches of Confindustria and other local associations to discuss issues of energy, economic and environmental policy affecting the territory. At a local level, the Company cooperates with authorities and participates to the works of numerous associations and committees, offering its commitment, skills and know how to participate to the social innovation and sustainable development processes.

To that end, the Company continues to collaborate with local and national authorities to best lay out its plans for carrying out the work to both the authorities and the affected communities. During the course of the year and in the transmission sector alone, 127 meetings were held with local

government authorities and regional associations to present projects involving the construction of works. Together with the latter, 3 agreements concerning easements were stipulated.

In 2018, local communities were assigned donations and sponsorships for environmental compensations carried out in accordance with the law for a total of around 3 million euro.

Performance of the main initiatives in the territory

Young Energy from Snam, to bring young people closer to work

Snam's commitment continues with the schools (through Young Energy), giving rise to the School-Work Alternation programme for the school year 2018/19. From last year's project, in 2018 we hired 13 young men and women. This year, continuing on with the 2017/18 Young Energy, it will be carried out in 6 regions and 9 schools (7 technical institutes/2 secondary schools) and will involve around 800 students.

"Fare scuola" project

"Fare scuola" aims to contribute towards a virtuous collaboration between the companies and school system of Italy, in the field of training and beyond. The initiative is based on the intention of establishing a permanent round table of dialogue between institutions, companies and representatives of the school, through the creation of a permanent laboratory of dialogue, with the aim of delivering intervention programmes in schools. From training dedicated to school heads and teachers, through to social initiatives in infrastructure, which range from the requalification of buildings, including in energy terms, to the reorganisation of spaces as necessary. In 2018, the project was launched in a pilot phase in 30 institutes throughout Italy, intended for 30 school heads, 30 reference teachers for training and 10 class councils (approximately 70 people). In 2020, it should be extended to 100 institutes.

The Snam Foundation is the company's volunteer work.

In 2018, the Volunteer Day was organised, during which Snam employees carried out a day's work, volunteering in charities chosen by the Snam Foundation. The day involved three hundred Snam employees (more than 10% of the company population), choosing from the alternatives proposed by the Foundation and distributing over 23 non-profit organisations, 49 different activities in 28 places throughout Italy.

Snam Foundation, the TESORI notice

The initiative "Tesori - Terre Solidali in Reti Inclusive" was launched in 2017, in collaboration with Confagricoltura, making available to local communities some of the lands adjacent to the Snam plants, with a view to optimising the company assets, local experience and skills and reinforcing relations with the territory for the promotion, development and creation of social agriculture projects.

In 2018, two notices were published for social workers, mainly in the agricultural sector, focused on awarding projects capable of connecting aspects of inclusion, social impact on local communities, and sustainability, with innovation and experimentation. At present, also thanks to the support of Snam people in the territory, detailed planning is underway of selected interventions on the areas of Camerino, Ronco all'Adige and Messina. The ten-year free use of the land, together with economic support and the financing of the participation in the on-line masters course in social agriculture, organised by Tor Vergata University, constitute the reward for the winning projects.



The value of brand identity

Snam re-launched its brand identity, renewing the logo and values that will accompany it in its future challenges, from the development of infrastructures to guarantee stable, secure energy supplies, through to the development of gas as a renewable source. The logo, which has been renewed and is in line with the purpose “Energy to inspire the world”, remains intrinsically linked to Snam’s tradition, stressing the characteristics of the sustainability of natural gas with the inclusion of the colour green.

At the same time as the brand restyling, the new function and look of www.snam.it has also been unveiled. The website, which has evolved in a “One Company” approach, integrates the contents of the web pages of the operating companies and offers a space for information, interaction with clients and dialogue with the company’s multiple stakeholders. Snam.it does not take the form of a simple institutional website, but rather a platform filled with contents, able to offer a concrete response to the company needs. Within the website, specific tools have been developed for a better interaction with stakeholders, such as, for example, the redesigning of the areas dedicated to shippers of transmission, storage and regasification and the preparation of specific contents, such as the section dedicated to gas advocacy. During the year, the Global Solutions business unit website was developed, as well as the web areas dedicated to Snam4Mobility, Snam for Abruzzo and Snam for Minerbio. The quality of the work carried out on the web by Snam has been acknowledged a third place in the Italian and European Webranking classifications by Comprend. With 91.3 points out of 100, for the fifth year running, Snam has reached the podium of the best European companies for the care and transparency of financial and non-financial information presented on its website and the main social platforms.

In 2018, a significant increase was seen in Snam’s exposure on the main Italian and international media, with a marked increase in articles dedicated in particular to matters of sustainable mobility, decarbonisation, the social commitment and technological innovation. Press office activities also sought to present the company’s positions and its openness to dialogue in the territories. In a parallel fashion, continuous growth has been recorded in the production of both text (news) and video contents on the proprietary platforms, from the website to social media. On the digital channels, Snam has created storytelling aimed at showcasing the company, its values, its people and new businesses; this activity has made it possible to significantly increase the Company’s follower base. Through a description of the aspects of excellence of its activities not strictly linked to the business and thanks to the use of an immediate language, Snam’s social channels engage the community considerably and are a tool for the exchange of notes with its followers. Finally, they are a tool involving employees on all levels, which have become real “brand ambassadors” of the company’s values and vision. As evidence of such, Snam has been recognised by Lundquist as the best Italian company for the use of Facebook and mentioned as best practice by LinkedIn for the use of the professional platform.



Innovation for business development

The Group's strategic evolution in an increasingly complex and challenging context will require it to rely more heavily on developing innovation and on the good use of technological assets to ensure that it makes the most of what has already been achieved, as well as developing innovative solutions, as a support for and source of business development.

As part of the Strategic Plan through to 2022, the Snamtec (Tomorrow's Energy Company) project has been launched, which aims to speed up the innovative capacity of Snam and its assets to make the most of the opportunities offered by

the evolution of the energy system. The project is focussed on four areas:

- greater operating effectiveness;
- reduction of methane emissions;
- investments in the energy transition;
- growing attention to innovation and the strengthening of distinctive skills.

Below is a report on the research and development activities launched during previous years, which have continued or concluded during the year and the new projects with potential impact on various areas of the company's operations.

Gas metering	<p>Alternative tools – During the course of 2018 the gradual introduction to the transmission network of instruments to measure the quality of gas alternative to the gas chromatograph, in order to measure the higher calorific value, relative density and carbon dioxide content of natural gas, was continued. In particular, as part of this initiative, a project for the technological adaptation of the fuel gas measurement at the storage plants was started, which involves the installation of quality analysers and the automation and remote reading of the main measurement and reserve measurement. In 2018, activities continued on the adjustment of the measures used for the quality parameters of the gas installed on the network, with the aim of guaranteeing the monitoring and remote management of the devices.</p> <p>Forecast demand – With the start of the thermal year (01 October 2018), new models have begun applying for forecasting the gas demand, based on the use of machine learning methods that, by improving the neural network algorithms used previously, allow for the suitable management of the large quantity of information available. The objective is to improve the quality of the forecast, subject to an incentive scheme by the ARERA.</p> <p>Estimation of natural gas emissions – Collaboration continued within the European research group GERG (European Gas Research Group, www.gerg.eu), involving other European natural gas transporters and distributors, with particular reference to the project for the evaluation of two methods for estimating the natural gas emissions expected at an international level and to the project for the study of potential impacts, along the entire gas supply chain, of the trace chemical components in the biomethane in order to create the conditions for the safe development of biomethane as a source of gas in the transport network. In 2018, a study was launched dedicated to the analysis of potential impacts, on the whole of the gas chain, of the chemical components present in traces in biomethane, with the aim of verifying and effectively coping with any operative problems for all operators involved.</p>
Governance and monitoring of the network and plants	<p>Remote control – In 2018, the study of the Smart Tel project continued, with the aim of analysing the requirements of the acquisition processes and the management of data relating to the control and operation of the network, of increasing its effectiveness levels and identifying the best supporting technologies of the whole remote-controlled process.</p> <p>Safety – In gas storage, following a trial conducted on site, in 2018, installation was completed of phonometric systems to record any accidental leaks at plants and to enable quick and effective blocking measures.</p> <p>During the year, initiatives were taken for fire protection of the control rooms, panels rooms and technical rooms of the plants, so as to install suitable fire detection and extinguishing systems. The project will be completed in 2019.</p> <p>The project has also been launched to replace the plant safety management systems and new SIL (Safety Integrity Level) certified electronic systems that will involve the installation of the new systems at the compression plants of Brugherio and Settala in 2019.</p> <p>Monitoring of the compression units – A system has been developed for the acquisition and display of the main operating and monitoring data of the compression units. This interface will enable various operators to better manage activities, so as to improve the reliability of plants and reduce the consumption of fuel gas and gas emissions into the atmosphere.</p> <p>Electrocompressors – In 2018, a preliminary feasibility study was started for the introduction of electrocompressors into the storage sites, with the aim of improving plant management, guaranteeing greater flexibility and reducing greenhouse gas emissions.</p> <p>Cogeneration – During the year, works were started for the installation of a trigeneration plant in the Gallese plant. The innovative system will allow for the production of heat, electricity and cooling for internal use.</p>

Physical integrity of infrastructures	<p>Collaboration with EPRG – Collaboration continued with the EPRG (European Pipeline Research Group, www.eprg.net). The EPRG is an association which researches pipeline-related topics and counts Europe's biggest gas transportation and pipeline manufacturing companies among its members, and of which Snam is a member. This group manages projects (broken down into three major areas: Design, Material and Corrosion) with the aim of constantly improving the knowledge and management of the integrity of gas pipelines throughout their life cycle (pipe manufacturing, pipeline construction and operation).</p> <p>Electrical protection – In 2018, the project for innovating the electrical protection system continued, aimed at experimenting in the field of equipment and operational solutions based on the results of the study conducted in 2016.</p> <p>Geochemical and micro seismic monitoring – As regards storage, with regard to the new projects for the operation of deposits in conditions of overpressure and the strengthening of monitoring systems, work continues on the construction and installation of geochemical and micro seismic monitoring prototypes.</p> <p>In 2018, Stogit focused its attention on activities aimed at monitoring microseismicity, by upgrading its networks to standards of technological excellence. Among the operations aimed at guaranteeing high-quality performance, the development of a new automatic data management and processing system, active since October 2017, is worthy of mention; in 2018, this will be rolled out to six concessions. The automatic analysis system has also been integrated with the national seismic network, reducing uncertainty in events location. In addition to these, in the concessions of Settala and Ripalta, two surface micro seismic networks have been developed, to integrate the works for the installation of micro seismic detection equipment completed in 2011.</p>
Maintenance and checking of networks	<p>Revision of maintenance processes – The execution phase of the “Gas Transportation Network Asset Maintenance System” was continued, which is aimed specifically at completely overhauling work processes and regulations related to the transportation network, compression stations, metering and remote control plants. This through identifying of the needs for the evolution of the professional model of the resources and of the technological and ICT tools used to carry out the maintenance activities. In particular, in 2017 the Roll Out of the Asset Implementation and Management systems for the network was completed and in 2018, the Pilot of the Asset Implementation and Management Systems of the compression plants continued.</p> <p>Experimentation with leak detection – The trial of a system aimed at identifying and locating gas leaks along the transport network, based on the analysis of the pressure waves and the detection of possible perturbations and their propagation time, continued.</p> <p>Experimentation on air flyover checks – For the purpose of evaluating the existence of technologies which are useful for the improvement of air flyover controls, trial operations were begun on two themes: assessment of the current satellite detection technologies available and participation in the trial operations carried out by ENAV and ENAC on the development of the flight infrastructure in the BVLOS mode of drones.</p>
New businesses	<p>Innovative use of existing infrastructures – In 2018, a working party was launched dedicated to the sharing of information and experience on the matter of the innovative use of existing infrastructures in connection with their capacity to transport (and potentially store) gases other than natural gas, with the ultimate aim of assessing the impacts in the various business areas and identifying practical solutions to the problems encountered.</p> <p>The Hydrogen working party was structured into various task forces, including the metering task force, for which, amongst others, the following specific areas of investigation/competence have been identified:</p> <ul style="list-style-type: none"> ■ identification of the impacts of hydrogen on the equipment used to measure volume (meters) and quality of gas (gas chromatographs, quality analysers); ■ verification of the conformity of the natural gas and hydrogen mixture with the technical specifications of the quality of gas, where the source of natural gas considered and the percentage of hydrogen mixed vary.

Mitigation of environmental and health and safety effects

Accident prevention and environmental protection are areas of management in which the creation of value is linked to the ability to mitigate the most significant impacts caused by the Company's business activities. Safeguarding the physical integrity of staff and natural capital is an integral part of the definition of Snam's corporate policies and investment decisions.

On these issues, Snam adopts specific certified management systems, with the aim of overseeing the corporate processes and activities which have the biggest impacts, linked to the fight against climate change, the reduction of energy consumption and the protection of nature and biodiversity.

With regard to the environmental protection, Snam spent approximately 105.7 million euro (92.1 million euro for investments and 13.6 million euro for operating costs).

On the health and safety of workers, Snam spent approximately 31.6 million euro.

MANAGEMENT SYSTEMS

Snam also continued its commitment to expanding and maintaining management systems that cover certain specific issues such as health and safety at work, the environment and the quality of services provided. To this end, in 2018, the new HSEQ Integrated Management System Manual was published, which, in line with the previous versions, defines the function and application of the HSEQ Management System and applies to all Group companies. In addition to this, as part of the "Lean Simplify" project, all the company HSEQ procedures have been updated and revised.

Snam took all steps necessary to maintain its existing certifications and extend the scope to new companies, including the audits performed in-house and by external personnel. 27 auditors, also qualified for external audits also, work within Snam. 237 audits were conducted in 2018 (95 of which by an external team). In order to verify the effectiveness of the management systems adopted, 54 health, safety and environment audits were also carried out on contractors working on sites. Please note that during the year, the certifications ISO 9001, ISO 14001 and OHSAS 18001 were extended to cover the companies Snam4Mobility and Cubogas.

Management systems

Company	Certification scope	Type of certification and accreditation	Year of first certification
Snam	Business continuity management for the design, development, centralised management of process systems and remote control for the dispatch of natural gas transmission	ISO 22301	2018
	Processes overseen by the Snam units for both the transmission of natural gas via methane pipelines, auxiliary and central compression plants (Administration, Business Development, Service Marketing, Asset Development, Asset Management, HSEQ, Planning and control, Supply Chain) and storage in geological units of natural gas (Service marketing)	ISO 9001	2016
	Company	ISO 14001	2015
	Information security management for the design, development, centralised management of process systems and remote control for the dispatch of natural gas transmission	ISO 27001	2014
	Company	BS OHSAS 18001	2012
Snam Rete Gas	Company	ISO 9001	2016
	Natural gas transmission dispatching activities	ISO 22301	2015
	Company	ISO 14001	2013
	Company	BS OHSAS 18001	2010
	Testing laboratory (LAB 764 Piped gaseous flows)	ISO 17025	2007
	Calibration laboratory (LAT 155 Natural gas mixtures)	ISO 17025	2002
GNL Italia	Company	BS OHSAS 18001	2012
		ISO 14001	2000
Stogit	Company	BS OHSAS 18001	2012
	Design and delivery of natural gas metering and accounting	ISO 9001	2008
	Company	ISO 14001	2002
ITG	Company	ISO 9001	2018
		ISO 14001	2010
		BS OHSAS 18001	2009
Snam 4 Mobility	Company	BS OHSAS 18001	2018
		ISO 9001	2018
		ISO 14001	2018
TEP	Company	UNI 11352:2014	2013
		ISO 9001:2015	2010
Cubogas	Company	BS OHSAS 18001	2018
		ISO 9001	2018
		ISO 14001	2018
IES Biogas	Company	ISO 9001:2015	2018

Prevention of accidents and protection of health

The Snam Group has a long-term commitment to developing and promoting the protection of health and safety at its workplaces, as part of an ongoing process to improve its HSE performance in accordance with its Health, Safety, Environment and Quality Policy.

When managing health and safety issues, it is essential to implement standardised management systems developed and maintained in accordance with the OHSAS 18001 standard. Specifically, Snam's Worker Health and Safety Management System aims to carry out strategic guidance, coordination and monitoring for the Group's operating companies.

Accident prevention, the main Snam health and safety objective, is carried out through the adoption of targeted actions aimed at eliminating or reducing risk factors inherent in work.

In-depth analysis of the causes of accidents aims to identify any measures that can be taken to eliminate, mitigate or correct risk factors, implementing organisational, technical and managerial solutions on equipment, plants and workplaces, as well as evaluating operational and behavioural procedures of employees and suppliers.

With a view to assuring the continuous improvement of performance, during the first few months of 2018, Snam launched the new "Snam4Safety" project aimed at further strengthening the culture of awareness of all employees and contractors regarding matters of health and safety.

The initial results of the analysis have revealed, on the one hand confirmation that Snam's accident rates are amongst the world's best, and on the other a cultural maturity gap, essentially due to a more scrupulous observation of rules and procedures than real awareness. Over the next few months, initiatives will therefore be taken to remedy this gap.

In order to raise awareness among employees on the safety issue, in 2011, the initiative called the "Zero Accident Award" was established, which rewards employees who go 365 consecutive days without an accident in the workplace. Staff taking part in the initiative was divided up into homogeneous teams identified by the employer line/safety officer. In 2018, 13 homogeneous teams were rewarded, for a total of 1,550 employees.

An awareness-raising initiative, the "Contractor Safety Trophy" is dedicated to contractors with the aim of increasing suppliers' attention to such matters. In particular, the performance of the companies is assessed through the collection and analysis of specific indicators (such as accident rates and negative feedback on the relevant topics). In 2018, the trophy, for the 2017 results, was awarded for the second year running to Max Streicher, a company specialised in the building of energy infrastructure and construction of gas pipelines.

Health and safety training

(hours)	2016	2017	2018
Hours provided	19,288	8,193	25,219
Equity investments	3,484	1,508	4,515

The protection of workers' health is based on ongoing monitoring of risk elements analysed in corporate processes and the implementation of adequate prevention and protection measures. Work environment inspections are periodically carried out by the Competent Physician and the Prevention and Protection Department in order to evaluate adequate and appropriate working and environmental conditions and to identify possible measures for prevention or improvement.

Snam's workers are not exposed to a high risk for contracting occupational diseases (no cases have been recorded in the last three years). Personnel exposed to specific risk factors undergo a periodic medical health surveillance by the Company Physicians. These employees come under specific health protocols defined according to the risk, in addition to any supplementary specialised visits. Personnel whose work requires them to travel to non-European countries receive specific preventive care.

The various initiatives run by Snam to promote workers' health include: a flu vaccine campaign, an early-diagnosis plan to prevent cancer, agreements with specialist institutions, a ban on smoking in the workplace (which also includes e-cigarettes), and a ban on drinking alcohol in company canteens.

Health monitoring

(no.)	2016	2017	2018
Medical visits	1,561	1,914	1,350
Periodical medical visits	1,337	1,688	1,061
Environmental surveys	172	279	247



Climate change and energy efficiency

Snam contributes towards the fight against climate change starting from its energy choices: in 2018, 96.4% of the Company's energy needs were covered by the use of natural gas.

The main greenhouse gases (GHG) emitted in the atmosphere by the Snam's activities are methane (CH₄), the main component of natural gas, and carbon dioxide (CO₂). Methane emissions arise from the release of natural gas into the atmosphere and are generated by the normal plant operation, by operations to connect new gas pipelines and the maintenance thereof, or by accidental events occurring on infrastructure, whereas the CO₂ produced is directly correlated with fuel consumption. In 2018, the contribution deriving from the use of hydrofluorocarbons (HFCs) in cooling plants was also assessed.

Snam intends to develop projects to strengthen its operational excellence and thus contribute to the containment of climate-altering emissions. The company has in fact set targets to reduce its emissions of natural gas and methane from the transmission, storage and regasification of LNG. The targets set involve the reduction, as compared with 2016 values, respectively of 15% by 2022 and 25% by 2025. In order to achieve these objectives, an investment plan has been implemented that will allow the Company to maintain and develop various projects, including the 33% annual recovery programme of natural gas through to at least 2022, with respect to all potential emissions deriving from maintenance activities.

To pursue these objectives the investment plan includes:

- gas recompression interventions in the transport network and compression plants;
- replacement of pneumatic actuators powered by natural gas in transport and storage infrastructures;
- operations to improve the energy efficiency of the gas turbine and reduction cabins;
- installation of more efficient heat generators;
- installation of LED lamps for network lighting systems.

In the gas compression stations, works have begun on installing the trigeneration plant in Gallese; this system will allow for the self-production of electricity of plants with heat recovery to support the plant's heating and cooling utilities. The systems are listed as high-efficiency cogeneration plants.

A further contribution is made to reducing the carbon footprint by the use of electricity produced from renewable sources and photovoltaic plants owned by the Company, which in 2018 accounted for 37% of total electricity consumed. Snam4Mobility, again with a view to limiting emissions, only planned on using electricity produced from renewable sources for the function of the CNG plants envisaged in the development plan.

Various initiatives taken by the company in 2018, such as the reduction of natural gas emissions, the production of electricity by photovoltaic plants, the purchase of green electricity, the installation of LED lamps in lieu of other lighting bodies, smart working, have made it possible, globally, to avoid the release into the atmosphere of a total of 154,800 tonnes of CO₂.

Renewable source plants

Type	2016			2017			2018		
	(no.)	Total capacity (kW)	Energy produced (kWh)	(no.)	Total capacity (kW)	Energy produced (kWh)	(no.)	Total capacity (kW)	Energy produced (kWh)
Wind generators	1	1.7		1	1.7		1	1.7	
Photovoltaic plants	1,153	938.2	844,608	1,366	984.4	1,044,309	1,534 (*)	1,052.7	1,128,383
Total	1,154	940		1,367	986		1,535 (*)	1,054	

(*) Including 1,497 back-up plants.

NFS Environmental monitoring and restoration in the development of the gas pipeline network

Snam considers the protection of the natural value of the territories affected by its activities to be particularly important. This is why when developing its works, it implements the most appropriate design choices to minimise impacts on biodiversity. Once the infrastructures have been completed, the Company restores the environment and monitors as per the collaboration with the entities appointed to this end.

The objective of the vegetation restoration, in particular reforestation, is not merely to reconstitute forest areas but to reconstitute the landscape in general and to revive the biological functionality of vegetated areas, understood especially in their role of habitats for the fauna with specific biodiversity characteristics. Restoration and reforestation is followed by the implementation of "cultivation treatments", i.e. the care and maintenance, for a period of at least five years, of the plants which have been planted.

Environmental monitoring projects regard the paths of a number of pipelines that affect, albeit only marginally, natural areas of high value in terms of wildlife and ecology. These projects are intended to verify the renaturalisation process of the area affected by work, based on a comparison of the conditions after the restoration ("post operam") and the original conditions ("ante operam"). Monitoring is normally performed for the most significant habitats identified in the design phase.

Environmental restoration and monitoring

(network km)	2016	2017	2018
Restoration	227	203	227
New reforestation (*)	4	21	21
Plant care	98	59	74
Environmental monitoring	565	388	445

(*) Surface area covered by new reforestation: 410,500 m².