SOGIN

SUSTAINABILITY REPORT

2020

Sogin Group - Sustainability Report 2020
Approved by Sogin's BoD on 8 July 2021

SO.G.I.N. S.p.A. – Company limited by shares for the management of nuclear power plants
Registered Office: via Marsala no. 51 C, 00185 Rome
Rome Company Registry – tax and VAT number 05779721009
R.E.A. 922437 – Court of Rome no. 130223/99
Single shareholder Company – Fully paid-up share capital EUR 15,100,000

TABLE OF CONTENTS

LETTER TO STAKEHOLDERS

The Sogin Group has long been working on sustainable growth and development. Each year, we publish the Sustainability Report to present the Group's significant achievements in this regard.

The year 2020 was a problematic year affected by an unprecedented pandemic crisis that changed all our lives. The Group had to promptly "rethink" its work and swiftly implement measures to ensure operational continuity and protect its workers' health. We adopted an extraordinary smart-working plan to allow most non-operational staff and part of the operational one to work from home. We also doubled the training hours provided through e-learning courses.

Although we could only "virtually" open the doors of our plants and facility during the pandemic, we kept caring for the areas in which we operate and providing our competencies and experience to those who were most affected by the virus. For example, we worked in partnership with Piacenza Ausl (Local Healthcare Unit) to sterilise the premises of Guglielmo da Saliceto hospital: four teams - each consisting of two health physics and chemistry experts - have been working for a total of 700 hours. We also provided healthcare workers, Red Cross, and Civil Protection volunteers with about 87,000 PPE for free.

Despite the healthcare crisis, we achieved relevant core business outcomes. These include, for example, the shipment of radioactive resins and sludges of Caorso nuclear power plant to Slovakia for conditioning; the transfer of radioactive metallic waste from Garigliano nuclear power plant to Sweden to be smelted and reused in the production circuit, in line with the principles of the circular economy. We completed demolition works on the boiler screens in Latina and reached a crucial decommissioning stage that involves dismantling the reactor building.

The year 2020 also represented a fundamental landmark for sustainability. In this regard, we launched a new program to strengthen the "governance" and implement a three-year Sustainability Plan. The Plan will be implemented at the end of 2021 and integrated into the 2020-2025 Industrial Plan strategy, which, in turn, aims to improve the corporate performance of nuclear decommissioning, in line with circular economy principles and by enhancing our core competencies.

In the light of the growing importance of environmental and energy transition within the policies of the EU, the Sustainability Plan will allow us to play a fundamental role in achieving the sustainable development goals (SDGs) envisaged by the UN 2030 Agenda.

The year 2020 ended with a great innovation for our Country and Sogin. On 30 December 2020, the Ministry of Economic Development and the Ministry of Environment (now Ministry of Ecological Transition) issued the authorisation to publish the National Charter of Potentially Suitable Areas and the Preliminary Project of the National Repository and Technology Park. Both documents were published on 5 January 2021.

This authorisation leads to the public consultation stage – as provided under Legislative Decree no. 31 of 2020 – aimed at reaching a joint decision on the siting of the facility that will house the radioactive waste produced in Italy and finally allow closing the nuclear cycle in our Country.

The achievements reached by our Group this year make us proud, but they shall not be considered our target. We will keep walking this path with resolve, conviction, and confidence in the future.

Chairman
LUIGI PERRI

Chief Executive Officer
EMANUELE FONTANI

METHODOLOGICAL NOTE

The Sustainability Report is an official source of information for the Sogin Group. The document is addressed to all the company's Stakeholders and sheds light on the group's economic, industrial, and environmental activities.
This document refers to the financial year 2020 (01/01/2020 - 31/12/2020) and includes relevant events that occurred in the first half of 2021. It was approved by the Board of Directors of Sogin on 8 July 2021.

The 2020 reporting scope of Sogin Group Sustainability Report includes:

Sogin (Parent Company) is in charge of the safe maintenance and dismantling of Italian nuclear power plants and radioactive waste management.
Nucleco (Sogin holds 60% of its share capital), is in charge of the treatment and interim storage of radioactive waste and sources resulting from medical and hospital activities and scientific and technological research activities.

To ensure comparability of data and information and provide a clear picture of the Group's activities, the data and figures contained in the Report are compared, where possible, to those collected in the two previous financial years. The statistics provided in the Report were accurately calculated according to the financial accounts and other information systems used by the Sogin Group. The use of estimates for the definition of indicators is limited, and the modality applied for their quantification is indicated.
As for the figures related to the Group single companies, reference is made to "Sogin" and "Nucleco." Vice-versa, information concerning both companies and consolidated data are collected under the term "Sogin Group".
No limitations and changes have been adopted that can relevantly affect the comparability among periods.

ACCOUNTING PRINCIPLES AND STANDARDS

The report was prepared to provide reliable, complete, balanced, accurate, clear, and comparable information, as required by the adopted reporting standards: Sustainability Reporting Standards offered by the Global Reporting Initiative (GRI), under the option "in accordance-core".
Since the 2019 Sustainability Report publication, the latest 2018 version was adopted for the standards GRI 303 (Water and Effluents) and GRI 403 (Occupational Health and Safety).
GRI 207 (Tax) of 2019 was introduced in the 2020 Sustainability Report.
Moreover, the document also complies with the principles of inclusiveness, impact, materiality, and compliance provided for in the AA1000 AccountAbility standard.
Any scope limitations will be marked in the document.
In 2020, Sogin drafted and distributed a survey – now available in the Sustainability section on sogin.it - to its internal and external Stakeholders aimed to collect their opinions on the Sustainability Report.
The Sustainability Report was drafted according to an internal procedure, issued in November 2020, which sets out drafting arrangements, times and modes, implementation stages, roles, and duties of engaged stakeholders to make sure that they receive an accurate and comprehensive reporting.

01.

SUSTAINABLE SOGIN

STRATEGY

In 2020, Sogin presented its new Industrial Plan for the 2020-2025 period. The plan defines strategic objectives to enhance the know-how and advance in the Italian decommissioning program by integrating technological innovation and social, environmental, and economic sustainability throughout its industrial and production processes; the plan fosters a circular economy and aims to enhance the distinctive features of the Group.

1.
Improving core business performance through a new organisational model that optimises the coordination among business units and stresses roles and responsibilities

2.
Generating value for the country to protect the environment and health through industrial processes based on the principles of sustainability and circular economy

3.
Maintaining the competencies and skills to create and operate the National Repository and Technology Park

4.
Decommissioning management through strong technological innovation and enhancement of high-technical skills

According to the plan, Sogin will provide EUR 900 million to advance decommissioning operations, with a peak period of activity in 2022-2023 connected to the dismantlement of reactors in Trino and Garigliano and the creation of the CEMEX complex of Saluggia. This plan will allow achieving the objectives defined under the new Long-term Plan (PVI) and result in a growth of the average value of the assets. Moreover, the Company identified a new organisation model to optimise coordination among the Business Units and enhance offices and duties. The Radwaste Management School (RaMS) promotion will widen the staff competencies for future developments in decommissioning and other fields. Given its backend role and long-term experience in radioactive and conventional remediations, Sogin can play a significant role in the current ecological transition by spending its know-how in several sectors where end-of-life management is required.

Sogin's Group looks at sustainability as an ethical and cultural corporate approach that constitutes the basis for a sustainable business. Sogin has long been developing to foster sustainable growth by focusing on safety and environmental protection and promoting relationships of trust with its Stakeholders and the communities in which it operates. Sustainability became increasingly relevant in the Group's business core. The treatment and decontamination techniques adopted during decommissioning enabled Sogin to almost 89% of dismantled materials, thus proving the possibility to implement good circular economy practices in the decommissioning sector. Sogin also considers social and environmental criteria in the procurement process when detecting goods and services to reduce the environmental impact and increase social benefits throughout the whole lifecycle.

The main developments envisaged in the Industrial Plan also include management and operational requirements to close the Italian nuclear cycle. These operations involve developing know-how and competencies for the siting, construction, and management of the National Repository and Technology Park. This project will allow the final storage of the Italian radioactive waste resulting from the exercise and decommissioning of nuclear power plants and the health, industrial and research sectors.

Sogin has long been committed to implementing innovative solutions and technologies to optimise management and industrial processes, including fostering exchanges with other national and international realities. This aspect also appears in the new Industrial Plan that stresses innovation as a strategic driver to achieve the corporate mission. Sogin defined a digital innovation & industry 4.0 program for the 2020-2022 period by adopting an Open approach based on three main pillars: culture, processes, and technologies.

OPEN CULTURE	OPEN PROCESSES	OPEN TECHNOLOGY
Promoting the engagement of internal resources through an open approach that can foster innovation and experimentation by helping people adapt to external and internal changes.	Re-designing the processes with an intelligent and open approach.	Building a technology basis in line with open standards to accelerate and ena-ble innovative lifelong cycles.

This strategy aims to introduce innovative tools in corporate processes that ensure faster decommissioning operations, better radioactive waste management, and the best OSH standards. To support the program's implementation, the Company established an Innovation Committee composed of internal members belonging to different Corporate Units to ensure heterogeneity. The Committee primarily aims at promoting and enhancing the initiatives of the "Innovation Lab", namely all digital innovation & industry 4.0 activities envisaged by the 2020-2022 program, including the launch of the call on innovation "Idee ad Alta Attività" (High-Activity Ideas") in 2021 addressed to the staff of the Sogin Group.
The corporate call is inspired by the Call for Innovation "SARR – Soluzioni Avanzate per i Rifiuti Radioattivi" (Advanced Solutions for Radioactive Waste), implemented by Sogin in 2020 with the help of DigitalMagics. The Call was launched to identify startups and small and medium enterprises to develop innovative solutions and technologies to integrate into the radioactive waste management chain, contribute to process digitisation and sustainable development. The Call - that recorded the participation of fifty-two companies – ended with the Innovation Day on 14 October 2020. With the Zerynth platform, TOI was awarded the prize for best innovative proposal for managing radioactive waste. The platform is a professional software-hardware cloud that enables the integration of old analogic systems and products and new-generation services to manage radioactive waste, thus allowing the implementation of 4.0 digital solutions to existing processes and infrastructures.

SARR allowed Sogin to activate new virtuous circles with potential suppliers and identify new technologies available on the market. More specifically, the awarded start-up was involved in a joint study to draft a technical and economic bid for the implementation of the prototype (waste bridging, industrialisation, siting, and tracking) and the verification of patentability and trademark filing for the AIGOR project – the integrated system based on process optimisation through blockchain with 5 to 10% of the waste resulted from nuclear decommissioning, and ensure the traceability and integrity of Italian radioactive waste, to preserve the memory for future generations (for further information see the chapter "Closing the Italian Nuclear Fuel Cycle").

Over 2020, the innovation process also involved the technological improvement of the IT assets and tools adopted by the Company. More specifically, the introduction of the Qlik Sense technology and the DB non-relational MongoDB allowed several corporate dashboards to go live on mobile devices. Moreover, a new private virtual network was implemented that allows the staff of the Sogin Group to access the IT corporate system safely and with unlimited simultaneous use.

Again in 2020, Sogin confirms its participation in the ARTES 4.0 (Advanced Robotics and enabling digital TEchnologies & Systems 4.0) Competence Centre. This partnership aims to create synergy with other specialised partners to develop innovative projects and prototype technologies on the use of 4.0 industry matters in nuclear decommissioning or essential services for the Italian atomic legacy. In 2020, ARTES 4.0 published a new website representing a portal of the 4.0 Industry field competencies. Among the reported actions, Sogin is mentioned for its expertise in robotics applied to nuclear decommissioning and waste management, such as dismantling the chimney in Garigliano nuclear power plant.

SUSTAINABILITY PLAN

In 2020, thanks to its long-term experience in sustainability accounting procedures, the Sogin Group decided to strengthen its "governance" model. The new governance model was designed to increase sustainability in business operations and meet the strategic and operating needs of the new Industrial Plan by improving its ability to create long-term value across the territories in which it operates.

Sogin's drivers in this strategy are:

DECISION
to use the business to promote sustainability and create sustainable development in the Country

RESPONSIBILITY
as a state-owned company, towards the human, social and environmental fabric

TRUST
daily built with its Stakeholders, by fulfilling the commitment taken

The 2020 strategy involves the following objectives:

- moving its reference scope from ex-post reporting and enhancement to the definition of ex-ante objectives and actions;
- qualifying the strategic guidelines for sustainability by drafting a document guiding the implementation of the Group's commitment – namely, the Sustainability Plan;
- ensuring consistency of the sustainable strategic assets with the objectives of the 2020-2025 Industrial Plan;
- defining internal policies and procedures to promote the integration of sustainability within the core business;
- supporting the assessment and implementation of the actions required to achieve the Plan's objectives through regular monitoring.

The sustainability governance, consisting of two levels of action, involves all the Group staff and aims at approving the first Sustainability Plan of the Sogin Group:

<table>
<tr><td rowspan="4">CONTROL BOOTH
Within the scope of the Communication and Sustainability Function, it regulates the sustainability planning process.</td><td colspan="2">STRATEGIC DIMENSION</td></tr>
<tr><td>SUSTAINABILITY STRATEGIC COMMITTEE
It consists of a delegate from the Sogin Board of Directors, the Chairman of Nucleco, the Communication and Sustainability Function, and all other competent functions appointed to define strategic sustainability commitments.</td><td>ADVISORY BOARD
It comprises external experts on sustainability topics mainly related to the Group's core business appointed to support the Strategic Committee.</td></tr>
<tr><td colspan="2">OPERATIONAL DIMENSION</td></tr>
<tr><td colspan="2">STANDING WORKING GROUP
It is composed of experts on sustainability drivers to define objectives, targets, and KPIs of the Sustainability Plan.</td></tr>
</table>

OBIETTIVI DEL PIANO DI SOSTENIBILITÀ

Sustainability is a fundamental element of Sogin's DNA. Its mission envisages protecting the present and ensuring the future and includes sustainability in the core principles of its daily activities, namely transparency, information, engagement, accountability, and enhancement of know-how.

To include sustainability in our industrial strategy and create more value for the communities and areas in which we operate, and at a country-wide level, in 2020 Sogin launched a procedure to draft a Sustainability Plan in line with the best practices of the main Italian businesses and involving all the Group's staff.
This procedure involves two macro-objectives:

- proving the industry and environment can coexist without being contradictory;
- placing the Group among the businesses committed to contributing to the current energy and ecological transition through their distinctive know-how.

The following infographic shows how to integrate the Group's sustainability drivers and the pillars of the Industrial Plan.

SUSTAINABILITY DRIVERS		PILLARS OF THE INDSUTRIAL PLAN
CIRCULARITY	Design and Implementation of decommissioning activities, industrial remediations, and the National Repository to promote a circular economy and optimise Sogin's use of resources and overall impact.	CORE BUSINESS
SHARED VALUE WITH THE TERRITORY	The corporate mission – protect the present and guarantee the future – designed to create shared value and support the achievement of the UN's 2030 Agenda SDGs.	COUNTRY-WIDE SYSTEM
ENHANCEMENT OF COMPETENCIES	Enhancement and share of the high technical know-how of the Group and skill maintenance to guarantee a memory for future generations.	KNOW-HOW
ACCOUNTABILITY	Being accountable towards internal and external Stakeholders, by providing clear information and communication of Sogin's sustainable actions.	REPUTATION
ENGAGEMENT	Engagement, listening and dialogue with internal and external Stakeholders across all Sogin's processes, to share corporate objectives and promote inclusiveness.	
CORPORATE CULTURE	Innovative cultural elements for corporate change that are required to achieve the SDGs and create an environment that promotes innovation.	

OUR APPROACH TO SUSTAINABILITY	
PRINCIPLES	▪ **Transparency**: in the processes and decommissioning of the nuclear power plants in providing information concerning the dismantling work progress, the management of nuclear fuel and radioactive waste, and the environmental monitoring; ▪ **Information**: through direct and indirect channels to promote the knowledge of Sogin's activities among its Stakeholders, including information concerning the management of possible critical situations; ▪ Engagement. It provides a structured dialogue with the Stakeholders to promote their actual participation and improve the economic, **environmental**, and social performance of the Sogin Group; ▪ **Accountability**: beyond the first three principles, it is the reporting responsibility of the Group towards its Stakeholders in terms of management regularity and efficiency; ▪ **Enhancement** of corporate know-how: (knowledge sharing) to maintain constant corporate development, strengthen corporate skills, and ensure the knowledge transfer among generations through a cross-training system.
PROCESSES	▪ **Decommissioning.** The group of activities, authorised by competent authorities, designed and implemented in the nuclear sites by evaluating their impact from an economic, social, and environmental perspective; ▪ **National Repository** – the national project to protect future generations and final-ly close the nuclear cycle; the localisation and construction of the Repository in-volve the engagement of local areas and local and national institutions; ▪ **Environment** – any activity intended to perform the conventional and radiological monitoring of the areas where the nuclear power plants are located; these activi-ties provide information to competent authorities and local communities; ▪ **Circular Economy** – implementing a strategy to minimise the quantity of waste produced and send a high proportion (approx. 89%) of dismantled materials for recovery; ▪ **Supply chain** – the adoption of green procurement and social responsibility by ac-tively contributing to developing a national decommissioning supply chain; ▪ **Human Resources.** The set of measures intended to protect the employees' health and safety and the staff management policies to develop more substantial know-how and professional skills; ▪ **Innovation.** The study and implementation of innovative technology solutions, of-ten prototypical, to carry out nuclear decommissioning and foster sustainable de-velopment.
STAKEHOLDERS	▪ **The Board of Directors.** It's the body in charge of evaluating and approving the business and industry plans to promote a sustainable business model and lay the foundations to create long-term corporate value. Moreover, the BoD approves the Sustainability Report and signs the Quality, Environment, and Safety Business Poli-cy; ▪ **Communication and Sustainability Function.** It identifies its Stakeholders' expecta-tions and guides the sustainability strategy by adapting it to the specific needs of the areas in which the Company operates; ▪ **Working Group on the Sustainability Report belonging to the Communication and Sustainability Function.** It annually drafts the expenditure documents on econom-ic, social, and environmental performance for the Stakeholders; ▪ **Sustainability Control Booth.** It includes the staff of the Communication and Sus-tainability Function and manages the business planning process for the adoption of the three-year Sustainability Plan of the Sogin Group; ▪ Joint bilateral Committee on the safety of workers. It includes business and trade union representatives involved in the continuous improvement of safety stand-ards; ▪ **Committee for sponsorships.** It promotes sustainable initiatives in the territories where the Company operates; ▪ **Corporate Functions.** They perform risk control and management tasks to define the relevant risks set out in the Sustainability Report and verify the main corpo-rate rules and procedures connected to the internal control and relevant risk management for the Stakeholders; ▪ **Officer in charge of preventing corruption and ensuring transparency** - monitors the actual implementation of the measures to avoid corruption and fulfil trans-parency, information, and disclosure requirements.
NETWORK	▪ **National**: Parliamentary Committees, Ministerial Round Tables, Environmental Associations, Associations representing consumers and businesses; ▪ **local**: Regional Round Tables, Schools, Environmental Associations, Local Businesses; ▪ **International**: Round Tables with international trade organisations, especially those involved in adopting sustainability and circular economy principles to decommissioning and radioactive waste management.

SOGIN FOR SUSTAINABLE DEVELOPMENT

Taking the 2019 Sustainability Report as a reference, Sogin highlights the projects and activities that concur to implementing the 2030 Agenda and endorses a set of future commitments.

The 2030 UN Agenda for Sustainable Development, adopted in September 2015, defines 17 Sustainable Development Goals (SDGs), a new set of global goals to face the complex social challenges of our world.

www.asvis.it

Said objectives are a fundamental benchmark for Sogin in implementing its strategic actions to ensure national safety.
The following Table shows the actions, projects, and activities implemented between 2020 and the first half of 2021, along with future projects impacting 9 out of 17 SDGs.

3 GOOD HEALTH AND WELL-BEING

ESTABLISH GOOD HEALTH AND WELL-BEING FOR ALL AGE GROUPS

- Updating of the Organisation, Management, and Control Model, comprising the new special "Environment, Health and Safety" section
- Actions to promote health and safety in the workplace
- Steps to tackle the Covid-19 emergency
- Quality, Environment, and Safety Policies
- Information and training projects for the Stakeholders on health and safety
- Promotion of diversity and equal opportunities
- Development of the Quality, Environment, and Safety System
- Corporate Welfare

4 QUALITY EDUCATION

ESTABLISH GOOD HEALTH AND WELL-BEING FOR ALL AGE GROUPS

- Training offered to the staff of Sogin Group, with a focus on safety, radioactive waste, and nuclear fuel management
- Knowledge Management between men and women, for knowledge integration, enhancement, and sharing
- Partnership with Universities and Training Centres
- Community training and information projects (schools, associations, universities)
- Promotion of diversity and equal opportunities
- Subsidies for the educational needs of the children of the employees

6 CLEAN WATER AND SANITATION

PROVIDE QUALITY, INCLUSIVE, AND EQUAL EDUCATION TO ALL

- Monitoring actions and treatments to ensure the compliance of the discharges into surface waters with the limits imposed by law
- Radiological and conventional monitoring actions on the groundwater under the nuclear facilities

8 DECENT WORK AND ECONOMIC GROWTH

FOSTER A DURABLE, INCLUSIVE, AND SUSTAINABLE ECONOMIC GROWTH, FULL AND PRODUCTIVE OCCUPATION, AND DECENT WORK FOR ALL

- UNI ISO 45001 Certification (launched in 2020)
- Green procurement
- Promoting a safe and protected work environment for all workers through information campaigns and awareness-raising actions
- SA8000 Standard

11 SUSTAINABLE CITIES AND COMMUNITIES

MAKING CITIES AND COMMUNITIES MORE INCLUSIVE, SAFE, DURABLE AND SUSTAINABLE

- Sampling activity and specific radiological monitoring plan for each site
- Supply of PPE in the areas most impacted by COVID-19
- Actions to support local communities
- National Repository and Technology Park siting for the final storage of radioactive waste
- Design of decommissioning and radioactive waste management activities to reduce the environmental impact in the long-term
- EMAS Registration
- Prompt reporting of risky situations, in terms of environment and health of the population
- Verify compliance with the limitations and/or reference levels of current regulations and the values of the discharging procedure of each site
- Employee Volunteering (Team of Volunteers for COVID-19)

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

RESPONSIBLE CONSUMPTION AND PRODUCTION - GUARANTEEING SUSTAINABLE PRODUCTION AND CONSUMPTION MODELS

- Sogin-ICQRF Agreement to define technical radiological and chemical specs to ensure traceability of food and agricultural products
- Participation in the EWWR (European Week for Waste Reduction)
- Decommissioning and radioactive waste management activities
- Digitisation promoting data traceability and integrity on radioactive waste to create a set of data available to future generations.
- Green procurement
- Environmental Sustainability Actions
- Circular Economy Plan: minimisation of produced waste and maximisation of the materials to be sent for recovery
- Projects under the Horizon 2020 EU Program
- "Plastic-free" Project

14 LIFE BELOW WATER

PRESERVING AND USING OCEANS, SEAS, AND MARINE RESOURCES IN A SUSTAINABLE WAY

- Underwater remediation actions to remove contaminated or dangerous materials and protect the environment and the pelagic species
- Awareness-raising initiatives for the protection of the marine ecosystem

15 LIFE ON LAND

PROTECTING, RESTORING, AND PROMOTING THE SUSTAINABLE USE OF THE EARTH ECOSYSTEM

- Management of protected lands within the sites
- Environmental Sustainability Actions
- Prompt interventions in case of environmental violations
- Decommissioning Actions Plan to reduce long-term environmental impacts
- Projects under the Horizon 2020 EU Program
- "Plastic-free" Project
- Collaboration Protocol with the Extraordinary Commissioner for the remediation of illegal landfills
- EMAS Registration
- Reuse of excavation soils
- Prompt reporting of risky situations, in terms of environment and health of the population

16 PEACE, JUSTICE AND STRONG INSTITUTIONS

PROMOTING PEACEFUL AND MORE INCLUSIVE SOCIETIES TO FOSTER SUSTAINABLE DEVELOPMENT; PROVIDING ACCESS TO JUSTICE TO ALL, AND CREATING EFFECTIVE, RESPONSIBLE, AND INCLUSIVE BODIES AT ALL LEVELS

- Organisation, Management and Control Model (OMCM) to prevent and tackle the perpetration of predicate offenses of administrative responsibility pursuant to Legislative Decree no. 231/2001 and corruption and maladministration phenomena pursuant to Law no. 190/2012
- Partnerships with Universities, Research Bodies, and the industrial system
- Monitoring corruption risks and prevention measures against corruption
- Institutional relationships at a local, national, and international level

MATERIALITY ANALYSIS

Reporting to Stakeholders is made by considering the outcomes of the material topics for the Group and its Stakeholders, the so-called materiality analysis. A material topic can generate an impact – either actual or potential – of economic, social and/or environmental nature on the Company or significantly influence the Company's appreciation on behalf of its Stakeholders.
In 2020, Sogin updated its materiality analysis - as required by the Global Reporting Initiative Standards – to evaluate the influence of the reference context on Stakeholders' expectations and Sogin's priorities.
The process envisages an analysis of internal and external contents, such as the Industrial Plan, risk analysis, new reference legislations, press releases, activities of the inspection body, social media, and internal climate analyses. Global macro-trends and the results of the comparison with foreign businesses like Sogin are also considered.
The 2020 update is included in the analysis process launched in 2019 by listening to the opinions of the internal staff of the Group, as collected through a qualitative survey distributed to corporate management. Further information on this analysis is available in the 2019 Sustainability Report, published on sogin.it.
The 2020 update featured:

1. The definition of a list of 16 material topics and a list of concerned Stakeholders;
2. The submission of a survey via e-mail to the representatives of the main identified external Stakeholders' groups (based on the Stakeholders' map of Sogin Group) to know the material topics from their perspective.

The following 9 Stakeholders' categories were questioned:

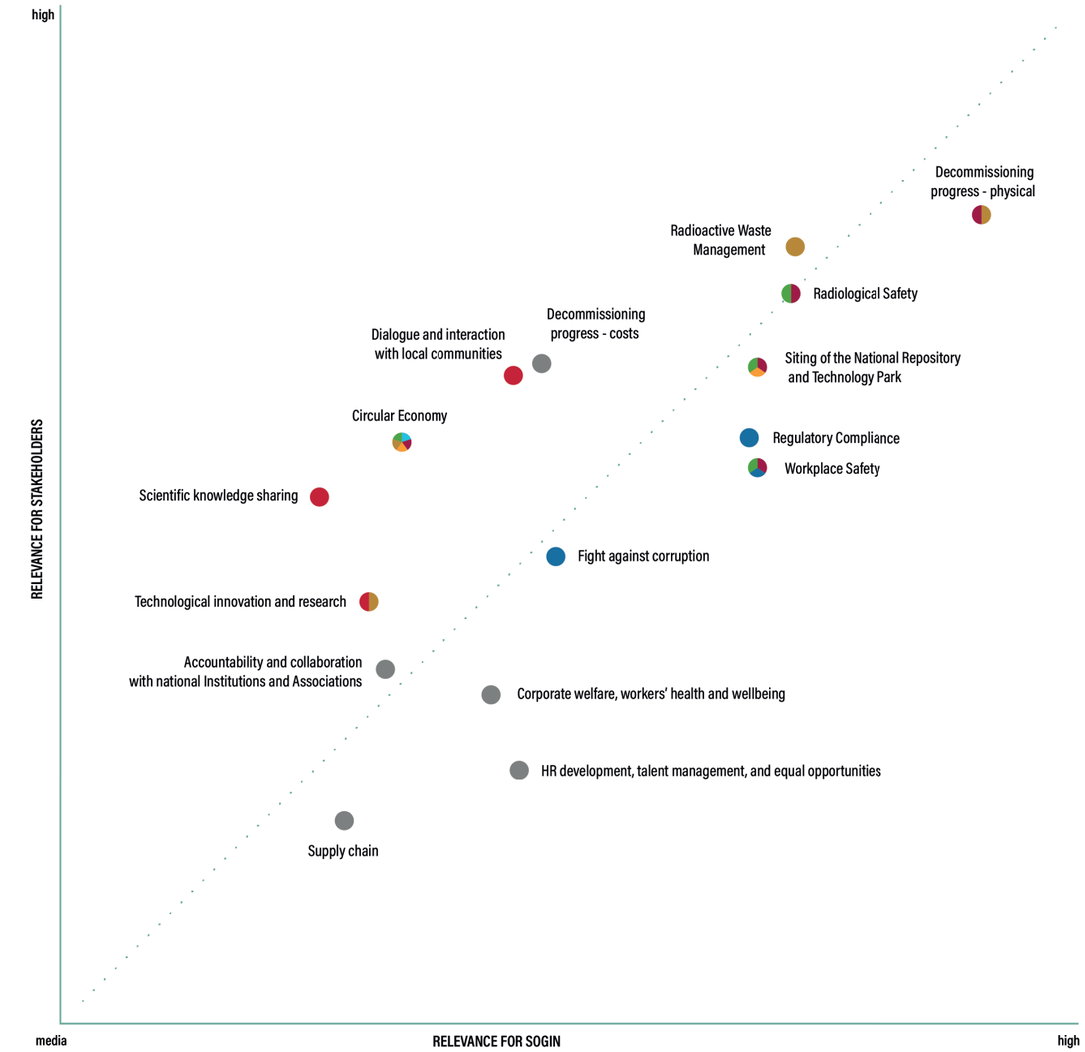
- environmentalist associations (national and local);
- suppliers and business associations;
- local communities;
- scientific and medical community;
- national bodies and institutions;
- media;
- opinion leader and national public opinion;
- professional associations;
- schools and universities.

Each Stakeholder was asked to:

- express their opinion on the 16 topics identified by Sogin as material, by specifying the topic relevance (low, medium, high), both for Sogin and the category in which they belong, and how it influences Sogin's strategic priorities and activities;
- divide the topics into categories according to their priority by giving a relevance score to each of them.

The outcomes of the materiality analysis are summarised in the following matrix, showing topics with medium and high relevance for Sogin and its Stakeholders.I risultati dell'analisi di materialità sono sintetizzati nella matrice di seguito riportata, che rappresenta i temi con rilevanza media e con rilevanza alta per Sogin e per i suoi stakeholder.

MATERIALITY MATRIX



Each topic listed in the matrix is positioned according to its relevance (top right significant relevance, bottom left minor relevance). The colour of the circles indicates the reference SDGs for each topic. The table associated with the matrix shows the topics in order of significance (1 the most relevant, 16 the least), their summary illustration, and the reference SDGs.
The issues that emerged as material are reported in the Sustainability Report 2020, together with the other topics that, although not exceeding the threshold of "high relevance," are strongly considered in the relationship with the Group's Stakeholders.
A table linking the material topics identified by the analysis with the GRI (Global Reporting Initiative) reporting standards is attached to the document. The table provides information on the links between each topic and the reference standard detected, and a description of the reporting boundary.

	Material Topics	Description	SDGs
1	**Decommissioning progress - physical**	Progress of decommissioning activities in nuclear sites aimed at releasing the areas free of radiological restrictions; complex performance of planned decommissioning activities and timing of decommissioning projects, also based on the availability of the National Repository.	8, 12
2	**Radioactive Waste Management**	Sogin's radioactive waste management process – characterisation, classification, collection, transport, and treatment of radioactive waste and possible critical/ negative impacts related to the current management process.	12
3	**Radiological Safety**	Prevention of radiological accidents, assessment of the radiological monitoring system, training, and awareness-raising projects.	3, 8
4	**Siting of the National Repository and Technology Park**	The steps of the siting process; the Stakeholders involved in the decision-making process; past and future actions implemented by Sogin in this regard; collaboration with the Stakeholders.	3, 8, 11
5	**Regulatory Compliance**	Actions intended to ensure compliance with current regulations; regular monitoring of any legal update, and prompt adaptation of internal rules to prevent breaches of laws and regulations which may lead to reputational damage or sanctions (risk of regulatory non-compliance).	16
6	**Workplace Safety**	Prevention against work accidents; training and awareness-raising projects on this matter. Specific promotional activities to spread safety culture at the workplace.	3, 8, 16
7	**Decommissioning progress - costs**	Costs related/associated to nuclear site dismantlement and closure of the nuclear fuel cycle.	-
8	**Dialogue and interaction with local communities**	Dialogue at a local level – either existing or future; exchange opportunities and analysis of relevant aspects emerged; assessment of Stakeholders' satisfaction; prevention of risks related to Sogin's reputation.	4
9	**Circular Economy**	Actions implemented or to be implemented by Sogin to apply circu-lar economy to decommissioning operations by minimising waste and maximising reuse and recycling of the materials resulted from decommissioning.	3, 6, 8, 11, 12
10	**Fight against corruption**	Actions and strategies implemented by Sogin to prevent corruption and corruption episodes.	16
11	**Scientific knowledge sharing**	Specific actions/initiatives launched or planned by Sogin to spread the scientific and cultural knowledge on nuclear decommissioning operations.	4
12	**Technological innovation and research**	Sogin's current or future projects to face the challenges of decommissioning and radioactive waste management. Partnerships with research institutes and specialised sectoral training, both at a national and international level.	4, 12
13	**Corporate welfare, workers' health and wellbeing**	Actions to increase the workers' well-being and benefits to access welfare services and promote participation in these actions.	8
14	**Accountability and collaboration with national Institutions and Associations**	Sogin's actions to develop a systematic relationship with national Institutions and Associations; identification of future partnerships; assessment of Stakeholders' satisfaction about the information and engagement provided by Sogin.	8, 16
15	**HR development, talent management, and equal opportuni-ties**	Definition of projects to develop specific training for the Group's staff; individual performance assessment and objectives identification. Development actions to promote corporate social inclusion and ensure the application of equal opportunity principles.	4, 8
16	**Supply chain**	Engagement of qualified operators; promotion of procurement plans; green procurement development; assessment of procurement quality and suppliers' feedback and dialogue.	8, 16

02.

ABOUT US

SOGIN GROUP

Sogin is the State-owned company responsible for the Italian nuclear power plants decommissioning and radioactive waste management, including that produced by industrial, research, and nuclear medicine activities. All these activities aim to guarantee the citizens' safety, safeguard the environment, and protect future generations.
Entirely owned by the Italian Ministry of Economy and Finance, Sogin works according to the strategic guidelines provided by the Italian Government.
In 2004, Sogin became a Group by acquiring 60% of Nucleco.

Carrying out the decommissioning and safe maintenance of Italian nuclear power plants to restore the greenfield sites, namely, clear the areas from radiological restrictions and return them to the communities to be reused.

Managing the radioactive waste resulting from electricity generation activities, decommissioning of nuclear power plants, and industrial, medicine, and scientific and technology research activities.

Closure of the Italian nuclear cycle by siting, designing, implementing and managing the National Repository and Technology Park that will ensure the safe storage of Italian radioactive waste in the long term.

Reducing the environmental impact by minimising radioactive waste through production processes that allow recovering reusable materials.

NUCLEAR POWER PLANTS AND FACILITIES

In addition to the four Italian nuclear power plants of Trino (VC), Caorso (PC), Latina and Garigliano (CE) and the FN of Bosco Marengo (AL), Sogin manages the decommissioning of the former fuel cycle research facilities: EUREX of Saluggia (VC), OPEC and IPU of Casaccia (RM) and ITREC of Rotondella (MT).
The Company is committed to closing the entire Italian electric and nuclear power cycle.
With the 2018 Italian Budget Law, Sogin was appointed to decommission the ISPRA-1 reactor, located in the Joint Research Centre (JRC) complex of Ispra (VA).

NATIONAL REPOSITORY AND TECHNOLOGY PARK

Sogin is responsible for siting, designing, building, and operating the National Repository, an environmental surface facility for the safe long-term storage and disposal of all radioactive waste. Along with the National Repository, a Technology Park will also be created to host a research centre open to international cooperation in nuclear decommissioning and radioactive waste management.
The public procedure for the siting of the facility started on 5 January 2021.

INTERNATIONAL PRESENCE

Thanks to more than 20 years of experience in the field, the Group is involved in several nuclear decommissioning and radioactive waste management projects abroad. It operates through its foreign offices in Moscow (Russia) and Bratislava (Slovakia).
The Group's main working areas are:

- Development of relationships and collaborations with international bodies and foreign, public and private, operators, to foster the exchange of applicable know-how in the decommissioning of Italian nuclear power plants;
- Commercial development with the acquisition of projects, studies, consultancies, and technical services on the dismantling of the plants, the management of radioactive waste, as well as on safety and radiological protection;
- Support to Italian institutions to comply with the provisions of international treaties and commitments.

In 2019, the International Atomic Energy Agency (IAEA) awarded Sogin a prestigious acknowledgment and included it among its Collaborating Centres. The Company commits to providing its support to the IAEA, within the "Nuclear Power, Fuel Cycle and Nuclear Science" program, through:

- research and development activities in the field of robotics and characterisation systems, in partnership with international bodies and organisations;
- knowledge transfer and training;
- Implementing innovative instruments to plan, schedule, and carry out nuclear decommissioning and radioactive waste management activities.

NUCLECO

Nucleco - a subsidiary company of the Group Sogin – is the leading Italian company for radiology services, radioactive waste management, decontamination activities, and rehabilitation of nuclear plants and industrial sites.
The Company provides the collection, treatment, conditioning, and temporary storage of radioactive waste and sources from different activities, such as nuclear medicine and scientific and technological research.
Nucleco's share capital is divided between Sogin (60%) and ENEA (40%).

DECOMMISSIONING

Using innovative technology solutions, Nucleco carries out the decommissioning of nuclear power plants and reprocessing facilities (including MOX and those of the Uranium-Thorium cycle), by ensuring the highest safety standards in the management of radioactive waste.

INDUSTRY

It offers safe, effective, and environmental-friendly solutions to manage NORM (Naturally Occurring Radioactive Materials) and TENORM (Technically Enhanced Normally Occurring Radioactive Materials), resulting from the petrochemical, Oil & Gas, mining, and quarrying sectors, and in the production of fertilisers

BIOMEDICAL

It is qualified for the collection, treatment, conditioning, and temporary storage of radioactive waste and sources resulting from nuclear medicine, scientific and technological research activities managed by private and public bodies. The company partners with the main radiopharmaceutical producers to minimise the volume of waste resulting from diagnostic and therapeutic interventions.

ENVIRONMENT

It carries out the conventional and radiological remediation of plants and facilities by providing Its customers with expertise based on the best available technologies.

AUTHORISATIONS AND REGULATORY SYSTEM

AUTHORISATION SYSTEM

Any activity carried out by Sogin is subject to systematic controls performed by competent authorities and institutions (i.e., MiSE – Ministry for Economic Development); ISIN (National Supervisory Body for Nuclear Safety and Radiological Protection); MATTM – Ministry of Environment, Territory and Sea Protection (now MITE, Ministry for Ecological Transition); Regional and Municipal Authorities in compliance with the guidelines provided by the International Atomic Energy Agency (IAEA) and the national regulation, among the most stringent in Europe.
The prior authorisation to be obtained to dismantle a nuclear power plant is the Deactivation Decree, issued by the Ministry for Economic Development, after consultations with the Ministries of Environment, Territory and Sea Protection, Interior, Work, and Social Policies, Health, the Regional Authorities involved and ISIN.
This whole procedure, defined under articles 98 "Authorisation for the dismantling of nuclear power plants (Article 55 of Legislative Decree no. 230 of 17 March 1995)" and 99 "procedure to issue the authorisation for deactivation – execution of the operations (Article 56 of Legislative Decree no. 230 of 17 March 1995)" of Legislative Decree no. 101/2020, starts with the submission of the request for deactivation made by Sogin.
Legislative Decree no. 1/2012 amended by law no. 27/2012, pursuant to art. 24, par. 4, also states the need to receive the favourable opinion of Municipal and Regional Authorities for dismantling or implementing facilities where the plants are located.
Pending the issue of the Decree, other authorisations can be obtained to carry out individual projects to progress in dismantling activities and the construction of interim works and structures finalised to the final decommissioning.

INTRODUCTION TO LEGISLATIVE DECREE NO. 101 OF 2020

The authorisations for single projects can be obtained by implementing Article 233, par. 1 "Transitional scheme for on-going authorisation procedures (Legislative Decree no. 230 of 17 March 1995, Article 148)" of Legislative Decree no. 101 of 2020 for specific operations and interventions related to the deactivation and aimed at ensuring the radiological protection of workers and people.
After obtaining the deactivation decrees or the authorisations envisaged under Article 233 of Legislative Decree no. 101/2020, Sogin shall submit specific operational plans or detailed reports to the approval of ISIN, with information on the work to be implemented and adequate evaluations on safety and radiological protection.
The Legislative Decree no. 101/2020 - published in the Official Journal on 31 July 2020 - introduces the 2013/59/EURATOM Directive by updating and collecting the previous Italian laws on radiological protection in a consolidated text. The text also includes Legislative Decree no. 230/95, namely the last legal reference in force when Sogin submitted the deactivation requests for plants and facilities under decommissioning.

RICONOSCIMENTO DEI COSTI

Sogin is subject to the Italian Regulatory Authority for Energy, Networks, and Environment (ARERA) regulations and controls through a regulatory system based on an annual estimate and related consumption.
Sogin operates according to the addresses specified in the decrees issued by MiSE in compliance with Article 13, par. 4 of Legislative Decree no. 79/1999 implementing Directive 96/92/EC concerning common rules for the internal market in electricity.
Sogin operates according to the addresses issued by the Ministry for Economic Development pursuant to art. 13, par. 4 of Legislative Decree no. 79/1999 implementing Directive no. 96/92/CE concerning regulations on the internal market in electricity.
All the activities related to the decommissioning of nuclear power plants are financed by the A2RIM tariff through a regulatory framework defined by ARERA.
The current regulatory framework for recognising the incurred costs for nuclear commissioning, for 2013-2016, has been defined by the Regulatory Authority with resolutions 194/2013, 632/2013, 384/2014, 374/2015.
This system is based on a mechanism that recognises both estimated and final costs. In this framework, Sogin yearly submits the following documents to the Regulatory Authority for approval:

- by 31 October, the estimated costs for the next financial year and an update of the following four-year program (four-year program);
- by 28 February, the financial statements of the previous year for approval.

ARERA approves the estimated costs of the activities and recognises the final incurred costs according to efficiency and effectiveness criteria, provided that they are included in the coverage for nuclear expenses as stated under the inter-ministerial Decree of 26 January 2000 (as amended by the inter-ministerial Decree of 3 April 2006).
In the event of delays in achieving milestones, the payment of a penalty - that cannot exceed the financial year's profit – was added to the classic incentive scheme (defined based on the achievement of milestones).
The possible surplus in the profits of the financial year is distributed in the following years of the same regulatory period.
The current system divides the costs for nuclear operations into different categories, to which other recognition modalities apply.
ARERA defines nuclear costs to be covered by the electricity tariff (A2RIM component, former A2) and ensures Sogin's financial needs coverage through specific allotments of the Fund for Energy and Environmental Service.
The Company is currently implementing a new regulatory system that will provide for cost review and a new assessment model to evaluate the progress of the nuclear commission. The model aims at improving procedures to assess the progress of works by providing a general framework of the nuclear commission that complies with an analysis based on economic values only.

ECONOMIC VALUE FOR STAKEHOLDERS

FISCAL STRATEGY

The fiscal strategy adopted by the Sogin Group guarantees the payment of due taxes within the terms set out by law and the complete and prompt compliance with tax obligations:

- Ensure the correct tax regime for the Company, using the legal and regulatory tools to optimise the tax burden to the extent permitted by law;
- Monitor and mitigate the tax risk, namely the risk of breaching tax regulations or operating in conflict with the tax regime's principles and/or purposes.

The tax approach adopted by any businesses like Sogin – enrolled in the list of public administrations falling under the scope of the consolidated income statement pursuant to the public accounting and financial law (Official Journal – General Series no. 229 of 30 September 2019), and thus, enrolled in the List of Public Administrations (IPA) – leaves no room for discretionary decisions or actions.
More specifically, the Group has its regulatory and procedural set of rules that express the objectives, features, and management approach implemented on tax processes, along with any tax risk detection, measurement, management, and control operations.
In addition to the above, the electronic invoicing mechanism ensures corporate integrity in its relationships with Public Administration and the regular monitoring of corporate tax performances.
In case of doubts related to the interpretation or application of the fiscal regulations, Sogin adopts a reasonable interpretation approach, supported, if necessary, by qualified external consultants and requests clarifications and advice to the competent tax authorities. In any case, the activity is subject to the review of an external audit company.
Over time, the Sogin Group consolidated a collaborative approach with the Financial Administration, Italian Revenue Agency and Customs Agency based on mutual trust, thus ensuring correctness, transparency and full collaboration in the audit performance by providing prompt and complete reports in reply to submitted requests.
In case errors are detected in the implementation of tax provisions, the Company makes use of automatic correction instruments to minimise the sanctioning burden.
Intermediaries and tax advisors provide support to the Sogin Group's fiscal affairs, including regular administrative activities and assistance in maintaining relationships with the Financial Administration during audits and in pre-litigation procedures.
Sogin has a stable branch in Slovakia and fulfils the tax obligations and payments in compliance with local tax regulations.
The Sogin Group stresses the importance of the link between tax governance – namely the set of tax norms and fiscal risks regulations – and corporate governance, which is intrinsic in managing accounting and administrative operations.

ECONOMIC VALUE FOR STAKEHOLDERS

Sogin implemented decommissioning operations for EUR 72.5 million throughout the year compared to EUR 48.3 million in 2019 (+50%) and applied a significant reduction of the Group's operational costs, equalling EUR 170 million, compared to EUR 185.3 million in 2019 (-8%).
Despite the Covid-19 healthcare emergency, the Company was able to achieve these results by improving its performance of nuclear decommissioning and radioactive waste management by adopting a new organisation model and enhancing high technical competencies.
The value of the Group's production, excluding the management of the nuclear fuel cycle – as a nonrecurring item – equals about EUR 196.2 million, compared to EUR 183.1 million recorded in the previous financial year (+7%).
The Group's EBIT, net of amortisations and provisions for the period in question, equals about EUR 8.9 million compared to EUR 1.8 million in 2019.
The Sogin Group ended the 2020 financial year with a consolidated net outcome of about EUR 7.1 million, recording an increase of approx. EUR 5.9 million compared to the previous year.

GROUP VALUE CREATION AND DISTRIBUTION

The chart below shows the Group's economic value distribution among its Stakeholders in the 2018-2020 three-year period.
The chart below is drafted in compliance with the GRI (Global Reporting Initiative) Standard requirements and it is based on a reclassification of the Group income statement reported in the Group Consolidated Financial Statement as of 31 December 2020.

- The generated economic value corresponds to the measurable economic wealth, produced by the Group over the year (it includes the value of production, income from participating interests, revenue and financial charges, changes in ongoing commissioned works, and increases of non-current assets of in-house output);
- The distributed economic value is a qualitative-quantitative indicator of the Group social impact and the distribution of value among different Stakeholders;

- The economic value retained within the Group corresponds to the wealth ensuring financial sustainability, and it is reinvested in innovative instruments and services to foster continuous improvement.

GROUP VALUE CREATION AND DISTRIBUTION			
Figures in EUR million	**2020**	**2019***	**2018**
Generated economic value	**204,54**	**213,71**	**216,50**
Fuel Management and Repro-cessing activities	5,1	29,3	20,2
Distributed Economic Value	**179,98**	**191,45**	**195,05**
Operating costs (value distrib-uted along the supply chain)	81,14	98,36	98,15
Value distributed to employ-ees	88,86	86,98	86,90
Value distributed to the pro-viders of capital	1,33	0,03	0,04
Value distributed to the Public Administration	3,57	1,82	6,51
Value distributed to Share-holders	5,08	4,25	3,45
Value distributed to local communities	0,00	0,00	0,00
Retained economic value	**24,57**	**22,26**	**21,45**
*The value distributed to 2019 Shareholders was restated following an integration on the dividends distributed.			

The economic value distributed in 2020, equal to approx. EUR 179.98 million shows a slight decrease compared to 2019 (approx.191.45). More specifically, the value allocated by the Group includes the following entries:

- **Operating Costs (value distributed along the supply chain):** approx. EUR 81.14 million, the share of value allocated to the Group suppliers. The entry includes the purchase costs of raw materials, ancillary and consumables, prices for the use of services, for the execution of works, and the use of third-party assets;
- **Value distributed to the employees:** equal to EUR 88.86 million, the share of generated economic value distributed to employees via salaries and wages, social security contributions, severance schemes, and services provided to employees (meal services, tickets). The year 2020 maintains the same positive efficiency trend recorded over the previous years;
- **Value distributed to capital providers:** equal to approx. EUR 1.33 million, it corresponds to the interest due from Sogin Group to its capital providers. Interest expense and other financial expenses mainly relate to interest paid to the provider CESI for the collection of the receivable due from the Campania Region;
- **Value distributed to the Public Administration:** equal to approx. EUR 3.6 million, it corresponds to the share of economic value allocated to the Government, by means of tax and social security levy (direct, indirect taxation and paid taxes). The 2020 value has increased (in 2019 the recorded value was EUR 1.8 million);
- **Value distributed to Shareholders:** equal to approx. EUR 5.1 million, it is the economic value share distributed by the Company's sole Shareholder, as dividends. The 2020 value has increased compared to year 2019 due to an increase in distributed dividends (EUR 4.25 million in 2019).

The Group value that was not distributed to the Stakeholders was internally retained as amortisations (including depreciation) and allotments for risk funds and reserves. It serves to ensure the Group's sustainable growth.

03.

ORGANISATION, CONTROL, AND RISK MANAGEMENT

OUR GOVERNANCE

The Sogin Group includes Sogin, parent company, and Nucleco, a subsidiary company.
The following table shows the tasks and duties of the corporate bodies.

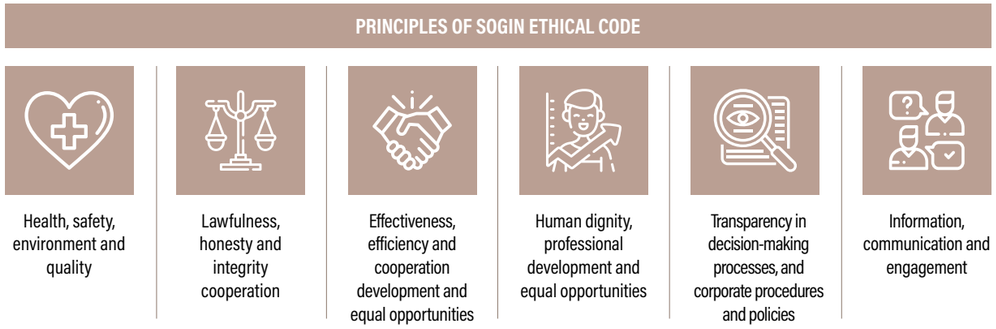
SOGIN				
SHAREHOLDERS' MEETINGS	**BOARD OF DIRECTORS**	**BOARD OF STATUTORY AUDITORS**	**JUDGE FROM THE COURT OF AUDITORS**	**SUPERVISORY BODY**
	In office for the 2019-2021 three-year period	In office for the 2020-2022 three-year period		In office until February 2021
Composta da un unico socio, il Ministero dell'Economia e delle Finanze. Approva il Bilancio di esercizio, nomina e revoca i membri del Consiglio di Amministrazione e del Collegio Sindacale, e ne determina i compensi. Conferisce l'incarico di revisione legale dei conti, stabilendone il corrispettivo economico.	The Board of Directors (BoD) consists of five members, appointed by the ordinary Shareholders' Meeting, and elected according to the applicable law on gender balance. The BoD is responsible for defining corporate and Group strategies and guidelines of the internal control system. It approves the Draft Budget, updates the Organisation, Management, and Control Model adopts the Tree-year Programme for Corruption Prevention It appoints the members of the Supervisory Body and defines their salaries, appoints the Manager in charge of drawing up the corporate accounting documents and the Manager for the Prevention of Corruption and Transparency.	It Is the Supervisory body in charge of monitoring the Company's compliance with laws, with the articles of association, the principles of correct administration, the suitability of the Company in terms of organisation, administrative accounting system, and its proper functioning.	As a wholly-owned subsidiary of the Ministry for Economic and Financial Affairs, Sogin is subject to the supervision of the Court of Auditors. The Delegate is entitled to participate in the Shareholders' Meetings, BoD, Board of Statutory Auditors, and Supervisory Body. Having functions of the rapporteur, the Delegate drafts the Report through which the Court reports to the Parliament the outcomes concerning the supervision of the Company's financial management.	It is entrusted with monitoring the functioning, effectiveness, and compliance with the Organisation, Management, and Control Model (OMCM) and updating it. This Body also shares the offices of the Independent Evaluation Body (OIV). In 2020, the Supervisory Body held eight meetings and devoted specific attention to the Company's OMCM review actions. On 25 February 2021, the new Supervisory Body was appointed by the BoD following a public call to appoint external members. The Body holds office for the duration of the mandate of the BoD under which it was appointed.
	Chairman: **Luigi Perri**	Chairman: **Salvatore Lentini**	Delegate Control Officer: **Judge Rossana De Corato** Substitute of the Delegate Control Officer: **Judge Maria Gabriella Dodaro**	External Member acting as Chairman: **Francesco Santangelo** Replaced by **Gaetano Caputi** from 25 February 2021 External Member: **Alessia Fulgeri.** Replaced by **Davide Albonico** from 25 February 2021 Internal Member: **Mariano Scocco** Replaced by **Pierfrancesco Baldassarri** From 31 March 2020
	Deputy Chairman and CEO: **Emanuele Fontani**	Statutory Auditors: **Cinzia Nava** **Enrico Maria Nadasi**		
	Non-Executive Directors: **Raffaella Di Sipio** **Luce Meola** **Enrico Zio**	Substitute Auditors: **Maurizio Accarino** **Luisa Foti**		

NUCLECO			
SHAREHOLDERS' MEETINGS	**BOARD OF DIRECTORS**	**BOARD OF STATUTORY AUDITORS**	**SUPERVISORY BODY**
	In office for the 2018-2020 three-year period	In office for the 2020-2022 three-year period	In office for the 2018-2020 three-year period
Nucleco Shareholders' Meeting comprises Sogin, which holds 60% of its share capital and ENEA, 40%. It approves the Financial Statements, appoints the members of the Board of Directors and the Board of Statutory Auditors, defines their salaries, appoints the statutory audit company, and establishes its consideration.	Nucleco's Board of Directors (BoD) consists of three members, appointed by the Shareholders' Meeting. The Chairman of the BoD chairs the Shareholders' Meeting, summons, and chairs the Board of Directors establishes its agenda, and verifies the implementation of the resolutions. Upon the approval of the Shareholders' meeting, the BoD has conferred full powers for the management of the Company to the CEO in office, except for those solely granted to the Chairman and the Board of Directors. The BoD has also appointed the Chief Executive Officer (CEO) as Deputy Chairman of the Company, to replace the Chairman when the latter is absent or prevented from performing his office according to the legislation and to the company's articles of association, without additional compensation. The Chairman and the CEO are appointed representative and signatory powers.	It consists of three Statutory Auditors and two Substitutes appointed by the Shareholders' Meeting on 30 April 2020 according to the applicable law on gender balance. Sogin appoints the Chairman of the Board of Statutory Auditors and a Substitute Auditor, while ENEA appoints two Statutory Auditors and a Substitute Auditor.	In compliance with the honourability, independence, and functional autonomy requirements, it comprises three members, two external and one Internal, appointed by the BoD on 31 August 2018. The independent Supervisory Body shall assess compliance with anti-corruption and transparency actions.
	Chairman: **Nadia Cherubini** (starting from 6 March 2020) Deputy Chairman and CEO: **Lamberto D'Andrea** Director: **Emilio Macci** (starting from August 2020)	Chairman: **Cesare Carassai** Statutory Auditors: **Valentina Vaccaro** **Roberto Iaschi** Substitute Auditors: **Giulio Torlonia** **Angela Maria Rocca**	Chairman: **Mariangela Di Giandomenico** External Member: **Francesco Cardella** Internal Member: **Giuseppe D'Onofrio**

ORGANISATION AND CONTROL

ORGANISATION, MANAGEMENT, AND CONTROL MODEL

Sogin and Nucleco adopt an Organisation, Management and Control Model (OMCM) to prevent and tackle the perpetration of predicate offenses of administrative liability (under Legislative Decree No. 231/2001) and corruption and maladministration phenomena under law no. 190/2012.
An integral part of this Model consists of the Ethical Code, namely the Charter of Principles, to direct and rule the organisational and individual behaviours to be complied with on behalf of those engaged in the Company's mission and interested in pursuing it.
The two documents consist of recommendations of the Board of Directors. The Supervisory Body shall monitor the functioning, effectiveness, and compliance with the OMCM and update the Model.



To improve the effectiveness of the Organisation, Management and Control Model, on 17 December 2020, Sogin BoD reviewed the Special Sections of the Model. The Company approved a new Special Section concerning "Offences against Public Administration" and added two other monitoring Instruments in the "Environment, Health and Safety" Special Section.

PREVENTION OF CORRUPTION AND TRANSPARENCY

Sogin and Nucleco have their Corruption Prevention and Transparency Officer (CPTO).
In 2020, the BoDs of Sogin and Nucleco had updated and approved their Three-Year Plans for Corruption Prevention for 2020-2022.
The Three-Year Plan for Corruption Prevention is included in the Company's Organisation, Management, and Control Model. It is intended to prevent corruption and acts of maladministration and ensure full access to the data and Information that Sogin and Nucleco are required to publish and update in the "Transparent Business" available on their official websites.
In 2020, Sogin received a single request to access its data and a request for general access; the company replied to such requests according to the terms defined by the legislation. Nucleco did not receive any access requests, neither simple nor general.
To encourage whistleblowing, Sogin and Nucleco have adopted IT platforms for managing reports, which guarantee the anonymity of the disclosers.

Throughout 2020, the companies did not receive any whistleblowing reports.
In 2020, the Company provided a refresher course on corruption prevention and transparency to the members of the BoD, the Statutory Auditors, the members of the Supervisory Body, and the Group's employees. The training course was provided online. Nucleco's Officer for Corruption Prevention and Transparency held a training course on corruption prevention for recruits throughout the year.

PROTECTION OF PERSONAL DATA

Sogin appointed a Data Protection Officer, in line with the EU standards defined in the General Data Protection Regulation, GDPR no. 679/2016 concerning personal data protection (Data Protection Officer, DPO).
During 2020 the following actions to adapt to the GDPR have been carried out:

- Mapping of personal data processing, through the analysis of the processing operations implemented in the Company, meetings with competent officers, and monitoring and updating activities;
- The record of the Controller containing information on each mapped processing activity and other relevant monitoring and updating activities;
- Assessment of risks deriving from accidental or unlawful destruction, loss, alteration, unauthorised disclosure of, or access to personal data processed, to guarantee an appropriate level of security in personal data processing;
- Impact assessment for personal data processing procedures that are likely to result in a high risk to the rights and freedoms of natural persons, under their nature, their scope and/or their purposes;
- Drafting and adaptation of the personal data protection form provided to third parties, and, if necessary, drafting of the required consent forms;
- Continuous adaptation of corporate forms, procedures, and policies to the GDPR;
- Permanent training on the GDPR;
- Managing requests submitted by the concerned parties.

INTERNAL CONTROL SYSTEM

The Internal Control System is a set of rules, procedures, and organisational structures in charge of monitoring the adequacy and functioning of the executive, administrative, accounting, and corporate structure.
It works to ensure that the objectives of the BoD are achieved in line with the applicable law and the corporate bylaws by providing:

- Efficiency and effectiveness of corporate processes;
- Protection of the value of the assets;
- Reliability and integrity of accounting and management information;
- Legal compliance with internal procedures.

It includes corporate bodies (Board of Statutory Auditors, Board of Directors and Supervisory Body), the Internal Auditing and other professionals involved in corporate governance (i.e., the Officer for Corruption Prevention and Transparency, the Appointed Manager, the Data Protection Officer) and the top managers in charge of performing first-level checks.
Along the controls performed by the Board of Statutory Auditors, the members of the BoD, the delegates and members of the Supervisory Body, the Organisation, Management, and Control Model envisages an Internal Control System divided as follows:

TYPE	DESCRIPTION
Line checks (first-level)	• appointed to all corporate offices; • regularly performed in the business processes by those who carry out, manage or coordinate a given activity; • aimed to ensure the correct implementation of corporate operations.
Second-level checks	• periodically carried out by the offices of risk management, compliance, verification of the Integrated Management System for Quality, Safety and Environment, Management Control, Executive in charge and Data Protection Officer, etc.; • aimed to monitor, analyse and detect improvement opportunities and/or possible adaptation actions for managers.
Independent or third-level checks	• carried out by the Internal Audit function, which directly reports to the Senior Management on the design and overall functioning of the Internal Control system

Throughout 2020, the "Internal Audit, Risk and 231 Management, and the Integrated Management System carried out the Internal Audit Function.
On 5 March 2020, upon the proposal of the Internal Audit Function, the BoD resolved the following:

- The strategic and management guidelines of the internal auditing activities for 2020-22;
- The mandate conferred to the Function mentioned above, designed to support proper implementation of the strategic and management guidelines;
- The 2020 Internal Auditing Plan envisaging the intervention priorities for the year in question.

The Internal Audit Function also carries out verifications, appraisals and/or advising actions related to specific corporate needs expressed by the Board of Directors, its delegates and/or other managers of the Company throughout the year.

In 2020, the Officer of the Internal Audit Function has often reported to the BoD and, on 12 December 2020, presented the progress of the audit plan, Function performance, and the outcomes of the verifications carried out. While implementing its mandate, it issues the audit reports. Based on their findings, it subsequently submits them to the BoD, the Board of Statutory Auditors, the Supervisory Body, the Officer for Corruption Prevention and Transparency, the Appointed Manager, the Chief Risk Officer, and all the concerned structures. In consideration of the corporate governance structure and the organisational features of the Company, the Internal Audit Function also performs internal control audit tasks as defined under par. 3, let. b) of Article 6 of Legislative Decree no. 175/2016.
Nucleco's Internal Audit and Risk Management System is appointed to a specific corporate unit and the Supervisory Body.

INTEGRATED MANAGEMENT SYSTEM

To better pursue its corporate mission and reach institutional objectives, Sogin has an Integrated Management System, certified for Quality, Environment, and Safety, allowing controlled and consistent management of processes by integrating quality, environmental protection, and workplace health and safety.
The Integrated Management System also applies the provisions of the IAEA GSR Part 2 "Leadership Management for Safety" standard and those defined in the EU-EMAS regulation No. 1221/2009.
Safety, and Environment in Sogin, thus, increasing the Company's reliability for all the Stakeholders, i.e., Local Authorities, Associations, Trade Unions, and Supervisory and Control Bodies.
The principles and purposes of the Policy are included in training and learning activities provided to the staff. Moreover, they create an opportunity for a constant dialogue with the Stakeholders, including the contractors who take part in decommissioning activities.

OUR CERTIFICATIONS		
QUALITY SYSTEM CERTIFICATION DNV·GL ISO 9001	ENVIRONMENTAL SYSTEM CERTIFICATION DNV·GL ISO 14001	SAFETY SYSTEM CERTIFICATION DNV ISO 45001
UNI EN ISO 9001, Quality Management Systems: the regulation outlines the requirements of a management system for the quality of an organisation. The conditions are "general" and may be implemented by any organisation.	**UNI EN ISO 9001, Quality Management Systems:** the regulation outlines the requirements of a management system for the quality of an organisation. The conditions are "general" and may be implemented by any organisation.	**UNI EN ISO 45001,** Occupational health and safety management systems: it certifies that the organisation is provided with healthy and safe workplaces, preventing injuries and work-related diseases. It also certifies the Company's commitment to improving HS performance.

The implementation and improvement of the Integrated Management System have been verified by competent structures in charge of Quality, Safety, and Environment through integrated audits carried out on corporate processes and the company's sites. Said verifications, carried out remotely in 2020 due to the Covid-10 pandemic, showed compliance with the reference standards.
Compliance with the standards is also subject to regular verification on behalf of a third certified body in charge of assessing and certifying the Company's compliance with the current corporate activities and processes regulations.
Again in 2020, the verification carried out by the certifying body, which ended on 2 December, had a positive outcome.
More specifically, during the audit performed on Trino and Garigliano sites and the offices in Rome and Bratislava, the certifying body has ascertained compliance concerning the following activities:

- Design and execution of deactivation activities on nuclear facilities;
- Engineering and supply services in the nuclear, energy, and environmental sectors on behalf of third parties;
- Design and supply training services on radiological protection and nuclear safety in decommissioning processes, market activities, engineering, and supporting processes, including specific radiological protection and nuclear safety training.

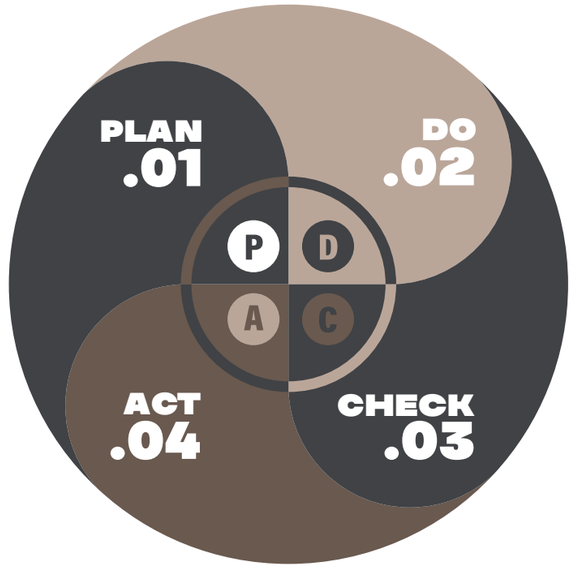
The certification of the Integrated Management System is also promoted in the union agreement to improve productivity/quality in Sogin.
In July 2020, Nucleco renewed the certification for social responsibility in compliance with the SA8000 standard by restating its commitment to protecting and improving its employees' working conditions. The quality, environment, and safety management systems featured visits on behalf of the Certifying Body to monitor their regular implementation. The systems were deemed compliant with the ISO 9001, ISO 14001, and ISO 45001 standards. Moreover, the validation of the updated 2020 Environmental Statement and the EMAS registration for the Nucleco Site three-year registration period in 2020. The Company is expected to renew the Quality (ISO 9001) and Environment (ISO 14001 and EMAS) certifications in 2021.

UPDATE OF INTEGRATED MANAGEMENT SYSTEM PROCESSES

In 2020, Sogin continued monitoring its corporate processes and reviewing the Integrated Management System procedures according to the requirements stated under ISO 9001 and ISO 14001 regulations (corporate context analysis, leadership, risk management, and Risk-Based Thinking). The Company has also continued integrating the criteria of the IAEA GSR Part 2 and adapting the workers' health and safety Management to the ISO 45001 regulation, replacing the OHSAS 18001 standard. More specifically, the Integrated Management System Handbook and corporate documents were also subject to review in terms of studies and analyses on corporate systems, risk assessment, and health and safety improvement opportunities. In line with the requirements of the ISO 45001 standard, the Company launched a process to promote the engagement of workers and representatives through targeted information, and training campaigns addressed to workers and Officers for Health and Safety.

NEW MAPPING OF MACRO CORPORATE PROCESSES

On 17 December 2020, the BoD approved the new "Map of corporate macro processes" by implementing the General Section of the Organisation, Management, and Control Model.
In addition, to ensure greater compliance, the company's institutional mandate realigns macro processes in consistency with the current organisational structure and the objectives of the Industrial Plan. The mandate not only accounts for the macro processes in a «value-chain» perspective but also according to the «Deming cycle» model.
This model, already integrated into management processes, represents a constant improvement model based on a logical sequence envisaging four key stages.



INTEGRATED MANAGEMENT SYSTEM POLICIES

In November 2020, the CEO submitted the new Policies for the Integrated Quality, Safety, and Environment Management System to be implemented across the company's units to the employer of the central offices, the Officers in charge for sites decommissioning, the Workers' Representatives for Safety and Environment and the Management Representative for the Integrated Management System. After the submission, the CEO approved the Policies.
The Integrated Management System Policies set out the commitments of the Top Management to ensure the effective implementation of the Integrated Management System as a tool to create added value for the company in line with corporate ethical principles and the values of sustainability and excellence that Sogin promotes across the territories where it operates and in its corporate mission.

RISK MANAGEMENT

The Sogin's Risk Management System is structured according to the public nature of the Company and the specific features of the sector in which it operates.
The primary purpose of Sogin's Risk Management System is to ensure the control of compliance, strategic, operational risks, and environmental, security, and health-related risks. Said risks include internal and/or external events which may affect the implementation of processes and the development of projects, with consequences on the achievement of the corporate objectives and reputation.

SOGIN

In 2020, the Company started developing an integrated risk management system and capitalised organisation and management solutions to further strengthen the risk management system in terms of Enterprise Risk Management (ERM) and Project Risk Management (PRM).
The new structure of the organisation includes risk management within the internal audit functions, stresses its importance among first-level procedures and provides a specific risk management system within each corporate Unit that operates in coordination with the Risk Management Office. This approach provides general coordination with the risk management and control system on the implementation of relevant subsystems, by appointing the development of the risk management model to the top positions of the Company, according to their specific competencies.
To improve the role of the Risk Management Function in decision-making processes for strategic and corporate planning, in 2020, the Company established two specific offices: the Key Risk Specialist (KRS), appointed to experts able to assess and detect specific sectoral risks and the Risk Owner (ROw), appointed to an expert ablet to manage specific risks in a given sector. In this way, new hierarchic and functional relationships were established among the main professionals of the Sogin risk management system, more specifically, the Chief Risk Officer (CRO), the Risk Manager (RM), the KRS and the ROw.
As for ERM, in 2020, the Company carried out the following activities:

- Launch and management of the annual review process for site-specific environmental risks, implemented in partnership with the Unit in charge of coordinating and control the development of environmental management system through partnership with KRS and ROw of the corporate units involved;
- Development and implementation of the occupational health and safety management system and launch of the first risk assessment cycle, performed in partnership with the area appointed the coordination and control for the development of occupational health and safety management that worked in synergy with the KRS and ROw of the corporate sectors involved;
- Launch and management of the first cycle for the assessment of criminal risk and administrative liability in the relationships with the Public Administration. The results of this cycle were included in the relevant Special Section of the corporate Organisation, Management, and Control Model.

The PRM initiative focused on:

- Management of the analysis and assessment process of the risks and opportunities that may result in discrepancies in the implementation of General Time Programs (PTG), upon the issue of the new 2020 Whole Life Plan, submitted to ARERA;
- Said evaluations focused on the analysis of "critical paths", namely the activity lines that mostly affect the achievement of final targets, brownfields and/or green fields, of the dismantling processes envisaged by the Whole Life Plan. The analyses were conducted by the competent Project Risk Analysts/Task Managers, supported by Project Task Leaders, Project Controllers and other relevant sectoral experts in each site. These professionals had to verify and assess the intrinsic risks of the projects. Based on these findings, the Company carried out statistical simulations according to the Monte Carlo method. In terms of impact and probability, the assessments made use of a Risk Register and predefined requirements to ensure acceptable objective and homogeneous standards for the Company. Moreover, the Project Risk Analyst worked with the Project Risk management unit to suggest single risk management and mitigation plans which were approved by the Project Manager-Risk Owners. The mitigation actions will be implemented in compliance with the guidelines set out by the new 2020-2025 Industrial Plan, and subsequently included in the afore-mentioned Plan.
-

NUCLECO

To introduce the updates of the 231 Model, in 2020, Nucleco conducted specific investigations to detect the risks arising from the new offences introduced in 2019 and 2020, and updated the correlation matrix for the processes connected to risks and offences and specific control protocols.
Moreover, by introducing the attestation requirements in favour of the Competent Manager of the Parent Company Sogin (pursuant to Law no. 262/2005), Nucleco detected the main processes and risks impacting the issue of corporate financial report, and launched a set of controls to reduce them.

Technological and Market Risks	Connected to the specific nature and age of power plants and equipment; type of waste treatment processes and progressive reduction of space in storage facilities. In 2020, the Company has continued investing to replace and renew existing instruments and acquire new technologies. The risk of saturation of temporary waste storage facilities – either in terms of radiological activity and available volumes – is subject to regular monitoring and envisages alternative solutions to adopt in case of storage filling issues, such as the implementation of new areas within the Casaccia Research Centre.
Economic (credit risks)	It is connected to Nucleco's exposure to potential loss resulted from failure of the counterparties to meet their obligations. As for this risk, please note that Nucleco's main clients include its Shareholders, Sogin and ENEA, public institutions like the EU Commission and public and/or private operators (i.e., hospitals, institutes, and industries). Given the composition of the statement of liabilities (82% to Sogin and ENEA, and 18% to private clients and public Bodies), the credit risk is not relevant.
Economic (liquid-ity risk)	It concerns the insufficiency of the financial resources required to cover cash requirements. Nucleco mainly carries out activities for its Shareholders, ENEA and Sogin, in implementation of active contracts which account for 87% of active income from characterisation activity performed in 2020. The risk is remote, as the flows resulting from corporate management and the current asset and financial structure of the Company do not require bank borrowing.
Industrial Risks	It can result from the release of radioactive material from the site. Given the remote chance of this event, the types of waste treated or detained by Nucleco may result in a radiological exposure for each member of the resident population equal to 2.7 mSv (same average annual amount of NORM) in a 1 km range. The only not negligible side effect for the Company would be its reputational loss. To further reduce the risks connected to the possible release of radioactive material, Nucleco ratified a contract to carry out the incineration of radioactive solvents abroad..
Regulatory Risks	It is connected to the possibility that further restrictions introduced by national and international, sectoral and general regulations affect the Company's regulatory compliance. Nucleco, supported by Sogin, constantly monitors the reference regulatory framework, mainly in an environmental (i.e., Legislative Decree no. 152/2006) and safety (i.e., Legislative Decree no. 101/2020) perspectives, and implements due updates.
Reputational Risks	It is connected to the loss of the Stakeholders' trust. To mitigate this risk according to the corporate Ethical Code and in, Nucleco analyses and evaluates the disclosures offered to the Stakeholders supported by ENEA and Sogin according to their areas of competence. Among the management strategies adopted for these risks is the maintenance of certifications within the scope of the Integrated Management System (ISO 9001; ISO 14001; ISO 45001; SA 8000) and compliance with national regulations on transparency, ethics and anti-corruption.
Administrative Risks	Connected to failure to comply with regulatory and administrative provisions. In this regard, over 2020, Nucleco strengthened the internal control by updating and reviewing administrative and management processes and implementing IT integrated systems in partnership with Sogin.
Exogenous Risks	Connected to factors - external to Nucleco -, which would have consequences on the Company's going concern. They include: regulatory risk (as previously described); failure to perform the operations currently carried out for Sogin – as, for example, the redefinition of decommissioning strategies for nuclear power plants and facilities; authorisation risks resulting from delays of the contracting authorities for which Nucleco operates.
Coved-19 emergency-related Risks	Connected to the Covid-19 pandemic. The Company, supported by Sogin, has promptly introduced measures to minimise the risk of coronavirus contagion. The corporate operations and production have continued throughout the year. Part of the staff worked in a rota system and others in remote working.

COMPLIANCE SYSTEM

Sogin has a specific structure to manage the compliance risk, evaluate and monitor the corporate compliance with sector regulations, control their effective enforcement, and check progress and outcomes.
Art. 14 of the new regulation on corporate crisis under Law 155/2017 states the need to "establish appropriate organisational set-ups to promptly detect possible crisis and the loss of business continuity". Said provision aims at avoiding an overlapping among different offices, in charge of monitoring the corporate internal compliance.
This structure, operating in line with the principles of awareness, reputation, accountability, risk mitigation, and risk management, carries out a set of precautionary activities to ensure that the Company complies with sector regulations, protect it from regulatory and reputational risks, strengthen the corporate reputation and ensure competitiveness and trust from the Stakeholders. By defining several best practices, this structure can bolster the corporate Offices and help them achieving corporate goals, by constantly ensuring compliance with the current regulations. In this regard, throughout 2020, this body supported the definition and drafting of 28 corporate documents of different nature (technical, general, environmental, administrative, human resources, procurement, and quality).

04.

CLOSING THE ITALIAN NUCLEAR FUEL CYCLE

NUCLEAR DECOMMISSIONING

Clearing the areas previously occupied by nuclear sites, freeing them from radiological restrictions and returning them to the community require closing the Italian nuclear cycle, by adopting a complex program of decommissioning (dismantlement) and safe storage of radioactive waste.
By choosing to halt the production of nuclear energy in 1987, Italy was among the first countries worldwide to face nuclear decommissioning.
Further information on the history of decommissioning in Italy Is available on sogin.it (decommissioning section).
The decommissioning of a nuclear power plant is the last stage of its life cycle, following construction and operation.

Safe plants maintenance: Fuel removal and plants radiological characterisation / Dismantlement of systems and components/Radioactive materials and waste management/Premise decontamination/ Building demolition/ Radiological characterisation of the site

The decommissioning procedure is an engineering challenge since the Italian nuclear power plants, differing one to one to another, were designed without considering the need to dismantle them at the end of their lifecycle. This requires a complex planning to implement decommissioning programs in parallel and to develop specific technology solutions, also prototypes, non-replicable on an industrial scale. The demolition of the power plant, the conditioning and storage of radioactive waste in interim storage facilities - to be later transferred to the National Repository - turn the land to the stage of "brown field".
After shipping the radioactive waste to the National Repository, the Interim storage facilities are dismantled. At this stage, after having verified that no radiological risks are present, the brown field becomes a "green field" and the site can be reused by the community.

The overall decommissioning plan of Italian nuclear power plants was reviewed by the International Atomic Energy Agency (IAEA) in 2017. In its report, the Agency stressed the "strong" approach of Sogin's decommissioning programs, in line with the best international practices. In 2018, the Agency conducted a Technical Review on Sogin's projects related to the dismantlement of the reactor (vessel and internals) in the nuclear power plants of Trino and Garigliano. The overall Decommissioning and material and waste management was analysed and presented to the Agency during a specific exchange activity with other international bodies held In June 2019.
This exchange showed that Sogin adopts circular economy principles throughout its decommissioning operations; therefore, it can be considered one of the most advanced nuclear operators at an international level.
Thanks to the experience and competencies acquired over the last twenty years of operations, Sogin is now able to identify the best technological solutions to carry out the nuclear decommissioning and radioactive waste management operations safely.

CIRCULAR ECONOMY

While performing nuclear power plants' decommissioning and safe maintenance activities, Sogin has constantly committed to minimising produced waste and maximising the recovery of materials.

DRIVER

Sogin circular economy strategy for nuclear decommissioning encompasses three main drivers:

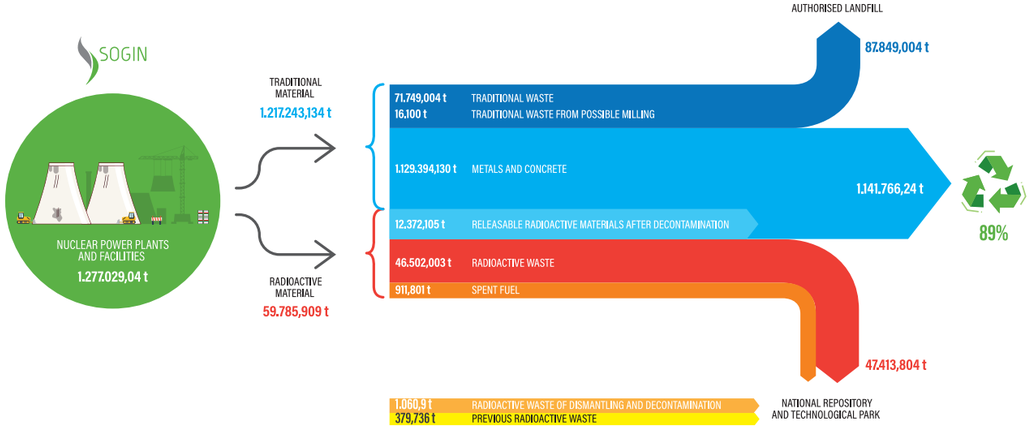
1. Reusing structures, systems, and components

Safe maintenance, radioactive waste management and nuclear decommissioning activities, are performed by Sogin in the same industrial area of the plants. Despite some management and operation difficulties, this allows to reset the consumption of soil while avoiding an alteration of biodiversity in these areas. For example, some areas of the turbine buildings of Caorso and Garigliano nuclear power plants, were intended for building new material and waste management facilities. This choice led to a reduction in radioactive and conventional waste produced, in the need of building new structures, and, thus, of using new raw materials; it also led to a greater integration between the material treatment process and the decommissioning operations implemented in the nuclear island. Such integration strongly reduces workers' radiation exposure, potential contamination risks and, consequently, environmental impacts.

2. Recycling materials

Once separated from radioactive substances, materials such as copper, iron and concrete, are reused or sent for recovery. This happened with the dismantling of Caorso Off-gas Building or with Garigliano Trenches. In the first case, the demolition of civil infrastructures of the Off-Gas building in Caorso nuclear plant, previously hosting waste gas treatment systems, resulted in approx. 7,000 tons of (non-radioactive) concrete. Such material was partly re-used to fill the excavations resulted from the dismantling of the underground systems (former hold-up) adjacent to the building. In the second case, the materials resulted from the removal of the radioactive waste buried in the trenches were reused to refill the voids left in the excavations. In both cases, before their reuse, the materials have undergone radiological checks to assess their compliance with the release restrictions. In other cases, the materials resulted from the dismantling operations are sent for recovery and manufacturing facilities to be later reinserted in the production chain. Overall, the decommissioning of the eight sites will allow the recycling of more than one million tons of materials, equal to about 89% of total dismantled materials.

3. Reducing the environmental impact



The dismantling of nuclear power plants and facilities involves decontamination techniques and treatment of radioactive materials to significantly reduce the production of radioactive waste and the exploitation of raw materials. As for the primary circuit of Trino nuclear power plant, for example, a detailed plan of radiological characterisation was designed to use decontamination procedures to minimise radioactive waste. In this way, the remaining materials will be treated as recoverable conventional waste.

Sogin's circular economy strategy obtained the favourable opinion of the International Atomic Agency (IAEA) in a report published in 2019. According to the Agency: *"Compared to other companies of the same sector, Sogin reached advanced knowledge on aspects related to sustainability and circular economy, bringing a sustainable development model designed to clear the land from radiological restrictions, and improving the economic, social and environmental development of the land".*

GREEN ENGINEERING E GREEN PUBLIC PROCUREMENT

The full implementation of the actions provided for by the 3 drivers can be achieved by means of green engineering and green public procurement policies.
In all its operations, Sogin has always paid the utmost attention to the adoption of controlled technological production processes, aimed at minimising the overall environmental impacts and related risks. With new technological advances and for a wider optimisation of decommissioning and waste management processes (no longer on each site but across sites), it is possible to further improve the engineering approach for a better implementation of green engineering.
This includes the design of a modular plant, the modular waste conditioning system (SiCoMoR), transportable in ISO containers, which transforms the installation of a radioactive waste management plant into a service. This results in an optimisation of the implementation and subsequent use of the technological systems and the amount of waste produced by dismantling.
As far as green procurement is concerned, discussed in detail in the chapter dedicated to suppliers, Sogin has decided to apply the principles of CAM (Minimum Environmental Criteria) for all contracts, although not strictly bound by regulations for certain cases. Their systematic and homogeneous application also allows to increase the involvement and commitment of contractors in the CIRCULAR ECONOMY process.
In order to guarantee the presence of subjects that are qualitatively adequate to carry out decommissioning activities, Sogin has also equipped itself with a qualification system that requires the economic operators concerned to possess UNI EN ISO 14001 certification, EMAS registration or other equivalent documentation attesting the adoption of an Environmental Management System.

WASTE MANAGEMENT

During the lifecycle of a nuclear power plant, that includes the operation period and the decommissioning stage, two main types of waste are produced:

- Radioactive waste, with a radiological content, that is classified according to categories according to the concentration of radionuclides and the radioactivity decay time;
- Conventional waste, resulting from standard industrial processes, which, in turn, is divided into several categories (i.e., hazardous, special waste, etc.).

Both types of waste are involved in an integrated management system designed to reduce the volume of radioactive and non-radioactive waste to be sent for disposal. This reduction enhances the overall sustainability of the energy cycle resulting from nuclear sources, and to acquire business knowledge and competencies to optimise queue management in every energy system at a national level.

AIGOR SOFTWARE

In 2019, Sogin developed AIGOR (IT Radioactive Objects Management System), which enables the extension of the stringent procedures adopted in the radioactive waste management to any sources and materials, including releasable ones, which account for previously produced materials, or those that will result from future nuclear decommissioning activities.

The purpose of this new software is to optimise the management of materials, by accurately monitoring all the adopted procedures and their outcomes (i.e., final volumes and related radioactivity), or checking the progress of the management procedures related to each kind of waste. The detailed analysis carried out by AIGOR on the management of radioactive waste will allow reducing the volume of the waste produced by nuclear decommissioning ranging between 5% and 10%, with consequent improvement of the storage capacity.

The development of AIGOR software is part of a wider review of the corporate processes for waste and radioactive waste management, which provides for the adoption of innovative systems to reduce the risks connected to the data related to the human factor.
The software is connected to the material and waste management and treatment systems, positioning systems and traceability systems for waste, radioactive waste and sources of ionising radiation (STRIMS) belonging to ISIN.

To update the information contained in the software, Sogin has adopted a permission-less validation mechanism based on the public blockchain. This ensures the integrity of data and processes, and the safety of information, to create a database available to future generations.
The development of AIGOR is part of a continuous improvement in the planning and control of the treatment, conditioning, characterisation and storage of radioactive waste and materials, as well as in the assessment of the overall management performance, in line with the principles of circular economy.

RADIOACTIVE WASTE

The management of radioactive waste in a complex activity which accompanies the entire life-cycle of a nuclear power plant, from the operational stage to Its decommissioning.
The radioactive waste resulted from the decommissioning of nuclear power plants is safely stored in the interim storage facilities of each plant until it is ready to be transferred to the National Repository.
After the gradual transfer of radioactive waste to the National Repository, the interim storage facilities is dismantled, and the "green field" stage is achieved - namely the site has no radiological restrictions.
Radioactive waste is collected and subsequently isolated from the surrounding environment for the time necessary to allow the decay of their radio-activity levels until they are no longer dangerous for the human health and the environment.

RADIOACTIVE WASTE MANAGEMENT INCLUDES SEVERAL OPERATIONS

Characterisation

It entails a series of analysis and measurements to identify the waste chemical, physical and radiological features. This activity has several purposes, according to the different stages of the waste management process:

- First, to define treatment and conditioning modalities;
- Subsequently, to monitor the process;
- Third, to check the correctness of the conditioning and treatment operations carried out on the waste.

Treatment

At this stage, the radioactive waste undergoes specific operations to alter its physical shape and/or chemical composition. The aim of these operations is to reduce the waste volume or to prepare it for the next conditioning stage. The kind of treatment depends on the waste features

Conditioning

After treatment the waste is transformed into a final product (conditioned radioactive waste + container) ready to be moved, stored in the interim storage facility, and lastly transferred to the National Repository. The final product is physically and chemically stable, ensuring isolation of the radionuclides contained in it. Conditioning generally involves a cementation process, through technologically advanced cementitious materials according to the type of waste. Conditioning techniques may vary according to the waste chemical and radiological features.

Storage

After treatment and conditioning, the waste is stored in specific interim storage facilities before its radiological content decays to lower levels, until it is ready to be disposed of in the most appropriate way.

Disposal

The final stage of the radioactive waste management process, in which the radioactive waste is sent to a final storage facility (surface or geological repositories) according to the specific waste radioactivity level.

RADIOACTIVE WASTE CLASSIFICATION

There are several categories of radioactive waste, which correspond to different management procedures, depending on the concentration of radionuclides and the period of radioactivity decay.
The radioactive waste in Italy is classified under the ministerial decree of 7 August 2015 which divides it into 5 categories according to its radioactivity content (short-lived waste, very low-level waste, low level waste, intermediate level waste, high level waste) and its specific disposal solution.
The radioactive waste resulted from the plants' previous operations, safe maintenance activities and dismantling operations is safely stored by Sogin Group in specific interim storage facilities located in each site, to be later sent to the National Repository.

RADIOACTIVE WASTE INVENTORY

The inventory of Sogin's radioactive waste on 31 December 2020 is reported below.
The waste reported in the table are divided into "to be treated", namely the waste that needs to undergo treatment and conditioning before being conferred to the National Repository, and "final products", namely the waste ready to be conferred to the National Repository.

SOGIN INVENTORY OF RADIOACTIVE WASTE AS OF 31.12.2020

Unit of measurement: cubic metres (approximation per cubic metre divided by site and type of waste)

	Short-lived radioactive waste		Very low-level waste		Low-level waste		Intermediate level waste		High level waste		Total		Note
	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019	
Caorso	**0**	**0**	**828**	**781**	**988**	**1.585**	**0**	**0**	**0**	**0**	**1.816**	**2.366**	
Final products	0	0	103	103	8	8	0	0	0	0	111	111	1
To be treated	0	0	725	678	980	1.577	0	0	0	0	1.705	2.255	
Garigliano	**0**	**0**	**1.673**	**1.728**	**1.142**	**1.149**	**90**	**90**	**0**	**0**	**2.905**	**2.967**	
Final products	0	0	55	55	921	921	90	90	0	0	1.066	1.066	2
To be treated	0	0	1.618	1.673	221	228	0	0	0	0	1.839	1.901	
Latina	**0**	**0**	**786**	**868**	**641**	**489**	**422**	**437**	**0**	**0**	**1.849**	**1.794**	
Final products	0	0	18	18	2	1	89	89	0	0	109	108	3
To be treated	0	0	768	850	639	488	333	348	0	0	1.740	1.686	
Trino	**0**	**0**	**989**	**874**	**221**	**202**	**65**	**65**	**0**	**0**	**1.275**	**1.141**	
Final products	0	0	35	48	78	56	3	3	0	0	116	107	4
To be treated	0	0	954	826	143	146	62	62	0	0	1.159	1.034	
Bosco Marengo	**0**	**0**	**172**	**183**	**328**	**329**	**0**	**0**	**0**	**0**	**500**	**512**	
Final products	0	0	164	138	323	321	0	0	0	0	487	459	5
To be treated	0	0	8	45	5	8	0	0	0	0	13	53	
Casaccia	**0**	**0**	**0**	**0**	**3**	**3**	**460**	**248**	**0**	**0**	**463**	**251**	
Final products	0	0	0	0	0	0	0	0	0	0	0	0	6
To be treated	0	0	0	0	3	3	460	248	0	0	463	251	
Saluggia	**0**	**0**	**1.426**	**1.534**	**633**	**891**	**565**	**518**	**0**	**0**	**2.624**	**2.943**	
Final products	0	0	298	276	86	79	34	34	0	0	418	389	7
To be treated	0	0	1.128	1.258	547	812	531	484	0	0	2.206	2.554	
Rotondella	**0**	**0**	**2.657**	**2.810**	**674**	**357**	**194**	**194**	**0**	**0**	**3.525**	**3.361**	
Final products	0	0	882	882	220	220	163	163	0	0	1.265	1.265	8
To be treated	0	0	1.775	1.928	454	137	31	31	0	0	2.260	2.096	
Cemerad	**25**	**204**	**265**	**83**	**244**	**103**	**1**	**0**	**0**	**0**	**535**	**390**	
Final products	0	0	0	0	0	0	0	0	0	0	0	0	9
To be treated	25	204	265	83	244	103	1	0	0	0	535	390	
ISPRA-1	**0**	**0**	**90**	**90**	**3**	**3**	**1**	**0**	**0**	**0**	**94**	**93**	
Final products	0	0	0	0	0	0	0	0	0	0	0	0	10
To be treated	0	0	90	90	3	3	1	0	0	0	94	93	
Total	**25**	**204**	**8.886**	**8.951**	**4.877**	**5.111**	**1.798**	**1.552**	**0**	**0**	**15.586**	**15.818**	
Final products	0	0	1.555	1.520	1.638	1.606	379	379	0	0	3.572	3.505	
To be treated	25	204	7.331	7.431	3.239	3.505	1.419	1.173	0	0	12.014	12.313	

Compared to the previous year, the changes that occurred depend on reclassifications for new radiological characterisations and/or the reassessment of treatments depending on several factors, i.e., the production and management of radioactive waste implemented throughout 2020, which included the following relevant operations:

1. **CAORSO: production of solid waste (i.e., technological materials, debris, waste resulted from cutting) and shipment of casks containing resins abroad for incineration.**
2. **GARIGLIANO: shipment of metallic materials abroad for smelting, shipment of solid waste for super-compaction campaigns to Nucleco, and collection of the overpacks produced by Nucleco over the previous campaigns.**
3. **LATINA: production of solid waste (i.e., technological, metallic materials, soil, wood, concrete debris), collection and repackaging activities to make the waste suitable to subsequent managing activities (i.e., super-compaction), and production of final products made of sludges conditioned in concrete matrixes from the Mud Pit, obtained through the performance of hot tests In Latina's LECO plant (Extraction and Conditioning Facility in Latina).**
4. **TRINO: waste production, collection, and repackaging activity of previous waste; reassessment of the need to retreat previously conditioned waste; waste shipment to Nucleco for super-compaction campaigns and collection of the overpacks produced by Nucleco over the previous campaigns.**
5. **BOSCO MARENGO: production of conditioned waste previously treated in Nucleco; waste from decommissioning activities and shipment to Nucleco for treatment purposes.**
6. **CASACCIA: repackaging of previous waste; production of solid waste from operations; collection of solid intermediate-level waste from Nucleco.**
7. **SALUGGIA: production of conditioned waste previously treated in Nucleco; production of new waste and shipment to Nucleco for treatment purposes.**
8. **ROTONDELLA: repackaging of previous waste; production of waste from maintenance, remediation, and treatment operations (i.e., TAF facility, technological waste, waste resulted from the remediation of Pit 7.1).**
9. **CEMERAD: waste repackaging in overpacks to make it suitable for subsequent management and shipment to external facilities.**
10. **ISPRA-1: repackaging of previous waste and production of waste from management activities.**

Starting from 2019, the inventory also includes the radioactive waste related to the ISPRA-1 site.
The following table reports the inventory of Nucleco's radioactive waste as of 31 December 2020, which includes the waste directly managed by the subsidiary company, the waste resulted from the decommissioning of Casaccia site and industrial, research, medical and health activities. After being treated and conditioned, this waste belongs to ENEA, according to the guidelines of the integrated service, established by the CIPE resolution of 1 March 1985, with the purpose of managing the medical, industrial and research waste produced in the Country.

RADIOACTIVE WASTE STORED IN CASACCIA AND MANAGED BY NUCLECO AS OF 31.12.2020

Unit of measurement: cubic metres

	Short-lived waste	Very low-activity waste	Low activity waste	Intermediate activity waste	High activity waste	Total
Conditioned	0	1.954	2.034	318	0	4.306
Non-conditioned	389	1.253	1.913	149	0	3.704
Transited	0	118	10	0	0	128
Total	**389**	**3.325**	**3.957**	**467**	**0**	**8.138**

The waste produced by Sogin and managed by Nucleco, return to its origin sites after treatment and conditioning. Exception is made for the waste produced in Casaccia, which is stored in Nucleco storage facilities and reported in the inventory of the subsidiary Company.

CONVENTIONAL WASTE

The decommissioning of nuclear plants results in both radioactive and conventional waste: the latter is classified according to an EWC (European Waste Code) which enables a stabilisation of management and transfer processes to licensed bodies, by prioritising waste recovery and final disposal, when it cannot be reused.
In this matter, Sogin along all the stages of the waste production processes, to minimise the production of waste intended for disposal and to maximise the share of waste to be sent for recovery. The Company ensures the traceability of all waste, from dismantling or demolition operations to the recovery or disposal facility.

MANAGEMENT OF NUCLEAR FUEL AND MATERIALS

NUCLEAR SPENT FUEL

The operations of the nuclear power plants and research reactors involve the "burnup" of nuclear fuel resulted from nuclear fusion, namely the interaction between neutrons and the substances contained in the "fresh" fuel which happens in the reactor. This interaction is defined nuclear fission. At the end of its lifecycle the fuel is defined "irradiated" and it contains about 97% of the radioactivity of the nuclear site.
The operation which precedes the most complex decommissioning activities of a nuclear power plant involve performing the dry storage or reprocessing (back-end stage) of the spent fuel after its burnup in the reactor and cooling in the pools. In the first case, the spent fuel is stored within special casks inside the interim storage facilities, and subsequently disposed of in a specific site (Once-through Fuel Cycle). In the second case, instead, the reprocessed spent fuel can be reused in a nuclear power plant (Closed Fuel Cycle).

IRRADIATED FUEL SENT ABROAD

The overall amount of the irradiated nuclear fuel resulted from the operation of the Italian nuclear power plants amounts to about 1,864 tons, 99% of which was sent abroad for reprocessing.
Approximately 913 tons out of the total amount have been reprocessed abroad under the terms of former contracts ratified with Enel, while the remaining nuclear substances have already been transferred. The remaining 951 tons are included under the terms of the reprocessing contracts in force ratified between Sogin, the French Company ORANO (previously AREVA) and the British Company Nuclear Decommissioning Authority (NDA).

NUCLEAR IRRADIATED FUEL SENT ABROAD

Destination	Mass*	Number of elements/Type	Origin	N. of executed shipments
UNITED KINGDOM (Sellafield - Dounreay) 1969-2005**	716,3 t***	50.893 + 19 barrette/ BWR, PWR, MAGNOX	Garigliano, Trino, Latina	102
FRANCE (La Hague) 2007-2015	190,4 t	1.032 + 6 barrette/ BWR	Caorso	16
	16,8 t	▪ 52 cruciform fuel PWR elements Trino ▪ 48 squared fuel PWR elements Trino ▪ 48 BWR semi-rods Garigliano	Avogadro Repository	5
	14,5 t	47 PWR fuel elements of which: ▪ 39 U02 elements ▪ 8 MOX	Trino	2
Total	**938 t**			

*Mass (in tons) of heavy metal before radiation.

**In 2014, the NDA finalised the treatment of the last Sogin fuel batch located in Sellafield, in the UK.

***The reported quantity includes the fuel resulted from Garigliano 19 rods sent to Dounreay (Scotland) by ENEA: the contract was terminated in July 2017 in during the negotiations with the NDA on the agreements for replacement, minimisation and return of residual materials.

NUCLEAR IRRADIATED FUEL MANAGED BY SOGIN STILL LOCATED IN ITALY			
Destination	**Mass**	**Number of elements/Type**	**N. of shipments to be carried out**
FRANCE (La Hague)	13,2 t*	64 fuel elements • 63 MOX BWR Garigliano • 1 square PWR fuel element Trino	3
To be defined	0,115 t**	Rods, pieces, and samples	To be defined
National Repository	1,679 t***	64 Elk River elements (enriched Uranium and Thorium)	To be defined
*Mass (in tons) of heavy metal before radiation.			
**Mass of heavy metal after radiation. Value according to the Euratom report.			
***Mass of heavy metal after radiation. Value according to the Euratom report.			

WASTE RESULTED FROM REPROCESSING

Based on the contracts ratified with the French company ORANO and the English Company NDA, the waste resulted from reprocessing will return to Italy to be temporarily stored in the interim storage area for highly radioactive waste of the National Repository (CSA).
Waste from France. Based on the agreements ratified with ORANO, 16.3 cubic metres of highly radioactive vitrified waste and 50.4 cubic metres of compacted metal waste, net of transport and storage casks, is expected to return to Italy.
Waste from the UK. Following the agreement ratified between Sogin and NDA on 17 July 2017 about the replacement of waste resulted from the reprocessing of Italian fuel in the UK (subject to the guidelines of the Ministry for Economic Development of 10 August 2009), Italy will only receive the highly radioactive vitrified waste with a volume ranging between 18.7 and 20.2 cubic metres, net of the weight of the shipment and storage casks.

IRRADIATED FUEL FROM FUEL CYCLE FACILITIES

The management of fuel cycle facilities, appointed to Sogin in 2003, involved the management of the fuel located in the sites of Casaccia and Rotondella facilities. The current programmes provide for the conferment of the fuel – stored in casks – to the National Repository for the dry storage. Almost all this material consists of 64 Elk River fuel elements of US origin for a total weight of approx. 1.7 tons.

SOGIN NUCLEAR MATERIALS RESULTED FROM REPROCESSING ABROAD

The following table reports the quantities of Uranium and Plutonium recovered from foreign reprocessing facilities and shipped to Sogin.

	NUCLEAR MATERIALS			
	Allocated quantities		**Estimated total quantity at the end of the allocation to UK in case of transfer completion and implementation of reprocessing procedures in FR**	
	Uranium	**Fissile Plutonium**	**Uranium**	**Fissile Plutonium**
	[t]	**[kg]**	**[t]**	**[kg]**
UK (Sellafield)	701	1.074*	701	1.074*
FR (La Hague)	187,6	0**	228	164***
*Total quantities allocated to Sogin by NDA as of the date of allocation.				
**The total quantity of plutonium resulting from the reprocessing of nuclear fuel delivered to France at 31/12/2020 was transferred for valuable consideration based on the agreements ratified between Sogin and ORANO.				
***Quantity calculated as of 31/12/2020 considering the decay based on the Enel figures upon the reactor unloading. The quantity reported in the table corresponds to the estimated quantity of fissile plutonium which ownership was not transferred to ORANO. Figures rounded to the nearest integer value.				

According to the Directive of the Ministry for Productive Activity no. 5023/2006, the fissile materials resulted from the reprocessing in France and the UK should be transferred for valuable consideration.
By divesting the ownership of the fissile plutonium resulted from the operations of fuel reprocessing under the shipment and reprocessing contract, and Creys Malville virtual reprocessing, Sogin no longer holds any fissile plutonium in France.
Among the materials allocated to Sogin after reprocessing in the UK, there are the materials allocated according to the agreements ratified with NDA in 2017 (agreement of "Replacement and Minimisation" and virtual fuel reprocessing in Dounreay) and in 2019 (non-standard virtual fuel reprocessing of Trino and Garigliano).
In February 2019, the NDA communicated to Sogin the availability of all the Uranium and Plutonium recovered from the reprocessing of irradiated nuclear fuel of Trino under the 1974 agreement.

GLOBAL THREAT REDUCTION INITIATIVE

The GTRI (Global Threat Reduction Initiative) was a programme aimed at restoring the control of the US government on some sensitive nuclear materials that were previously exported to several Countries for industrial (energy production) or research purposes to avoid their use in possible terrorist attacks.
These materials include the plutonium-based materials or the high-enriched uranium which were safely within three Italian facilities: EUREX in Saluggia, IPU and OPEC in Casaccia and ITREC in Rotondella.
Italy has, therefore, joined the GTRI programme to implement the functional decommissioning of nuclear power plants. The clearance of nuclear materials stored on the national territory ended in 2014.
To reach this outcome, GTRI and Sogin have overcome technical challenges, such as the coordination of transports and the development of new plutonium repackaging gloveboxes and a new process to turn high-enriched uranium from a solution into an oxide.

PLANTS AND FACILITIES UNDER DECOMMISSIONING

Trino nuclear power plant (VC)

During its operations, the “Enrico Fermi” Nuclear Power Plant in Trino reached the best performance standard among all the Italian plants. It was also the first Italian experience in the nuclear sector.

EUREX (Enriched URanium Extraction) Plant in Saluggia (VC)

The EUREX facility performed research activities on the reprocessing of irradiated nuclear fuel to separate reusable fissile materials.

Bosco Marengo (Fabbricazioni Nucleari) Nuclear Fabrications plant (AL)

During its operations, the Bosco Marengo Nuclear Fabrications Plant produced the fuel elements intended for Italian and foreign nuclear power plants.

Caorso Nuclear Power Plant (PC)

Caorso nuclear power plant was the largest operating plant in our Country. Despite its short operational period, from 1981 to 1986, the plant produced more than 29 billion kWh.

Casaccia OPEC and IPU plants (RM)

The OPEC-1, located within the Casaccia Research Centre, was the first Italian plant to conduct post-irradiation research and analysis activities on nuclear fuel elements.

Garigliano Nuclear Power Plant (CE)

Garigliano nuclear power plant of Sessa Aurunca was the first BWR (Boiling Water Reactor) operating in Europe. Like Trino and Latina, this nuclear power plant belongs to the first generation of nuclear power plants.

ISPRA-1 Reactor (VA)

The ISPRA-1, the latest version of the Chicago-Pile 5 developed by Enrico Fermi, was the first Italian nuclear reactor used for research.

Latina Nuclear Power Plant

When it became operational in 1964, the Latina nuclear power plant was the most powerful facility in Europe. Equipped with an English GCR-Magnox graphite-gas technology reactor, the facility belongs to the first generation of nuclear power plants.

Rotondella ITREC Plant (MT)

Between 1968 and 1970, the ITREC Plant of Rotondella received 84 Uranium-Thorium irradiated fuel elements from the Elk River (Minnesota) experimental reactor.

TRINO NUCLEAR POWER PLANT

NO. EMPLOYEES (2020)	AMOUNT OF RADIOACTIVE WASTE ON SITE (m^3)	DECOMMISSIONING STARTING DATE	ACHIEVEMENT OF THE BROWNFIELD	BROWNFIELD ACHIEVEMENT VALUE (EUR/MILLION)
70	1.275	1999	2029	245

HISTORY AND IMPLEMENTED ACTIVITIES

Trino nuclear power plant "Enrico Fermi" was built by a business consortium headed by Edison. Its construction started in 1961. After three years, in 1964, the nuclear plant started producing electric power. The facility, equipped with a PWR (Pressurised Water Reactor), had a power of 270 MWe and recorded an overall production of 26 billion kWh of electric power in 1987. Following the referendum on nuclear power, the power plant was halted, and in 1999, Sogin acquired the ownership of the facility to carry out Its decommissioning.

The decommissioning activities implemented in the site so far include the demolition of the auxiliary cooling towers, the decontamination of the steam generators, the dismantling of the buildings of the emergency diesel generators, the removal of the barrier on the Po River, the dismantle of the components of the turbine building, plants adaptation within the turbine buildings to carry out the dismantling of the plants, the implementation of a control station for material management and the removal of uncontaminated systems and components in the controlled area. Asbestos was also removed from the vessel's upper section, and further preliminary activities were carried out to prepare dismantling operations (i.e., design for radiological characterisation, insulation of the emergency flooding tanks).
The "Test Tank" premise was adapted to an interim storage facility for radioactive waste and part of the waste located on the storage facilities were moved to the test tank to carry out adaptation and safety operations.
The Company has also launched a repackaging and super-compaction campaign on previous radioactive waste, and the mock-up tests for the treatment of resins have been carried out. Moreover, the Radwaste Disposal premises were emptied from the contaminated components to make room for the WOX plant.

The irradiated fuel resulted from the operations of Trino power plant (487 elements) was shipped abroad to be gradually reprocessed. The waste resulted from reprocessing will return to Italy after being conditioned in a glass matrix to be temporarily conferred to the National Repository.

ONGOING PROJECTS AND ACTIVITIES

In 2020, Sogin completed the final project to dismantle the primary vessel system, which allowed cooling the reactor during the plant's operations.
Moreover, the preliminary activities for opening the vessel and the preliminary works to allow the flooding of the pool located on the vessel continued.
For radiological protection purposes, the vessel dismantling operations will be carried out under water heads. Therefore, the previous flooding plants and systems need to be restored.
The removal of "activated" components from the purifiers pool was launched during the year. The waste consists of chips and pieces resulting from the cutting operations of the reactor's thermal screen conducted during the plant's operations. After removing the debris from the bottom of the pool, it will be moved to the nuclear fuel pool. After the pool emptying and remediation, the auxiliary building will be adapted to install a cementation station for the radioactive waste resulted from the site decommissioning.
Within the framework of the partial dismantlement of the turbine building - which envisages operations to lower the structure from 27 to 8 metres – the Company completed the procedures to move the high and medium voltage transformers and carried out all tests successfully.

During its operations, the "Enrico Fermi" Nuclear Power Plant in Trino reached the best performance standard among all the Italian plants. It was also the first Italian experience in the nuclear sector.

#SOGINSOSTENIBILE

METAL MELTING

Metal melting can be defined as the decontamination process used on the metals collected during the dismantling operations; this strategic process has a double result: it decontaminates the materials and it significantly minimises the amount of final waste to store in the plant's interim storage facilities. More specifically, the melting procedure is used with the metallic materials resulted from the dismantling operations of primary and auxiliary systems, as well as those collected from all the support systems of the nuclear island (i.e., pools, radioactive liquid and gas treatment systems, maintenance instruments, etc.).
The melting procedure results in contaminated metal ingots and metal scraps which contain most of the radioactivity of the overall materials sent for treatment. Due to the lack of Italian foundries authorised for the treatment of radioactive metallic materials, the melting procedure is carried out abroad. Foundries only treat the materials that comply with their acceptability requirements, including those with both radiological and physical-chemical features (i.e., foundries refuse to treat materials containing organic substances, asbestos, or rubber).

The products sent for melting include:

- **Recyclable materials:** ingots that can be recycled in the Country in which the foundry is located;
- **Non-recyclable materials**: the estimated overall quantity of non-recyclable materials equals 1 cubic metre per 10,000 kg melted materials. These materials are returned to Sogin. They include non-releasable ingots free of radiological restraints in the country where the foundry is located; secondary conditioned waste (such as slags, powders, refractories).

In 2018, Sogin developed the executive project for this main decommissioning operation involving dismantling the primary circuit and its auxiliary components. The works will be launched after the authorisation of the Supervisory Body, which has received relevant documents throughout 2020.

CIRCULAR ECONOMY

TOTAL MATERIALS
214.315 t

CONVENTIONAL WASTE
METAL AND CONCRETE SCRAPS
RADIOACTIVE MATERIALS

93%

MATERIAL SENT FOR RECOVERY, RECYCLING AND REUSE

Overall, the dismantling operations of Trino power plant will result in approx. 214,000 tons of materials. About 198,000 tons (approx. 93%) – primarily metals and concrete – will be sent for recovery.

MAIN AUTHORISATIONS OBTAINED

	AUTHORISING/APPROVING BODY
Approval of the new "Operational regulations and staff chart" of the nuclear power plant, pursuant to Article 46 of Legislative Decree no. 230/1995 and subsequent amendments and integrations	ISIN
Approval of the activities not included in the Decommissioning Plan and Operational Plan "Partial Demolition of the Engine Room (Turbine Building)"	ISIN
Approval of the characterisation plan for the reactor building	ISIN
Approval of the Characterisation Plan for the materials resulting from the TSBA and T12A voltage transformers transfer needed to proceed to the demolition of the turbine building	ISIN
Approval of the Detailed Project to implement the WOX (pre-treatment and treatment) facility for spent ion exchange resins	ISIN
Authorisation for the treatment of radioactive casks (Survey and safe maintenance of 1 cubic metre casks of cemented resins)	ISIN

CAORSO NUCLEAR POWER PLANT

NO. EMPLOYEES (2020)	AMOUNT OF RADIOACTIVE WASTE ON SITE (m^3)	DECOMMISSIONING STARTING DATE	ACHIEVEMENT OF THE BROWNFIELD	BROWNFIELD ACHIEVEMENT VALUE (EUR/MILLION)
101	1.816	1999	2031	350

HISTORY AND IMPLEMENTED ACTIVITIES

Caorso nuclear power plant was designed and built in the early Seventies by Enel, Ansaldo Meccanica Nucleare and GETSCO pool of companies. The BWR (Boiling Water Reactor) plant, with a capacity of 860 MW, belongs to the second generation of nuclear plants. it started operating in December 1981 and was halted in October 1986. In 1999, Sogin acquired the ownership of the nuclear power plant to launch decommissioning operations.

The most relevant decommissioning activities carried out in Caorso include: the removal of turbines, turboalternator and all the components and systems of the thermal cycle located in the turbine building. A Material Management Station was installed in the area resulted from the dismantling operations; this facility is used to cut, decontaminate, and perform the radiological check of metallic materials. The metal stack of the Off-Gas plant the RHR (Residual Heat Removal) auxiliary cooling towers that used to contain the security systems required to remove residual heat in case of shutdown of the reactor were removed. High-level components and systems located in the reactor building were also decontaminated.
The two interim low-level storage facilities of the site have been adapted to comply with new security standards and works were carried out to adapt the turbine building into a "buffer" storage and waste treatment area. Moreover, the super-compaction system has been successfully tested.

The 1,032 elements of irradiated fuel of Caorso nuclear power plant have been shipped to France for reprocessing between 2007 and 2010. The waste resulted from reprocessing operations will return to Italy and will be temporarily conferred to the National Repository.

ONGOING PROJECTS AND ACTIVITIES

Over 2020, adaptation works on the systems of the turbine building - containing the Material Management Station - for the creation of an interim storage facility for radioactive waste ("buffer" areas), needed to host the waste while the two temporary storage facilities of the site undergo renovation works have continued. The supply for the Waste Treatment Station was completed, and four bridge cranes have been installed.
In December 2020, the Company opened a construction site to implement the Waste Route, which connects the turbine building with the reactor and the auxiliary buildings and will allow the safe transfer of produced materials during the dismantling operations in the reactor.
A call for tender was also opened to contract a tenderer to dismantle systems and components in the reactor.

In 2020, following the approval to temporarily store the radioactive casks contained in ISO containers stored in storage facility no. 1 issued by ISIN, the Company completed the emptying procedures and the radiological characterisation of the storage facility; it also provided accessible areas to launch the adaptation works. In the last three months of 2020, the verification of the final adaptation project for storage facility no. 3 – containing intermediate-level waste - was completed, and the contract started.
As for the safe site maintenance, the cooling groups of the ventilation systems V40 and V41 and the Area Radiation Monitors of the plant were replaced.

Caorso nuclear power plant was the largest operating plant in our Country. Despite its short operational period, from 1981 to 1986, the plant produced more than 29 billion kWh.

#SOGINSOSTENIBILE

TREATMENT OF RADIOACTIVE RESINS AND SLUDGES

Over 2020, the shipment of radioactive resins and sludges to Bohunice (Slovakia) has continued. Despite the general slowdown connected to the Covid-19 emergency, 11 shipping procedures have been completed, accounting for 2,066 radioactive tanks delivered abroad. The waste treated in Bohunice undergoes incineration and conditioning operations, resulting in 90% reduction in volume. The ashes resulted from the treatment are conditioned in pods and incorporated in a cement matrix in 440-litres stainless-steel tanks. After treatment and conditioning, all waste will return to Caorso to be temporarily stored in the interim facilities. In 2020, the resins that are subject to preliminary treatment equal to approx. 92 tons, 68 out of which already underwent incineration and resulted in 7 final products. The shipment of resins and sludges, accounting for approx. 70% of the waste currently stored in Caorso, will allow emptying the three interim repositories to complete their adaptation to the new safety standards, thus avoiding the construction of new storage facilities.

CIRCULAR ECONOMY

TOTAL MATERIALS
322.700 t

CONVENTIONAL WASTE
METAL AND CONCRETE SCRAPS
RADIOACTIVE MATERIALS

94%

MATERIAL SENT FOR RECOVERY, RECYCLING AND REUSE

Overall, the dismantling operations of Caorso power plant will result in approx. 322,000 tons of materials. About 300,000 tons out of the total (94%) – mostly metal and concrete scraps - will be sent for recovery.

MAIN AUTHORISATIONS OBTAINED

	AUTHORISING/APPROVING BODY
Approval of the Detailed Project to create a confined communication route (Waste Route) between the reactor and the turbine building	ISIN
Authorisation for the shipment of radioactive waste from Italy to the Slovak Republic, pursuant to 2006/117 / Euratom Directive of 20.11.2006 – request no. 2020/4070	MiSE
Approval of the Detailed Project to adapt the ERSBA 2 temporary storage facility for radioactive waste	ISIN

LATINA NUCLEAR POWER PLANT

NO. EMPLOYEES (2020)	AMOUNT OF RADIOACTIVE WASTE ON SITE (m^3)	DECOMMISSIONING STARTING DATE	ACHIEVEMENT OF THE BROWNFIELD	BROWNFIELD ACHIEVEMENT VALUE (EUR/MILLION)
90	1.849	1999	2027	313

HISTORY AND IMPLEMENTED ACTIVITIES

Latina nuclear power plant - a first-generation nuclear facility - was the first built in Italy. The construction of this nuclear plant started in 1958 under the Company Eni. In 1963, the nuclear plant started producing energy, with a total power of 210 MWe MWe. The plant was halted in 1987. In 1999, Sogin acquired the ownership of the plant to implement its decommissioning.

The main decommissioning activities implemented in Latina power plant involve the decommissioning of the fuel handling and loading system; the removal of the lower and upper pipes of the primary circuit in the reactor building; the nearly complete remediation of spent fuel pools; the demolition of the blower rooms and emergency diesel.
The new interim storage facility for radioactive waste was implemented between 2009 and 2014. The facility started operating in 2018. The LECO facility (Latina Extraction and Conditioning) - facility designed for the extraction and conditioning in cementitious matrixes of the radioactive sludges generated by the active effluent treatment facilities – was implemented between 2009 and 2017. In 2017, the remediation works on the KCFC pit were concluded, the removed materials mainly consisted in concrete tanks containing the filters previously used for the treatment of the water of the fuel pool.

The 125,036 irradiated fuel elements of Latina power plant were shipped to the UK for reprocessing Shipments were finalised in the early Nineties. The scraps resulting from reprocessing will return to Italy to be temporarily stored in the National Repository.

ONGOING PROJECTS AND ACTIVITIES

Outside the reactor, six boilers served to produce the steam that moved the turbines to produce electricity while the facility was operating. In 2020, the boilers cases were removed. These cases consist of reinforced concrete structures intended to cover the pipelines connecting the boilers with the reactor (learn more in #SoginSostenibile).

As for the Material management facility, works have continued throughout 2020, and almost all engineering and structural works have been completed. The Facility will enable to treat slightly contaminated metallic materials resulting from the dismantling of the six boilers (more than 3,600 tons of waste) or other waste resulting from the dismantling of the treatment plant for liquid effluents (approx. 20 tons) and the remediation of the premises of the reactor (approx. 130 tons).

In 2020, the new basement and storage tanks for the implementation of the Active Effluents Treatment Plant (ITEA) were completed. The effluents to be treated come from the decontamination of the components of decommissioning operations and the washing of PPE. The ITEA facility will be implemented in the area adjacent to the building hosting the current active effluents plant, which will be subsequently dismantled. During the previous year, the removal of the old active effluents line (including the safe maintenance of excavations and foundations) was also started.

Moreover, during the year, the waterproofing works to ensure full protection of soil and groundwater were completed, and the surveys for radiological characterisation of the areas included within the protective fence of the site continued. Similarly, the encapsulation, removal, and remediation operations on the materials containing asbestos were also completed.

The Latina nuclear power plant started operating in 1964. At that time, it was the most extensive and more powerful facility in Europe. It is a first-generation nuclear facility equipped with an English reactor with GCR-Magnox graphite-gas technology.

#SOGINSOSTENIBILE
DEMOLITION OF THE BOILERS CASES

In August, the Company launched the works for the demolition of the screens outside the building reactor. The operations ended in October 2020. Each screen consisted of two parts: one upper horizontal element, connected to the building reactor, of approx. 145 tons and a lower vertical piece of 50 tons, exiting from the boiler. To remove them, Sogin adopted controlled demolition with above-ground cutting (50 metres high) through a diamond cutting disc. After the cut, each block was placed on the ground and moved to an area equipped to separate the iron from the concrete.
The engineering solution adopted ensured the safe performance of works and the lowest structural and environmental impact in terms of the production of powders. The works resulted in approx. 1,200 tons of materials, which will be sent for recovery after the performance of radiological checks.
The screen demolition allowed increasing the seismic safety of the reactor building, and it is a fundamental step in decommissioning the Latina nuclear power plant.

CIRCULAR ECONOMY

TOTAL MATERIALS
319.560 t

CONVENTIONAL WASTE
METAL AND CONCRETE SCRAPS
RADIOACTIVE MATERIALS

93%

MATERIAL SENT FOR RECOVERY, RECYCLING AND REUSE

Overall, the dismantling operations of the Latina power plant will result in approx. 319,000 tons of materials. About 297,000 tons out of the total (93%) – mostly metal and concrete scraps - will be sent for recovery.

MAIN AUTHORISATIONS OBTAINED

	AUTHORISING/APPROVING BODY
SUAP Authorisation for the substantial change of the Single Environmental Authorisation for the decommissioning of the nuclear power plant	Municipality
Authorisation to execute the operations for accelerated deactivation (Stage 1), pursuant to Article 55 of Legislative Decree no. 230/1995 and subsequent amendments and integrations and Article 24, par. 4, of Legislative Decree no. 1 of 24 January 2012 as converted, with amendments of Law no. 27 of 24 March 2012	MiSE
Approval of the Qualification Plan and Program for the conditioning of radioactive liquids resulted from the previous super-compaction of technological waste	ISIN
Authorisation to remove the reinforced concrete screens in the upper pipelines of the primary circuit	ISIN

GARIGLIANO NUCLEAR POWER PLANT

NO. EMPLOYEES (2020)	AMOUNT OF RADIOACTIVE WASTE ON SITE (m^3)	DECOMMISSIONING STARTING DATE	ACHIEVEMENT OF THE BROWNFIELD	BROWNFIELD ACHIEVEMENT VALUE (EUR/MILLION)
62	2.905	1999	2026	360

HISTORY AND IMPLEMENTED ACTIVITIES

Garigliano nuclear power plant - designed by the engineer Riccardo Morandi - was built in four years (1959-1963) by SENN, National Electro-nuclear Company, and started producing electric energy in 1964. The plant, equipped with a BWR (Boiling Water Reactor), belongs to the first generation of nuclear plants, with an electric capacity equal to 160 MWe. The plant's operations continued until 1978, with a total energy production of 12.5 billion kW/h. In 1999, Sogin acquired the ownership of Garigliano nuclear power plant to carry out its decommissioning.

The main decommissioning activities in Garigliano involved the removal of asbestos from the turbine and reactor buildings, the remediation of two out of three areas – called trenches – where very low-level radioactive materials were previously buried, the implementation of the new Interim Repository D1 and the adaptation of the building of the emergency ex diesel plant into a repository. Recently, the Company completed the dismantlement of the old building and treatment plants of the radioactive semi-liquid waste treatment facility (GECO) and part of the old treatment plant for liquid effluents (Radwaste) to leave room for a new treatment plant. The decontamination and dismantling works of the 95-metre stack were finalised and a new stack replaced the old structure. In the turbine building, the dismantling of the rotor and the stator of the turbine alternator was completed, thus finalising the operations on the most significant component of the thermal cycle.

The 523 irradiated fuel elements of Garigliano have been gradually cleared from the plant. Thanks to the clearance operations, which ended in 1987, most of the elements were sent to the UK for reprocessing. The remaining part was shipped to the Avogadro Repository in Saluggia and will be reprocessed in France.

ONGOING PROJECTS AND ACTIVITIES

In 2020, the feasibility study to dismantle the **reactor building** – the most complex decommissioning activity from an engineering and operational perspective - was launched. Other preliminary activities for the reactor dismantlement – such as the restoration and testing of the auxiliary systems – and the preliminary project to restore the pool water recirculation and filtration were completed.
Preliminary activities to complete the dismantling of the thermal cycle are currently in progress in the turbine building; the operations mainly concern the installations located in the "control floor" of the **turbine building**. This structure houses the station to treat the materials resulted from reactor dismantling operations. A cutting machine for big metal components and a sandblast cabinet have been installed for this purpose during 2020.
In 2019, the Company launched the remediation works of the last **trench** (trench no. 1) with the delimitation and coverage of the area, the radiological analysis and monitoring. After the preliminary activities, in 2020, the Company removed the surface soil of the area. This uncontaminated soil will be subsequently used to fill the excavations. In the same year, the Company also recovered the buried radioactive waste – mostly consisting of materials and PPE used during the plant operations. The waste was safely stored in the D1 Repository and will be sent to Nucleco for super-compaction at the end of the characterisation activities.
As far as the **new system to treat radioactive liquid effluents** is concerned, the Company completed the containment systems for the new tanks; it almost completed the installation of electric and special systems and launched the execution of the new control system and the waterproofing of the buildings. Moreover, the Company installed the new tanks and started assembling the supporting metal structures. Finally, by casting the roof coverage, the Company made the last step to realise the building that will host the new treatment system (Radwaste). The implementation of this facility required to divest the Restitution Work on which a covering tensile structure was implemented to ensure protection from weather events before starting the remediation actions.

Garigliano nuclear power plant of Sessa Aurunca was the first BWR (Boiling Water Reactor) operating in Europe. Like Trino and Latina, this nuclear power plant belongs to the first generation of nuclear power plants.

#SOGINSOSTENIBILE

RADIACTIVE METALLIC WASTE: SHIPMENT AND TREATMENT

Throughout 2020, the Ministry for Economic Development (MiSE) issued the authorisation to transport metallic radioactive materials to the Swedish treatment plant of Cyclife Sweden AB - EDF (Electricité de France) Group – to carry out the smelting procedures.
The process has two objectives: metal decontamination and recovery, aimed at reintroducing the waste in the production cycle and reducing its volume - up to 4% of the original volume -, to be subsequently stored in the temporary storage facility of the site.
In 2020, the Garigliano facility carried out three shipments of IP2 ISO-containers filled with contaminated materials resulted from decommissioning activities, equalling to a total amount of 180 tons of low-level metallic waste.
The remaining waste will be gradually shipped outside of the site by 2021 according to the plant's decommissioning stages. The smelting procedure is expected to start from 2022.

CIRCULAR ECONOMY

TOTAL MATERIALS
268.150 t

CONVENTIONAL WASTE
METAL AND CONCRETE SCRAPS
RADIOACTIVE MATERIALS

96%

MATERIAL SENT FOR RECOVERY, RECYCLING AND REUSE

Overall, the dismantling operations of Latina power plant will result in approx. 268,000 tons of materials. About 258,000 tons out of the total (96%) – mostly metal and concrete scraps - will be sent for recovery.

MAIN AUTHORISATIONS OBTAINED

	AUTHORISING/APPROVING BODY
Authorisation to remove the overburden of Trench 1	ISIN
Approval of the radiological verification Plan to clear the site from the materials resulted from the restoration and adaptation of the auxiliary systems in the reactor building	ISIN
Approval of the Technical Report concerning the treatment of disused equipment recovered from L34 and L42 premises of the Reactor Building	ISIN
Approval of the Deactivation Project no. 3 "Dismantlement of the Reactor Building" pursuant to Art. 2, par. 1, lett. B), MiSE Ministerial Decree of 28/09/2012	ISIN
Authorisation to transport metallic radioactive materials to the Swedish treatment plant of Cyclife Sweden AB to carry out the smelting procedure (resolution no. 88586/18 – 2006/117/Euratom Directive - EU Council of 20.11.2006)	MiSE

BOSCO MARENGO FN PLANT

NO. EMPLOYEES (2020)	AMOUNT OF RADIOACTIVE WASTE ON SITE (m^3)	DECOMMISSIONING STARTING DATE	ACHIEVEMENT OF THE BROWNFIELD	BROWNFIELD ACHIEVEMENT VALUE (EUR/MILLION)
35	500	2005	2021	37

HISTORY AND IMPLEMENTED ACTIVITIES

The operations of the Bosco Marengo (Fabbricazioni Nucleari) Nuclear Fabrications plant started in 1973. The facility worked in the production of fuel elements to supply Italian and foreign nuclear plants.
Since 1987, after the closing of the nuclear programme in Italy, the plant has gradually switched its production to advanced ceramic products. In 2005, Sogin acquired the plant to carry out its decommissioning.

Main decommissioning operations carried out so far have involved the decontamination and dismantling of the fuel production plant, the "heart" of the plant during its operation period. Moreover, the auxiliary systems have been dismantled (namely, ventilation system, decontamination tank and the drainage systems for radioactive liquid effluents) and adaptation of the fireproofing system was completed, with the implementation of a new water reservoir which allowed increasing, for more than 1,000 cubic metres, the quantity of stored water.

The fuel resulted from Bosco Marengo previous operations was shipped abroad for reprocessing. When the operations were halted, the plant housed approx. 112 tons of nuclear fuel.

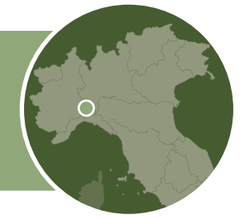
ONGOING PROJECTS AND ACTIVITIES

As for the adaptation of premise B106 into a temporary repository, in 2020 the Company completed its tests on civil structures and plant systems (electric, ventilation, draining, etc.). Once all functional and joint tests will be completed, the Company will carry out the investigation to obtain the Operating Licence to use the B106 Premise as a temporary repository to store all the radioactive waste of the site before conferring it to the National Repository.

The solid radioactive waste treatment program has continued during 2020. Most of this waste was already shipped to Nucleco to be reduced in volume through super-compaction, and be subsequently conditioned.

As for the treatment and conditioning of liquid radioactive waste, during 2020 and upon the request of the Control Authority, Sogin launched studies and analyses on the radiological content of liquid waste. Moreover, in December 2020, ISIN submitted some requests for clarification to the Company; said requests covered the transportation, treatment and conditioning operations to carry out on liquid radioactive waste according to the Executive Plan submitted by the Company in 2019.

During its operations, the Bosco Marengo Nuclear Fabrications Plant produced the fuel elements intended for Italian and foreign nuclear power plants.



#SOGINSOSTENIBILE
SOLID RADIOACTIVE WASTE TREATMENT

Bosco Marengo decommissioning program involves treating and conditioning the solid radioactive waste contained in tanks in Nucleco's plants. These actions are to reduce the volume of waste through super-compaction and incorporation into a solid and chemically stable matrix, easy to ship, store and dispose of.
Most of the waste has been already shipped to Nucleco. More specifically, from November 2017 to May 2019, 1,436 220-litres tanks have been delivered. The completion of dismantling and characterisation works and the super-compaction of the remaining tanks is expected by 2021. In 2020, 1,151 tanks were super-compacted and temporarily stored in the BLD11 premises.

CIRCULAR ECONOMY

TOTAL MATERIALS
1.567 t

CONVENTIONAL WASTE
METAL AND CONCRETE SCRAPS
RADIOACTIVE MATERIALS

98%

MATERIAL SENT FOR RECOVERY,
RECYCLING AND REUSE

Overall, the dismantling operations of Bosco Marengo will result in approx. 1,567 tons of materials. About 1,531 tons out of the total (98%) – mostly metal and concrete scraps - will be sent for recovery.

MAIN AUTHORISATIONS OBTAINED

	AUTHORISING/APPROVING BODY
Resolution for the approval of the risk analysis, notified under Article 245 of Legislative Decree no. 152/2006 and subsequent amendments and integrations	Municipality
Approval for the transfer of the temporary buffers for solid and liquid radioactive waste from premise A108 to premises A121 and A219	ISIN
"As built" layout compliance report of the B106 Interim Repository in relation to the Detailed Project List of combined and functional tests on the systems of the B106 Interim Repository	ISIN

SALUGGIA EUREX PLANT

NO. EMPLOYEES (2020)	AMOUNT OF RADIOACTIVE WASTE ON SITE (m^3)	DECOMMISSIONING STARTING DATE	ACHIEVEMENT OF THE BROWNFIELD	BROWNFIELD ACHIEVEMENT VALUE (EUR/MILLION)
49	2.624	2003	2035	472

HISTORY AND IMPLEMENTED ACTIVITIES

The EUREX (Enriched URanium Extraction) plant was made operational in 1970 and performed research activities on the reprocessing of irradiated fuels to separate fissile materials for subsequent reuse. The plant operation lasted until 1984. In 2003, Sogin acquired the management of the plant to carry out its decommissioning.

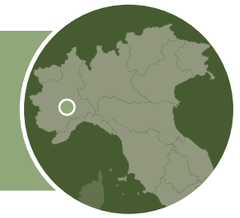
One of the main decommissioning operations carried out so far involved the emptying and remediation of the pool that, during the site operation, contained the fuel elements to be sent for reprocessing. This is one of the first experiences of "dry" removal applied to fuel elements in the world.
Moreover, the piezometric tower was dismantled and the new water supply system (NSAI) was operated, after closing and dismantling the old wells intended for protecting the deep groundwater.
In 2018, the new switchgear, created by Sogin to meet the technical requirements of decommissioning operations, was also operated.
As for the safe storage of radioactive waste, the New Tank Facility (NPS), to store high radioactive waste, was built along with a new Interim Repository (D2) for the storage of conditioned solid waste.

The fuel originally located in the pool of the EUREX plant was shipped to the Avogadro Repository in Saluggia in 2007, and subsequently sent to France for reprocessing.
In 2014, the GTRI (Global Threat Reduction Initiative) allowed the repatriation of the US nuclear materials sent to the EUREX plant in the Sixties for research.

ONGOING PROJECTS AND ACTIVITIES

One of the main activities in progress is the creation of the CEMEX (EUREX CEMentation) complex, which will enable the cementation of solvent waste, and the storage of the resulting artifacts. The conditioned artifacts will be stored in the D3 interim Repository attached to the CEMEX plant. For this reason, throughout 2020, the Company completed the structural civil works of the D3 repository. More specifically, the activities involved finishing the walls and the bearing structures of the repository: artifacts handling area, maintenance premise, health physics premises, roof casting and waterproofing.
The dismantling of the UMCP (Manual Plutonium Conversion Unit) continued over 2020, and a testing environment was set up in a "conventional area" and equipped with tools, instruments and a mock-up of the plant to conduct simulations and carry out training courses for the operators. The launch of dismantling activities is bound by the approval of the Executive Plan on behalf of ISIN.
Treatment and conditioning of previous solid radioactive waste also continued to ensure the reduction of the waste volume and make it suitable for the National Repository. The waste includes approx. 135 tons resulted from dismantling operations of the IFEC plant (Fuel Elements Manufacturing Plant), carried out in the Nineties. About 70% of this waste has already undergone treatment and conditioning. The remaining tons, consisting of the so called "anomalous" IFEC waste, are currently undergoing more complex cutting and decontamination procedures, to be later treated and conditioned. In 2020, 30 tons were subject to characterisation: 10 tons were also conditioned, while 20 tons are currently safely stored within the site pending subsequent treatment.
The characterisation and conditioning of solid metallic waste collected in RIBA☒ containers also continued. Among the original 40 tons, approx. 25 tons have so far been conditioned.
As for SW (Solvent Waste), in 2020 the Company continued designing and studying a system for the extraction and immobilisation of the waste organic fraction.

The EUREX facility performed research activities on the reprocessing of irradiated nuclear fuel to separate reusable fissile materials.



In terms of site safe maintenance, the Company completed the preliminary activities to place a waterproofing sheath in the Area 800 – occupied by the Liquid Waste Tanks -, and launched operations to replace the emergency electric generators.
the "excavated soil" resulted from the creation of a construction site to shift the sub-services, were subject to non-destructive tests. According to the guidelines of the Control Authority, some samples will be analysed through "destructive" tests. The outcomes will allow drafting a Characterisation Plan to submit to ISIN for approval. Following the issue of the Plan, final checks will be carried out to identify the soil intended use (i.e., reusing it within the site).

#SOGINSOSTENIBILE

D2 INTERIM STORAGE FACILITY

Works for the implementation of the interim storage facility D2 started in 2011 and ended in 2015 to store the radioactive waste currently located in Building 2300 and other buffer zones of the site, before shipping it to the National Repository.
Designed in compliance with the best international standards, the interim storage facility has a total volume of 25,000 cubic metres, including a handling area, technical and logistical services and free aisles to enable the complete inspection of the materials. In 2019, the MiSE authorised the operations of the Interim Storage Facility for testing purposes and, in July, the Company moved the first radioactive waste to the facility. In September 2020, ISIN submitted a positive opinion on the testing operations carried out, and authorised the transfer of additional waste.
At the end of 2020, the D2 facility housed radioactive waste for approx. 460 cubic metres, including 555 conditioned artifacts or "overpacks" (approx. 235 cubic metres), 253 non-conditioned casks (approx. 65 cubic metres) and 30 non-conditioned parcels (approx. 160 cubic metres).
This storage facility, containing artifacts inserted in anti-overturning cages and controlled through a remote-control system, enhances the site safety level and optimises the storage areas for radioactive waste.

CIRCULAR ECONOMY

TOTAL MATERIALS
77.000 t

CONVENTIONAL WASTE
METAL AND CONCRETE SCRAPS
RADIOACTIVE MATERIALS

44%

MATERIAL SENT FOR RECOVERY, RECYCLING AND REUSE

Overall, the dismantling operations of Saluggia will result in approx. 77,000 tons of materials. About 34,000 tons out of the total (44%) – mostly metal and concrete scraps - will be sent for recovery.

MAIN AUTHORISATIONS OBTAINED

	AUTHORISING/APPROVING BODY
Authorisation to continue the waste transfer to the D2 repository	ISIN
Approval of the New Proposal for the management of contaminated water located in "Progressiva 60"	ISIN

CASACCIA IPU AND OPEC PLANTS

NO. EMPLOYEES (2020)	AMOUNT OF RADIOACTIVE WASTE ON SITE (m^3)	DECOMMISSIONING STARTING DATE	ACHIEVEMENT OF THE BROWNFIELD	BROWNFIELD ACHIEVEMENT VALUE (EUR/MILLION)
58	463	2003	2029	176

HISTORY AND IMPLEMENTED ACTIVITIES

Since 2003, Sogin has managed the OPEC (Boilers Operations) plant and the IPU (Plutonium Plant) plant located in the ENEA Research Centre of Casaccia.
OPEC-1 activities were originally launched in 1962; this was the first Italian facility to carry out research and analysis on nuclear post-irradiated fuel elements. The structure is now used as a temporary repository, and it contains an inventory of irradiated materials resulted from different research processes and to be used in destructive tests.
The OPEC-2 repository was built in the Seventies to expand nuclear research, control and analysis activities previously carried out in OPEC-1; unfortunately, its operations have never started. Today, OPEC-2 has been readapted into a temporary repository for radioactive waste coming from the Plutonium plant.
The IPU plant started operating in 1968 and carried out research activities on nuclear fuel elements production technologies.

The main decommissioning activities carried out so far in Casaccia site include the implementation of the OPEC-2 Repository for the temporary storage of radioactive waste resulted from decommissioning activities and IPU operations; the removal and decontamination of the "Waste A and B" underground system used to collect liquid radioactive waste during the previous OPEC-1 operations; and the dismantlement of "Glove Boxes" - which started in 2010 and represents the most complex activity envisaged by the plant's decommissioning. In 2017, the Company started treating the liquid radioactive waste produced during the site's previous research activities. Moreover, in 2018, the Company launched a project for the implementation of a facility called Alfa Compaction Station (SCA) intended for the treatment of plutonium-contaminated solid radioactive waste.

The irradiated fuel located in Casaccia, will undergo dry storage in metal screened casks suitable for handling and storing the waste in the National Repository.
In 2014, the GTRI (Global Threat Reduction Initiative) allowed the repatriation of the US nuclear materials sent to the Italian power plants in the Sixties for research, Saluggia was among these plants.
The operations to prepare the waste to be shipped, are carried out in a new operational area of the IPU plant, equipped with three Gove Boxes designed for this purpose. The procedures comply with the best national and international safety standards and guidelines.

PROGETTI E ATTIVITÀ IN CORSO

The operations for the transfer and load of the plutonium-contaminated solid radioactive waste previously stored in Nucleco's repositories to the OPEC-2 facility, started in 2019, ended in 2020.
The dismantling of the "Waste A and B" includes clearance and decontamination of the underground system in use to collect liquid radioactive waste during the OPEC-1 operations. The underground tanks, pipelines and plants were extracted and dismantled, and a radiological mapping of the remaining structures was also implemented. The site was cleared from the removed materials that were sent for treatment and conditioning. In 2020, the company completed the final project to dismantle the facilities and systems of the premises containing the tanks and submitted it for final validation.
As for the dismantlement of the 56 Glove Boxes of the site, the Company continued the operations on the remaining Glove Boxes. At the end of 2020, the total number of dismantled Glove Boxes equals to 53. (further information available in the #SoginSostenibile box).
In terms of radioactive waste management, throughout 2020, the company continued the treatment and conditioning operations of liquid and solid radioactive waste resulted from the site's operations and decommissioning within Nucleco plants. More specifically, 110 casks with a total volume of 24 cubic metres underwent treatment.
In 2020, the Company launched a call for tender for the supply of the prototypical Glove Box designed by Sogin to carry out the cementation of the aqueous liquid waste previously stored in IPU and Nucleco's temporary storage facilities. In 2020, the Company also started conducting feasibility studies to identify the best conditioning and sampling operations for the remaining organic waste.

The OPEC-1, located within the Casaccia Research Centre, was the first Italian plant to conduct post-irradiation research and analysis activities on nuclear fuel elements.

As for the OPEC-1 repository, the Company completed the adaptation works to equip the C-14 building for the interim characterisation of potentially releasable materials (according to their radiological analysis).
The extraordinary maintenance on hot cells remote manipulation controls were also completed, allowing to start the inspection and characterisation of TSR waste (radioactive substance remote manipulation waste), namely the waste resulted from the hot cells operations, which are currently stored in the repository loading area.
In 2020, the Company completed the georadar investigations in the site and launched the preliminary project for the implementation of the Alfa Compaction Station – the plant designed for the treatment of intermediate-level waste.
The Company also completed the civil and system restoration works in IPU offices and the renovation of the air-conditioning systems of the monitored area of the site. Moreover, it launched operations to implement the new tanks storage system in the nuclear repository. Before installing said structures, works to restore the damaged floor of the nuclear repository, remove the tanks and dismantle prefab existing structures will be carried out.

#SOGINSOSTENIBILE

GLOVE BOXES DISMANTLING OPERATIONS

The Glove Boxes (SaG) dismantling is the most relevant operations implemented during the decommissioning of Casaccia site.
The Glove Boxes are the confined safety cabinets used to manipulate the Plutonium to produce nuclear fuel elements during the operation of the Plutonium Plant. Overall, there are 56 obsolete Glove Boxes, divided in four levels of complexity, related to size and radiological content. The first Glove Box was dismantled in 2020. From 2012 to 2014, the site was cleared from first and second-level Glove Boxes. In 2016 third-level Glove Boxes were also dismantled and operations were started for the most complex remained (fourth-level SaG).
A small number of SaGs (excluding the previous 56) will remain in operation to manage residual nuclear materials and the liquid waste stored in the nuclear Repository.
The dismantling of obsolete Glove Boxes is carried out in alpha sealed containment curtains (TATA) supplied with gloved tunnels to allow the performance of the operations from the outside.
Dismantling a Glove Box requires the performance of several steps: the preliminary remediation and preparation of the Glove Box; the installation of the dismantling location and equipment; handling and moving the Glove Box within the containment curtain; dismantling of the Glove Box and curtain used for the previous operation; disassembly of the dismantling equipment. These operations involve the management of solid radioactive waste to be super-compacted in existing super-compaction installations of Sogin Group or in the Waste Management Facility, according to their Plutonium concentration, to reduce in volume (1:3) and be suitable to be conferred to the National Repository.

CIRCULAR ECONOMY

TOTAL MATERIALS
6.239 t

CONVENTIONAL WASTE
METAL AND CONCRETE SCRAPS
RADIOACTIVE MATERIALS

30%

MATERIAL SENT FOR RECOVERY, RECYCLING AND REUSE

Overall, the dismantling operations of Casaccia will result in approx. 6,000 tons of materials. About 1,800 tons out of the total (30%) – mostly metal and concrete scraps - will be sent for recovery.

MAIN AUTHORISATIONS OBTAINED

	AUTHORISING/APPROVING BODY
Authorisation to modify the plant for the installation of a new Glove Box for the cementation of alfa-contaminated aqueous liquid waste from the Plutonium Plant, pursuant to Article 148, par. 1-bis of Legislative Decree no. 230/95 and subsequent amendments and integrations	MiSE
Authorisation to modify the Plutonium plant to operate the previous Glove Boxes used for the GTRI project, pursuant to Article 6 of Law no. 1860/62	MiSE
Approval of the Verification Plan to remove the excavated soil produced during the replacement of the cooling systems in use in the OPEC-1 Repository	ISIN

ROTONDELLA ITREC PLANT

NO. EMPLOYEES (2020)	AMOUNT OF RADIOACTIVE WASTE ON SITE (m^3)	DECOMMISSIONING STARTING DATE	ACHIEVEMENT OF THE BROWNFIELD	BROWNFIELD ACHIEVEMENT VALUE (EUR/MILLION)
60	3.525	2003	2035	325

DECOMMISSIONING HISTORY

The ITREC plant (Treatment and Re-manufacturing Plant for fuel elements) was built between 1960 and 1970 by CNEN (National Committee for Nuclear Energy). It houses 84 irradiated Uranium-Thorium fuel elements from the Elk River (Minnesota, US) experimental reactor. 20 of these elements have been already reprocessed. Subsequently, research was conducted on reprocessing and remanufacturing operations for the Uranium-Thorium cycle to assess the technical and economic viability of the latter compared to the traditionally implemented Uranium-Plutonium cycle.
The first decommissioning activities carried out in the plant involved the decontamination of the discharge pipe at sea and the construction of the new control booth. They also included the implementation of one of the most advanced Italian laboratories for environmental monitoring.
In 2014, the GTRI (Global Threat Reduction Initiative) allowed the repatriation of the US nuclear materials sent to the Italian power plants and sites in the Sixties for research.

ONGOING PROJECTS AND ACTIVITIES

As for the remediation of Pit 71, in 2019 the Company completed the clearance of the reinforced concrete "monolith" containing intermediate-level waste resulted from the plant operations. This activity is an important stage for the plant decommissioning and involved adopting an unprecedented engineering solution at an international level based on the Italian know-how. To conclude the remediation of the area where the monolith was located, in 2020 the Company completed the release activities of the Structures and Components Systems, the characterisation for material management conducted according to the plant procedures, and the samplings to assess the radiological status of the area as provided for in the Characterisation Plan.

The ICPF plant is a facility that will allow conditioning 3 cubic metres of radioactive liquid solution resulted from previous reprocessing of nuclear fuel in cement mortar - the so-called "final product". The project envisages the implementation of two communicating buildings: a process building with complex plants and systems to allow the remote-control of the operations and a temporary storage facility intended for the safe storage of 166 products resulting from processing. In May 2020, after the national lockdown, the Company resumed works to complete the temporary storage facility that will cover a total volume of 13,000 cubic metres.
As for the construction of the process building, the mock-up of the cementation cell was realised and testes in the previous years, and the executive project in under review. Within the framework of the EIA Decree – renewed in July 2020 and extended up to 2024, the environmental monitoring activities (air, surface and groundwater, plants, and animals) continued according to the provisions.
The plant's pool contains 64 irradiated fuel elements of the Uranium-Thorium cycle from the Elk River reactor. These elements, enclosed in stainless steel capsules, are stored along the side walls of the pool, arranged in metal racks. In 2020, the Company started manufacturing the components of the metal screened casks needed to store dry elements (forged parts, crates, head huggers, borate aluminium plates).

The SIRIS project (Solid Waste Arrangement) envisaged the treatment of solid radioactive waste stored in the ITREC plant and resulted from the facility operations and its decommissioning. The solid waste resulted from the previous plant's operations stored in 21 containers were treated first. In 2020, 280 casks containing solid radioactive waste resulted from the safe maintenance and decommissioning operations, were treated. Overall, the project allowed the treatment and decontamination of 49 tons of materials; it is expected that more than 70% of these materials will be sent for recovery.
Moreover, the project allowed completing the remediation of Premise 115, the so-called "corridor", from potentially contaminated materials and equipment that can no longer be used. These operations allowed the treatment of 49 tons of material. In 2020, the Company also carried out additional cleaning, painting, and waterproofing works in the premise.

Between 1968 and 1970, the ITREC Plant of Rotondella received 84 Uranium-Thorium irradiated fuel elements from the Elk River (Minnesota) experimental reactor.

The ITREC plant features the TAF facility (Waterways treatment plant), a mobile plant that collects groundwater to remove polluting chemicals and substances. The plant, installed in 2018, allowed collecting 104 samples, treating 10,027 cubic metres of water, and producing 3,010 kg of dehydrated sludges in 220 days of operation.

To optimise the management of the waste located in the site, the procedure for the treatment and conditioning of combustible waste was launched in 2020. The treatment strategy envisages the shipment of liquid waste to a foreign plant equipped with incineration systems to condition and subsequent classify the materials as low-level waste.

#SOGINSOSTENIBILE

FINAL PRODUCT CEMENTATION PLANT (ICPF)

Between 1975 and 1978, a nuclear testing campaign was conducted on 20 elements of irradiated fuel coming from the US Elk River reactor, which produced three different radioactive liquid outcomes; one of these was the so-called "Final Product", consisting of recovered fuel (Uranium and Thorium) and fission elements in a nitric-based solution.
The 3 cubic metres of liquid radioactive solution are currently stored in a stainless-steel tank contained in a concrete cell located in the plant's Waste-1 area.
To ensure the disposal of the "final product" through cementation, Sogin launched the implementation of the ICPF plant consisting of a process and a storage building. The latter will store the cemented waste and will be equipped with a specific section (DTC3) to house the two casks containing the fuel elements which are currently located in the plant's pool. The process building will be realised in correspondence of the working site for Pit 7.1, thus allowing a substantial recovery of the surfaces and avoiding the use of additional areas located within the site.

CIRCULAR ECONOMY

TOTAL MATERIALS
67.498 t

CONVENTIONAL WASTE
METAL AND CONCRETE SCRAPS
RADIOACTIVE MATERIALS

70%

MATERIAL SENT FOR RECOVERY, RECYCLING AND REUSE

Overall, the dismantling operations of Rotondella ITREC plant will result in approx. 67,000 tons of materials. More than 47,000 tons out of the total (more than 70%) – mostly metal and concrete - will be sent for recovery.

MAIN AUTHORISATIONS OBTAINED

	AUTHORISING/APPROVING BODY
Approval of the Detailed Project for the dry storage of Elk River irradiated fuel elements	ISIN
Approval of the measures for the unconditional clearance of technological secondary materials coming from the ITREC plant	ISIN
Approval of the Characterisation Report and Radiological Assessment Plan of the components included in the second group in premise 115 (Corridor)	ISIN
Approval of the Plant Modification Request to implement the New Emergency Supply System, pursuant to Article 233 of Legislative Decree no. 101/20 (former Article 148, par. 1-bis of Legislative Decree no. 230/95 and subsequent amendments and integrations) and Article of Law no. 1860/62 and subsequent amendments and integrations	MiSE

ISPRA-1 REACTOR

NO. EMPLOYEES (2020)	AMOUNT OF RADIOACTIVE WASTE ON SITE (m^3)	DECOMMISSIONING STARTING DATE	ACHIEVEMENT OF THE BROWNFIELD	BROWNFIELD ACHIEVEMENT VALUE (EUR/MILLION)
3	94	2019	2034	38

DECOMMISSIONING HISTORY

ISPRA-1 is the last Chicago-Pile version of a 5 MW research reactor developed by Enrico Fermi. It is the first Italian research reactor. Built between 1957 and 1958, it became operational in 1959 and continued up to 1973. In 2018, the Italian Government ratified Law 205/2017 (2018 Budget Law) that stated the definitive assignment of the plant and its ownership to Sogin and appointed the Company for the ISPRA-1 decommissioning. On 26 September 2019 Sogin and the Ispra JRC ratified the final agreement establishing the transfer to the Company.

ONGOING PROJECTS AND ACTIVITES

DECOMMISSIONING PROGRAM

Back in 2018, Sogin launched the first activities to take charge of the plant. Said operations included perimeter and identification of the industrial area and assets together with a cognitive survey of administrative and technical nature, more specifically the legal details, accounting and administrative analysis of the costs incurred by the JRC for the safe maintenance of the facility between 2009 and 2019.
Sogin launched and completed the project to draft the documents required to submit the decommissioning request. The papers have been submitted to the competent Ministries on 29 April 2020. Sogin expects to divide the decommissioning of the ISPRA-1 reactor into three stages:

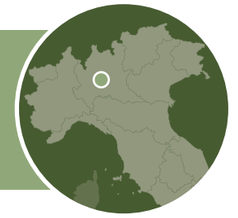
1. preliminary stage and dismantlement of auxiliary systems and components;
2. the reactor, gamma cell, and pool dismantlement;
3. final site remediation.

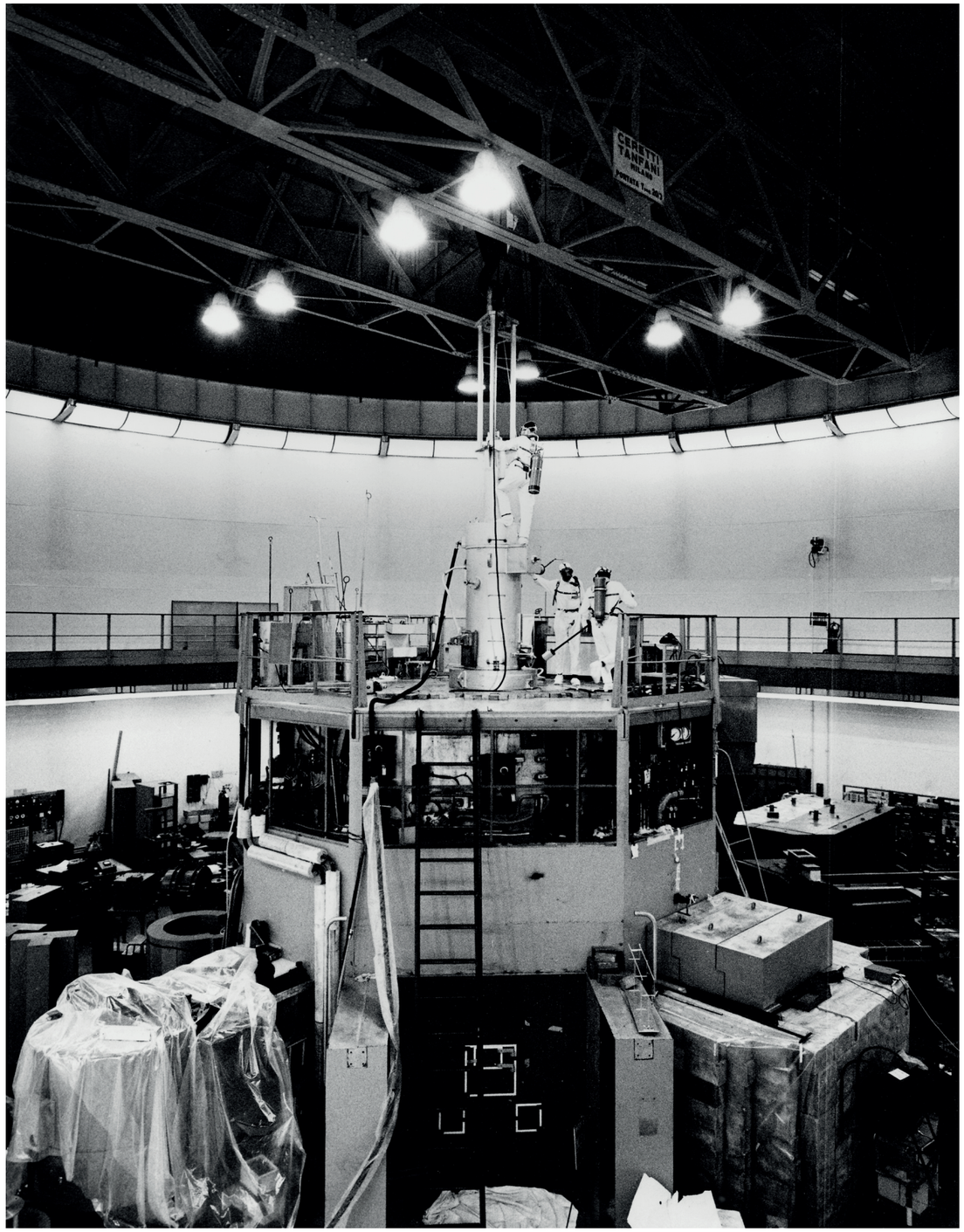
These operations will be carried out after the release of the decommissioning authorisations on behalf of competent authorities.

PROJECT FOR THE REMEDIATION OF THE POOL

After acquiring the ownership of the ISPRA-1 reactor, Sogin launched the remediation project to clear the pool from 200 cubic metres of water. This operation follows the works implemented in recent years by the Ispra JRC to remove the activated metal components and the sludge and metal sediments.
The pool will be emptied after the water has undergone a specific purification through filtering and treatment. This purification system, the same adopted for the remediation of Saluggia pool, is based on the selectivity of the ion exchange resins for radionuclides. Emptying operations will be carried out on lots of 5 cubic metres, a volume suitable to the size and performance of the liquid effluent treatment plant. The final water discharge will comply with the discharge formula of the site.

ISPRA-1, the latest version of the Chicago-Pile 5 developed by Enrico Fermi, was the first Italian nuclear reactor used for research.





05.

NATIONAL REPOSITORY AND TECHNOLOGY PARK: A NATIONAL PROJECT

Siting, design, construction and operation of the National Repository and Technology Park (DNPT) are entrusted to Sogin, as provided by Legislative Decree no. 31/2010.

On 5 January 2021, following the issue of clearance by the Ministry of the Environment and Protection of Land and Sea (now the Ministry of Ecological Transition - MiTE) and the Ministry of Economic Development (MiSE), and as required by the decree, Sogin published the CNAPI, the order of suitability of the areas identified based on technical and socio-environmental characteristics, the preliminary design of the National Depot and Technology Park and the related documentation.

Following the publication of the CNAPI and related documents, the matter was presented for public consultation. Further information is available on depositonazionale.it

PROJECT

PURPOSES

The National Repository is the infrastructure where all the Italian radioactive waste will be safely stored. It is a country-wide project that will allow the centralised, safe and effective management of the radioactive waste resulted from previous operations and the waste expected to be produced in the next 50 years. The Repository will host the radioactive waste generated from previous activities and decommissioning of nuclear power plants and facilities the waste produced by industrial, research and nuclear medicine activities.
The National Repository will feature specific structures equipped for the final storage of very-low-level and low-level waste, and intermediate and high-level waste, which will be pending their final shipment to a geological disposal facility.
The Repository implementation will allow closing the Italian nuclear fuel cycle and completing the plants decommissioning to return the concerned sites to the community.
The National Repository will allow Italy to align with other EU countries with similar repositories and enhance the acquired know-how. The Italian project also envisages creating a Technology Park featuring a research centre open to international partnerships and collaboration in the fields of energy, waste management, and sustainable development.

TECHNICAL FEATURES

The Repository will feature engineering and natural barriers specifically designed to contain radioactivity according to the best international practices, the latest IAEA (International Atomic Energy Agency) standards, and the ISIN (National Authority for Nuclear Safety and Radiological Protection). The protective engineering barriers – made in reinforced concrete blocks – will ensure the confinement of waste radioactivity for the time required to its decay in intervals comparable to those occurring the change of environmental radioactivity. More specifically, the Repository will be equipped with 90 reinforced concrete structures (cells) that, in turn, will store large special concrete tanks (modules), which will enclose metal casks filled with conditioned radioactive waste (artifacts). AT the end of this procedure (when the cells will be filled entirely), the cells will be covered by an artificial hill of inert waterproof materials, which will guarantee further protection and harmonise the infrastructure with the surrounding landscape.

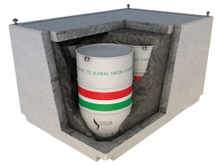
MULTIBARRIER SYSTEM

01

FIRST BARRIER (ARTIFACT)

Radioactive waste, conditioned with a cementitious matrix in metal containers (artifacts), is transferred to the National Repository.

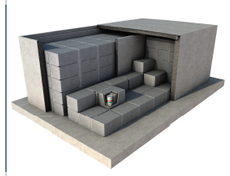
02



SECOND BARRIER (MODULE)

The artifacts are placed and cemented in special concrete modules (3 m x 2 m x 1.7 m), designed to withstand 350 years.

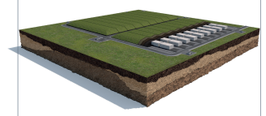
03



THIRD BARRIER (CELL)

The modules are inserted into reinforced concrete cells (27 m x 15.5 m x 10 m), designed to withstand 350 years.

04



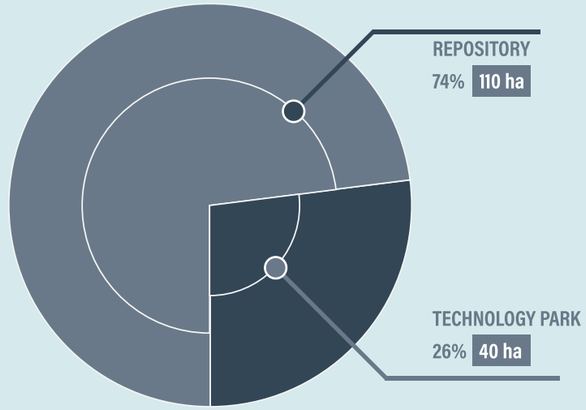
FOURTH BARRIER (MULTILAYER HILL)

The multilayer hill is an artificial structure that covers the cells. It is built with layers of different materials to prevent rainwater infiltration, isolate the waste from the environment, and improve the structure's visual impact.

WHICH WILL BE THE SURFACE AREA OF THE NATIONAL REPOSITORY?

The National Repository and Technology Park will be included in a 150 hectares area divided as follows: 110 ha for the Repository and 40 ha for the Technology Park.

Within the 110 ha of the National Repository, an area of about 10 ha will be devoted to the disposal of very low and low-level radioactive waste, another area of 10 ha will feature the four interim storage facilities for medium and high-level radioactive waste. The remaining 90 hectares will be used for buffer zones, cell and module production facilities, module packaging plant, buildings for quality control, radiochemical analysis and support services.



RADIOACTIVE WASTE: WHAT TYPE AND HOW MUCH

The National Repository is the infrastructure that will allow the final safe storage of very-low and low-level radioactive waste. A specific area of the facility will be equipped with premises for the temporary safe and long-term storage of High integrity containers (HICs) filled with intermediate and high-level radioactive waste (including non-processable fuel elements and the residual materials resulting from the reprocessing of irradiated fuel elements carried out abroad), pending their final disposal in a geological repository.
The total amount of this waste includes previous registered waste – namely the waste currently stored in the interim storage facilities located in Italy -,

and the estimated volume of waste that will result from the future safe maintenance and decommissioning of nuclear power plants and facilities, and industrial, research and nuclear medicine activities.
Therefore, the inventory of conditioned waste to be shipped to the National Repository may vary precisely according to the estimates previously calculated. For this reason, regular verifications are carried out to monitor possible updates.
So far, the estimates calculated in 2020 confirm a total reference amount of 95,000 cubic metres of radioactive waste to be stored in the Repository divided as follows: approx. 78,000 very-low and low-level radioactive waste and about 17,000 cubic metres of intermediate and high-level radioactive waste, in turn, divided into 60% from the energy sector and 40% from other sectors.

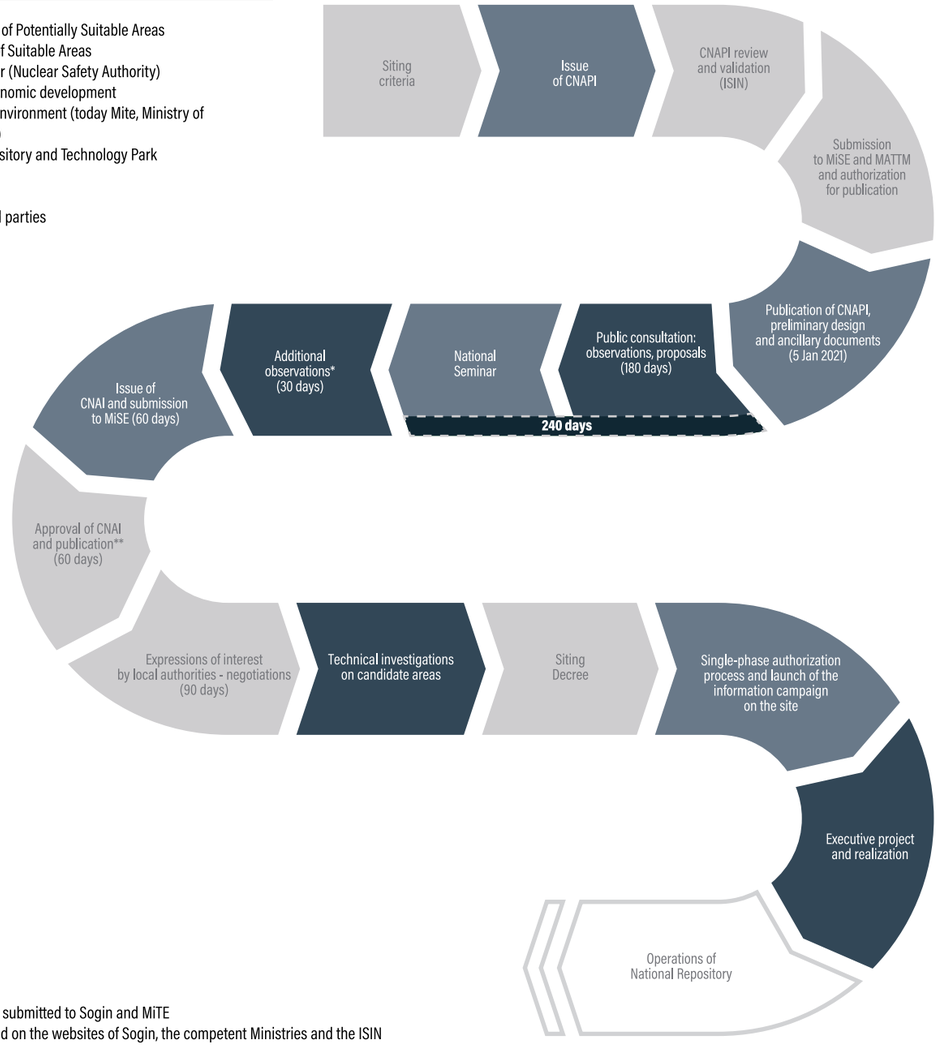
SITING

The siting, design, and implementation of the National Repository and Technology Park are regulated by Legislative Decree no. 31 of 2010, which appoints these operations to Sogin.
For the first time in Italy, the siting of a major infrastructure work shall be decided by law through the collective involvement of local communities. The Decree guarantees integration between technical and scientific aspects and information, transparency, and engagement activities.
As provided for under Legislative Decree no. 31/2010, Sogin drafted a proposal for the National Charter of potentially suitable areas (CNAPI) by adopting

LEGENDA

CNAPI: National Map of Potentially Suitable Areas
CNAI: National Map of Suitable Areas
ISIN: Italian Regulator (Nuclear Safety Authority)
MiSE: Ministry of economic development
MATTM: Ministry of environment (today Mite, Ministry of Ecological Transition)
DNPT: National Repository and Technology Park

Sogin activities
Activities of third parties

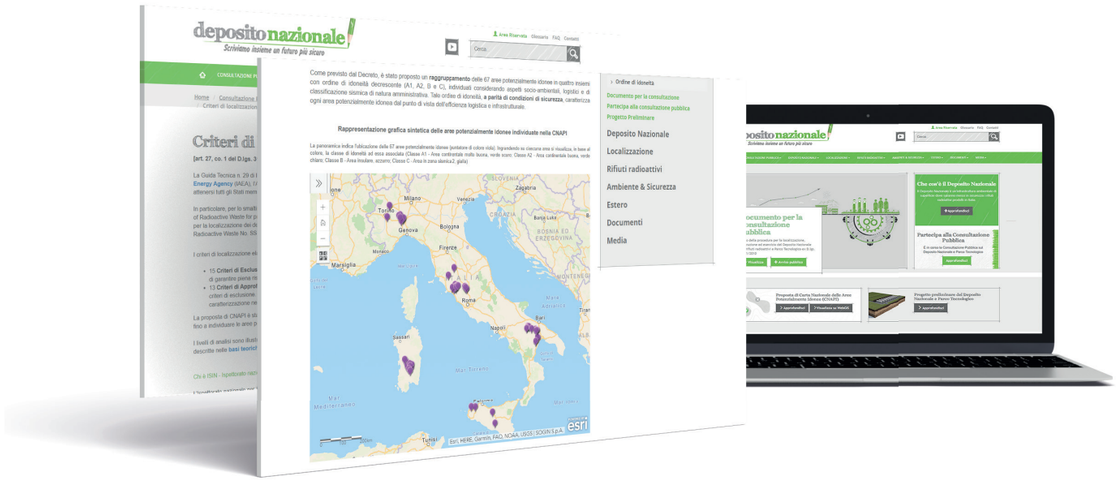


*Observations formally submitted to Sogin and MiTE
**CNAI will be published on the websites of Sogin, the competent Ministries and the ISIN

the siting criteria defined in the ISPRA (now ISIN) Technical Guide no. 29 and the requirements stated in the IAEA Guidelines.
After its preparation, Sogin submitted the CNAPI proposal to the Supervisory Authority that assessed the correct adoption of the criteria and validated it. Subsequently, the proposal was submitted to the competent Ministries (Ministry of Economic Development and Ministry of the Environment and Protection of Land and Sea to obtain the clearance for publication, issued on 30 December 2020.
On 5 January 2021, Sogin published the CNAPI, the preliminary project of the National Repository and Technology Park, and the related documents provided under Legislative Decree no. 31/2010 on the official website depositonazionale.it.
The publication followed with the launch of public consultation involving Regional authorities, Local Entities and all the Stakeholders. These parties can formulate their observations and proposals related to the CNAPI and the preliminary project and submit them to Sogin. During this stage, the Company will hold a National Workshop to discuss the project with all the Stakeholders. The workshop will be a chance to analyse the project's technical aspects and those related to occupational, public and environmental safety; moreover, the Company will also present the financial benefits and local development opportunities connected to the implementation of the National Repository.
The public consultation aims at reaching a common and joint decision on the siting of the National Repository.

CNAPI

Sogin drafted the CNAPI by adopting the siting criteria defined in the ISPRA (now ISIN) Technical Guide no. 29. Said criteria, in line with the IAEA standards, consist of a set of assessment requirements and elements designed to gradually identify areas that ensure the long-term safety and integrity of the National Repository.
The siting criteria divide into Exclusion Criteria – implemented to exclude the national areas which features cannot ensure full compliance with necessary safety, human and environmental protection requirements -, and Detailed Criteria – implemented to make a detailed analysis of the identified areas, following the adoption of Exclusion Criteria.
According to the CNAPI proposal, there are 67 potentially suitable areas across 7 Italian Regions. Following several consultations and debates with the concerned territories, only one of these areas will be selected for the construction of the National Repository that will host all Italian radioactive waste.



INFORMATION, TRANSPARENCY, ENGAGEMENT

Along with other relevant major works, the National Repository siting requires broad communication and reference stakeholders' engagement. Said activities are envisaged in Legislative Decree no. 31/ 2010, introducing the international guidelines, community and national regulations concerning information access, and the public engagement on environmental matters. The process for the siting of the National Repository and Technology Park revolves around three fundamental principles: information, transparency, and engagement.

During 2020, the Company provided its Stakeholders (institutions, universities, professional orders, and associations) with information on the National Repository and Technology Park, including clarifications on the project's technical aspects and the siting procedure required for its implementation.

06. ENVIRONMENT

Environmental sustainability is a key part of the Sogin mission. For this reason, the Company's environmental commitment covers several aspects: compliance with regulatory safety provisions, implementation of voluntary measures or initiatives which effectively contribute to foster sustainable development.
The following pages describe the main processes and the most significant initiatives in the field of environmental responsibility.

ENVIRONMENTAL PROCEDURES

In line with the current legislation on environmental impact, Sogin launches the necessary environmental procedures to verify possible negative environmental impacts of the operations performed in a nuclear power plant.
Decommissioning operations and the installation of specific systems in the nuclear sites acquired from ENEA (such as the creation of treatment plants for highly radioactive waste resulted from the reprocessing of irradiated fuel) shall be subject to the Environmental Impact Assessment (EIA), au under Legislative Decree no. 152/2006.
The EIA Decrees define the measures and provisions required to avoid, prevent, reduce and, where possible, integrate significant and negative environmental impacts. According to the timing specified in the EIA Decree, Sogin has all necessary documents to submit a compliance verification to the Competent Authorities (MiTE, MiC, Regions, ISPRA, ARPA), which will present their opinions through specific Resolutions.

EIA DECREES FOR THE SOGIN SITES

	Site and acquisition date	2020 - Decrees stating compliance with EIA provisions
Nuclear Power Plants	Caorso, 2008	-
	Trino, 2008	Compliance with provision 9 (Environmental Monitoring Report) for 2018 and 2019.
	Garigliano, 2009	Compliance with provision 1.7 (Environmental Monitoring Report) for the second half of 2019 and the first half of 2020.
	Latina, 2011	Partial compliance with the provisions A)8 (Environmental Monitoring Report and A)3.vi.b (Analysis of rainwater after the first flush) for 2018 and 2019 (non-compliance with condition A)8, concerning the condition of environmental components in relation to the progress of the activities; compliance with condition A)3.vi.b).
Plants	CEMEX Saluggia, 2008	-
	ICPF Rotondella, 2011	Compliance with the Provisions 1.7 (Noise Monitoring) and 1.8 (Report for the verification of environmental components) for the second half of 2019 and the first half of 2020. Compliance with the Provision 1.1.a (Time Schedule) and 1.1.g (Study on Transports) Decree for the extension of the validity of the Environmental Compatibility Decree DVADEC-2011-94 of 24 March 2011.

Some specific projects defined under item 3 of Annex II, Part IIa of Legislative Decree no. 152 of 2006 - such as the construction of a new interim repository - require the performance of a preliminary screening to exclude any relevant negative environmental effect and, subsequently, avoid carrying out the EIA provided under Article 25 of the Consolidated Law on Environment.
In 2020, the company performed a screening on the Campaign for the treatment of conventional waste (EWC code 16.10.02) of no longer than 120 days through a mobile treatment plant located in the Municipality of Rotondella, which resulted in non-eligibility to the EIA, with provisions.

ENVIRONMENTAL AUTHORISATIONS

Sogin sites, as any other industrial site, are subject to specific environmental authorisations for the activities performed:

2020 ENVIRONMENTAL AUTHORISATIONS

Caorso Nuclear Power Plant	▪ Ceased authorisation for waste storage released by ARPA Emilia Romagna.
EUREX Saluggia Plant	▪ Notification for non-substantial modification of the Single Environmental Authorisation no. 136/2017 to include 2 emission points (P ventilation point for the D2 pursuant to Legislative Decree no. 101/2020 and Q emission point for the environmental laboratories of Building 1000); ▪ Notification for non-substantial modification of the Single Environmental Authorisation no. 136/2017 to operate new Generators (replacement of the old generators with new-generation generators complying with the Regional Decree 12-4553 of 09/01/2017 Annex A letter c); ▪ Obtainment of the provision ownership for the Concession of the Repository of mineral oils from ENEA to Sogin, with subsequent change of capacity (increasing change <30% of the storage capacity for mineral oils from 353.05 to 366.19 cubic metres); ▪ Update of the mineral oil repository concession for a change in the overall storage capacity from 366.19 to 261.19 cubic metres (non-substantial change) due to the disposal of the 105 cubic metre BTZ (T9) tank.
Trisaia ITREC Plant	▪ Submission of SCIA certification to update the activities of the CPI (deadline 2023).
Latina Nuclear Power Plant	▪ Update of the Single Environmental Authorisation no. 917/2017 for substantial change connected to implementing the new single wastewater purifier to replace the former 3 purifiers.

REMEDIATION PROCEDURES

The provisions envisaged by the EIAs include launching monitoring campaigns on the environmental matrixes, to be regularly carried out according to the characteristics of the site.
To comply with the provisions of the Ministerial Decrees on environmental compatibility, Sogin regularly monitors the quality of the environmental components (atmosphere, surface water, ground water, landscape, and noise) by analysing a series of selected biological, chemical, and physical indicators.
Said monitorings, known as conventional monitoring, are carried out on the four nuclear power plants, on the ICPF plant in Rotondella, and in the CEMEX Complex in Saluggia for the following purposes:

- Verifying the compliance with the impact estimated in the Environmental Impact Assessment
- Collecting data to report the environmental status in relation to the activities
- Ensuring full control of the environmental situation in the different stages
- Evaluating environmental developments by comparing ante-operam outcomes with ongoing outcomes and preparing corrective actions in case of anomalies

The findings of the analyses are regularly collected in an environmental report, submitted for approval to the MiTE, and made available in the RE.MO (Monitoring Network) open portal on sogin.it.
Gli esiti di tali monitoraggi vengono periodicamente raccolti in un rapporto ambientale e, una volta validati dal MiTE, sono resi disponibili nel portale RE.MO. (REte di MOnitoraggio) accessibile dal sito sogin.it.

REMEDIATION PROCEDURE				
In case the values detected during the monitoring campaigns exceed the CTCs (Contamination Threshold Concentrations) for the land and ground water matrixes, Sogin - as the manager of the plant - launches the remediation procedure as provided under part IV of Legislative Decree no. 152/2006:				
Launch of the remediation procedure and communication of the potential contamination detected to the competent authorities.	Drafting and submission of the characterisation plan, accompanied by a proposal for an investigation plan defined on the preliminary site's conceptual model (identification of the contamination source, migration paths, exposure modalities and targets).	Approval of the characterisation plan by the Conference of Services constituted by the local authorities in charge of control (Regional authorities, Province authorities, ARPA, Municipal Authorities, Local Healthcare authorities -Asl).	Execution of the investigation plan to verify the reviewed conceptual model and collect input data for the site-specific healthcare Risk Analysis (AdR) to detect the Risk Threshold Concentrations (CSR).	Approval of the site-specific healthcare Risk Analysis by the Conference of Services and definition of subsequent actions.
In case the detected values exceed the Risk Threshold Concentrations:				
Drafting and submission of the Operational Project for Remediation (POB) or the Project for the Implementation of Operational Safety Measures (MISOP), and related monitoring plan.	Approval of the Operational Project for Remediation (POB) or the Project for the Implementation of Operational Safety Measures on behalf of the Conference of Services.	Execution of the actions provided in the Operational Project for Remediation (POB) or the Project for the Implementation of Operational Safety Measures.	Execution of the approved monitoring plan.	
If the values detected are lower than the Risk Threshold Concentrations:				
The monitoring plan previously envisaged in the site-specific healthcare Risk Analysis is carried out to verify changes in the detected anomaly.				

The sites involved in remediation procedures in 2020 include: Caorso, Latina, Garigliano, Trino, and Rotondella. The Bosco Marengo site is also subject to remediation procedures. In 2016, the site contamination was verified during a qualitative characterisation campaign conducted autonomously by Sogin on the ground water located under the site.
The land and water characterisation (including both underground and surface water) was launched in ISPRA-1 to collect data and draft the EIA.

BOSCO MARENGO REMEDIATION PROCEDURE

In 2016, during a qualitative characterisation campaign performed on the ground water of the site, an exceedance in Threshold Contamination Concentrations of some carcinogenic aliphatic and chlorinated compounds were detected: tetrachloroethylene, dichloroethylene and trichloromethane and chromium VI. This event resulted in the launch of a remediation procedure.

- In May 2016, the potential contamination of the site's ground water was communicated as stated under art. 245 of Legislative Decree 152/06 and following amendments and integrations.
- In June 2016, Sogin submitted the Characterisation Plan.
- In January 2018, Bosco Marengo Municipality approved the Characterisation Plan, integrated according to the requests of the Conference of Services, with resolution No. 1.
- From February 2018, field and laboratory investigations were launched as provided under the approved Characterisation Plan for the collection of experimental data to draft the Risk Analysis for the specific site
- Between June and July 2019, a second campaign on ground water was launched, in line with the approved Characterisation Plan.
- In September 2019, the Site-specific Risk Analysis Report was submitted to the concerned parties.
- In April 2020, the detailed documents requested by the Conference of Services were submitted.
- In July 2020, with Municipal resolution no. 6 of 20 July 2020 and no. 7 of 22 July 2020, the Site-specific Risk Analysis was approved; the analysis envisages provisions concerning the execution of a two-year monitoring plan and the design of a MiSOP/POB Project to contain the tetrachloroethylene found in the north-western sector of the site perimeter.
- In September 2020, monitoring activities were launched that will conclude at the end of 2022, along with designing activities.
- In December 2020, the MiSOp – pilot tests project was concluded; the project aimed at containing the tetrachloroethylene found in the NW sector of the site perimeter.

CAORSO REMEDIATION PROCEDURE

In the framework of the monitoring activities on ground water launched in 2012, in October 2016, an exceedance in the Threshold Contamination Concentrations was detected for the PCB compound in a single sampling point located within a waterproof diaphragm. Subsequent analysis of the water samples collected from external sampling points has shown that the potential contamination has been confined.

- In October 2016, Sogin communicated the detection of possible contamination in the site's ground water.
- In March 2016, due to the features identified during the confinement of a limited area affected by the contamination, a "Single Remediation Project" was submitted to the competent bodies as stated under art. 249 of Legislative Decree 152/06 and subsequent amendments and integrations.
- In May 2017, the Conference of Services gave a favourable opinion on the "Single Remediation Project" and requested the integration of a detailed report on the waste resulting from the treatment.
- In December 2017, Sogin submitted the "Single Remediation Project" by providing that ground water is reintroduced in the same geological unit as requested by the Conference of Services.
- In January 2018, ARPA Emilia issued the approval of the Single Remediation Project, as previously integrated.
- In 2018, procedures were started to draft tendering documents to build the treatment plant included in the approved Single Remediation Project.
- During 2019, the tender procedure to draft the Executive project was completed, and the executive project for the treatment plant and its installation was drafted;
- In December 2019, within the quarterly campaigns on ground water monitoring, an abnormal rate of Perchloroethylene (PCE) and NH4 was recorded in almost all the sampling points of the ground water monitoring network. Therefore, special monitoring procedures have been activated to define the real scope of the detected anomalies. The findings of the monitoring have been promptly submitted to the competent authorities.
- At the end of December 2019, a full report on the findings of the special monitoring operations carried out was drafted. The investigations have shown that the concentrations of PCE comply with the existing regulatory framework. As for the NH4 parameter, the abnormal rate was instead confirmed. Since the exceedance of this parameter is recognised in the area (according to a study conducted in 2006 by ARPA, section of Piacenza and called "Environmental Investigation on the concentration of ammonium ions of ground water in the Municipalities of Cerro and Cortemaggiore, Province of Piacenza), the company is now waiting further guidelines to be issued by competent authorities.
- In 2020, in line with the negotiations with ARPAE, Sogin proposed a study to carry out an in-depth analysis of the contamination detected in the site through an Investigation Plan.
- In September 2020, the Pump & Treat plant was defined under the Single Remediation Project. However, following the findings of the monitoring campaigns - which showed concentrations of PCB lower than the contamination threshold concentrations (CTCs), the plant's hydraulic tests could not be performed. Nonetheless, a detailed report was submitted to ARPAE to verify the possibility of completing the current remediation procedure.

LATINA REMEDIATION PROCEDURE

In December 2013, during the environmental monitoring to assess the maintenance of environmental compatibility during the decommissioning of the Latina nuclear power plant, the site's ground water was monitored to define the concentration of piezometers. This measurement detected outliers in the concentration of vinyl chloride, which resulted in the launch of a remediation procedure.

- In January 2014, the possible contamination of the site's ground water was communicated under art. 245 of Legislative Decree 152/06 and following amendments and integrations.
- In February 2014, the Characterisation Plan was submitted.
- In March 2014, the Conference of Services ordered, pending the approval of the Characterisation Plan and the Health Risk Analysis of the specific site, the execution of a monitoring plan aimed at verifying the development of the detected potential contamination.
- In September 2014, with Municipal Resolution No. 225/2014, the Characterisation Plan was approved, with the integrations requested by the Conference of Services.
- Between September 2014 and January 2015, the investigations provided in the approved Characterisation Plan were carried out.
- In February 2015, based on the field and laboratory analysis outcomes carried out in line with the Characterisation Plan, the Site-specific Health Risk Analysis Report was submitted to the Conference of Services.
- In December 2015, the Site-specific Health Risk Analysis Report was approved with resolution No. 2326.
- In January 2016, the outcomes of the analysis performed on ground water and sampled in the piezometers of the site were submitted to the Conference of Services. One of the investigated samples recorded a value of vinyl chloride concentration exceeding the Threshold Contamination Concentration.
- In March 2016, to clarify the detected anomaly, the Conference of Services requested the performance of detailed investigations in the area where the piezometer detected an exceedance in the Threshold Contamination Concentration, to be integrated into the Characterisation Plan approved in September 2014.
- In May 2016, the "Integration to the Characterisation Plan of ENEA 6 Area" was submitted.
- Between June 2016 and June 2017, further investigations of the detailed plan – ENEA 6 Area were performed, according to the requests of the competent bodies during a session of the Conference of Services held on 17 March 2016.
- In July 2017, the update of the site-specific health Risk Analysis was submitted.
- In July 2019, an integration of the Risk Analysis document pursuant to Legislative Decree no. 152/2006 and subsequent amendments and integrations (Risk Analysis - AdR) - Updated as of June 2017. The Detailed Remediation Project with information on the techniques to be Implemented on a pilot scale in the area around Consorzio Santa Rosa.
- In 2020, quarterly monitoring activities continued as defined under the Risk Analysis authorisation (resolution of the Municipality of Latina no. 2326/2015).

GARIGLIANO REMEDIATION PROCEDURE

During the environmental monitoring activities as stated under provision 1.7 of the environmental compatibility decree on decommissioning, an exceedance in the values of the Threshold Contamination Concentrations for some compounds detected in ground water: trichloromethane, fluorides and Methyl tert-butyl ether (MTBE), that resulted in the launch of a remediation procedure.

- In July 2014, the potential contamination of the site's ground water was communicated under art. 242 of Legislative Decree 152/06 and subsequent amendments and integrations.
- In August 2014, the Characterisation Plan was submitted.
- In January 2016, the Characterisation Plan was approved through Decree No. 8 of Region Campania. The performance of the investigations provided for in the Plan was subject to the ratification of a convention between Sogin and Arpa Campania, to perform a joint analysis on at least 10% of the samples taken.
- In July 2016, the convention between Sogin and Arpa Campania was ratified.
- Between January and March 2017, the planned investigations were performed, and, in July 2017, they were validated by ARPA Campania.
- In October 2017, the Health Risk Analysis Report on the specific site was submitted and approved with Decree No. 35 of 15/03/2018.
- In compliance with the approval resolution no. 35/2018, ground water monitoring activities were carried out; such actions had to last two years (monthly in the first six months and quarterly for the remaining period); the activities were launched in September 2018 and completed in September 2020.
- In December 2020, the final report of the findings collected in the monitoring campaigns and the request to conclude the remediation procedure were submitted to the Conference of Services (doc.NP VA 01746 Sogin Submission Protocol no. 57169 of 10.12.2020).

TRINO REMEDIATION PROCEDURE

To identify the qualitative status of "ground water" before starting adaptation operations of the "Test Tank" into a temporary Repository, in September 2015, Sogin launched an environmental monitoring campaign. The laboratory analysis performed on ground water samples outlined some outliers in the concentration of metals, such as aluminium, arsenic, iron, and manganese.

In December 2015, the potential contamination of the site's ground water was communicated under art. 242 of Legislative Decree 152/06 and subsequent amendments and integrations.

In January 2016, the Characterisation Plan was submitted to the Conference of Services.

- In May 2016, with resolution No. 287/568 of Trino Municipality, the Conference of Services approved the Characterisation Plan.
- In November 2016, Sogin requested an extension of the deadline to submit the Risk Analysis since the contract with the company that had to perform the investigations was not ratified.
- Between May and September 2017, Sogin performed the activities provided for in the Investigation Plan.
- In December 2017, ARPA Piemonte validated the conducted analysis.
- In December 2017, the Risk Analysis on the surface soil matrix was submitted, and quarterly monitoring on the ground water matrix was proposed for 12 months to verify the concentrations of metals over time.
- In May 2018, the integration "Assessment of the chemical and physical features of the site's ground water. Data Analysis 2015-2017" was submitted to the Conference of Services.
- In July 2018, with resolution No. 362/749 of 13/07/2018 by Trino Municipality, the Health Risk Analysis for the specific site was approved, with integrations, by providing the quarterly monitoring of ground water for two years. Moreover, an executive remediation project was drafted for the contamination detected in the surface soil matrix around the hotspot called pZ18 concerning the copper compound.
- In November 2018, the Executive Remediation Project for soil matrix was submitted under the Legislative Decree No. 152/06 and subsequent amendments and integrations, approved with resolution No. 118 of 30/01/2019 by Trino Municipal Authorities.
- In June 2019, the remediation activities on the soil matrix had been completed in compliance with the provisions of the Remediation Operational Project. The analysis of the extracted soil samples has shown values under the legal threshold for the copper compound.
- In October 2019, a request to release a certification of the positive outcomes of the investigation conducted and completed remediation was submitted. Moreover, the quarterly monitoring activities of surface and ground water have started, as specified under the approval document of the Risk Analysis (resolution no. 362/749 of 13/07/2018 of the Municipal Authorities).
- The operations envisaged in the approved ground water monitoring Plan have been implemented throughout 2020.

ROTONDELLA REMEDIATION PROCEDURE

During the monitoring plan preliminary to the creation of the Final Product Cementation Plant, in compliance with the EIA Decree, during the first preliminary campaign, exceedances in the Threshold Contamination Concentrations of some chemical compounds (trichloroethylene, chromium VI, iron, total hydrocarbons) were detected in the ground water of ENEA site in Rotondella. Sogin communicated such anomalies to the competent authorities and launched the remediation procedure.

- In June 2015, Sogin and ENEA communicated the potential contamination of the ground water in compliance with art. 245 of Legislative Decree No. 152/06 and subsequent amendments and integrations.
- In July 2015, the Characterisation Plan was submitted to the Conference of Services.
- In December 2015, the Characterisation Plan was approved by resolution No. 855 of 14/12/2015 of Rotondella Municipal Authorities.
- In May 2016, due to delays in the procurement procedure for the execution of the investigations provided for in the Characterisation Plan, to

be submitted to competent bodies within 6 months from the Plan approval, the implementation status of the activities was communicated, and an extension request was submitted.

- Between June and August, 2016 and April and June 2017, field and laboratory analyses were performed according to the approved Characterisation Plan, validated by ARPA Basilicata in September 2017.
- In October 2017, a Conference of Services was summoned to analyse the outcomes of the performed investigations. Pending the drafting of the Site-specific Health Risk Analysis Report, actions to be promptly implemented have been defined:

  1. as for ENEA and Sogin: removing the tank and the pipeline of the Magnox plant (deemed as the contamination source);
  2. as for ENEA: beyond performing the regular drainage and disposal of the piezometers' water with exceedances in Threshold Contamination Concentration, the Company shall draft a report to carry out further investigations and install other piezometers downstream the SS16 to verify the possible migration of the contamination outside the ENEA perimeter.

- From November 2017, ENEA provides, as stated by the Conference of Services, for the drainage of existing piezometers that present water samples with exceeding concentrations and for the disposal of the produced water.
- In January 2018, the Conference of Services approved the project to remove the tank and the pipeline of the Magnox plant, pending the approval of the activities on behalf of the Nuclear Regulatory Authority.
- In January 2018, ENEA and Sogin submitted the Site-specific Health Risk Analysis Report to the Conference of Services.
- In April 2018, the Conference of Services approved the Site-Specific Health Risk Analysis Report with resolution protocol No. 001675 of 11/04/2018. In the same month, the Parma Public Prosecutor's Office implemented the preventive seizure of some plants of the ITREC site in Rotondella, related to the ground water draining trenches system, originally installed when the site was built and used to keep the underground nuclear structures under water heads, and the three collection tanks for potentially radiological industrial waste water.
- Following the preventive seizure, the design of a water treatment plant was immediately launched to ensure safe site maintenance.
- From May 2018, Sogin operated the ground water treatment plant to manage the water drained from the 5 draining wells, thus ensuring the nuclear safety conditions of the site.
- Between May and June 2018, after the approval of the Conference of Services, ENEA implemented the new piezometers adjacent to road SS16 (barrier piezometers), whose waters were subject to drainage and disposal, to verify the possible migration of the contamination outside of the site.
- In November 2018, ENEA submitted the executive remediation project for securing the site to the Conference of Services.
- In 2019, after obtaining the necessary authorisations for radiological and conventional aspects, the first section (Sc1-Sc4) of the pipework of the Magnox plant was removed since it was identified as a possible primary source of contamination. The waste resulted from the operations has been managed in line with the guidelines of the Operational Plan approved by the Supervisory Bodies.
- In 2020, the removal of the pipelines of the former Magnox plant and the characterisation of the area was carried out.
- On 17 November 2020, Sogin - and other Local Authorities engaged in the procedure launched by ENEA and Sogin - took part in the Conference of Service organised by Region Basilicata to discuss the actions required to accelerate the remediation of the site following the detection of exceeding quantities of trichloroethylene, chromium VI, hydrocarbons, and Iron in the ground water.
- In December 2020, following a Technical Table organised after the detection of chromium VI outside the area of the ENEA Research Centre, further investigations on behalf of ENEA/Sogin had been promoted to accelerate the remediation of the ground water of the site.

EMAS REGISTRATION

The EMAS (Eco-Management and Audit Scheme) is an open audit tool promoted by the EC and made available to private and public companies and organisations. This scheme is helpful to evaluate and improve the environmental performance and draft an Environmental Declaration to share with the concerned Stakeholders. Since 2014, Sogin has been carrying out the EMAS registration under the Regulation (EC) 1221/2009, as amended by Regulations EU 2017/1505 and 2018/2026, proving its commitment to achieving high environmental performances during its operations.

The EMAS registration was initially implemented in Caorso power plant, followed by Trino and the EUREX plant of Saluggia, while the authorisation procedure to register Rotondella plant is still in progress.

EMAS		
Site	**Registration**	**Renewal**
Caorso	2015	2020 - Validation of the I issue of the III edition of the Environmental Declaration (pending endorsement by the EMAS Committee)
Trino	2015	2020 - II update of the second edition of the Environmental Declaration
Saluggia	2017	2020 - II update of the second edition of the Environmental Declaration
Rotondella	2020 - On-site validation - Ongoing registration procedure	-
Nucleco	2019	-

ENVIRONMENTAL RADIOLOGICAL PROTECTION

Each year, Sogin carries out hundreds of samples and measurements based on a specific radiological environmental monitoring in each site. These analyses aim to ensure regular control of the radioactivity level in the environmental matrixes (atmosphere, surface water, underground water, soil and grass, sediments, soil depositions) and the food matrixes (meat, fodder crops, fish, and eggs).
Monitoring is implemented through environmental and radiological surveillance networks installed in each nuclear power plant since its building.
Specific interest matrixes and frequencies of sampling and measurement are defined for each site.
Over the years, these networks have been checked and adapted according to the local environmental conditions and the different configuration of the plants.
Radiological monitoring aims at:

- Checking the main radiological means of contamination
- Monitoring the radiological impact on the environment and food chains to evaluate the dose for the population, namely for specific groups that are potentially exposed to ionising radiations resulting from the project activities
- Verifying the compliance with the limits/reference levels set out by the current law and the respect of values of the specific discharge procedure applied in each site
- Promptly notifying possible environmental impacts or possible health consequences on people

The type and frequency of sample and measure reported in the monitoring program are previously communicated and authorised by the Regulatory Body (ISIN), which receives an annual information report on the environmental radiological condition. Meanwhile, ARPA Agencies (Regional Agency for the Protection of the Environment) carry out a similar monitoring and surveillance activity.

RADIOLOGICAL RELEASE FORMULAS

Through environmental and radiological monitoring, Sogin monitors the compliance with limits and/or reference levels under the current legislation and ensures the values are in line with those of the specific release procedure in use in each site.
Release procedures define the maximum level of radioactivity that can be discharged by a specific plant over a calendar year, according to the provisions set out by the regulatory body.
As for Trino, Caorso, Garigliano and Bosco Marengo sites, such procedures are defined in the Ministerial Decommissioning Decrees, under art. 98 of Legislative Decree no. 110 of 2020, and they are based on the principle of non-radiological relevance, namely an effective dose of 10 micro sievert/year for the population.
As for the Latina, Casaccia, Saluggia, and Rotondella sites, the authorisation procedure for the deactivation request to update the release formulas is still in progress. As for now, these sites adopt the release formulas provided for in the operation authorisations, with possible further provisions that may be adopted by the Supervisory Authority, if necessary.
The maximum quantity of liquid and gas effluents to be discharged is defined in line with a non-relevant radiological effective dose on the population; in other words, the discharge procedure may be 100% implemented without significant impacts on the environment and people. The release formula is defined according to several factors: the nature of the operations carried out in the plant, the fluctuation range of natural radiation, the critical routes of exposure (how the released radioactivity can be reabsorbed by the population, such as by ingesting the fish of the river or by eating vegetables from local crops, which are part of the food chain). Formulas are regularly updated according to the new regulatory standards on radiological protection and nuclear safety and following the plant's configuration changes.
In all Sogin sites, the annual implementation of release formulas results in some percentage points; thus, the impacts on the population and the environment are not significant from a radiological viewpoint.
Further details on the release formulas implemented in each site are available at sogin.it.

RELEASE FORMULA IN SOGIN SITES			
	2020	**2019**	**2018**
Site	**Gas - usage %**		
Caorso	0,02	0,02	0,02
Latina	<0,10	<0,10	<0,10
Trino	7,64	2,95	1,23
Garigliano	<0,01	<0,01	0,02
ISPRA-1	<0,01	0,001	n.a.
Bosco Marengo	0,02	0,03	0,04
Casaccia	<1,40	<1,50	<2,00
Saluggia			
Alfa	0,020	0,036	0,037
Beta-gamma	0,037	0,031	0,035
Rotondella			
Particulate	0,07	0,07	0,07
Noble Gas	3,90	4,15	4,19
Site	**Liquids - usage %**		
Caorso	<0,01	<0,01	0,01
Latina	< 0,60	0,19	1,73
Trino	<0,01	<0,01	0,009
Garigliano	0,07	0,04	0,059
ISPRA-1*	n.a.	n.a.	n.a.
Bosco Marengo**	0	0	0,45
Casaccia***	n.a.	n.a.	n.a.
Saluggia	0,004	0	0,009
Rotondella	0,11	0,36	0,45
*The liquid materials are conferred to the Liquid Effluents Treatment Facility of the JRC-ISPRA(STEEL).			
**In 2020, no release was carried out due to the dismantlement of the treatment system for liquid effluents and sludges implemented in 2018.			
***No release formulas are provided for liquid materials since they are conferred to Nucleco.			

RADIOLOGICAL MONITORING

The following tables show the concentration of radioactivity detected in the main environmental and food matrixes and the level of investigation (LI) calculated for each radionuclide in each selected matrixes.
The sea water matrix is monitored by the surveillance networks of the plants that release liquid effluents into the sea (Latina and Rotondella).
Instead, the clean river water matrix is monitored by surveillance networks in plants that release liquid effluents in surface rivers (Caorso, Trino, Garigliano, Casaccia, Saluggia).
Due to the nature of operations and the plants of Bosco Marengo site, the uranium concentration is monitored exclusively, lower than the non-radiological relevance.
The outcomes of the environmental surveillance of Casaccia and ISPRA-1 facilities for the year 2020 will be available in July 2020, following the ENEA and JRC-ISPRA Reports.

The outcomes of the environmental surveillance are compared with the reference levels expressed in terms of activity concentration in the specific sampled matrix, and they are classified in:

- Recording level: value of radionuclide concentration in a particular matrix above the minimum detectable concentration (MDC);
- Investigation level: the value of radioactivity concentration over which further investigations should be implemented;
- Intervention level: the value of radioactivity concentration at which mitigating actions should be adopted.

FOOD MATRIXES - MILK - SOGIN						
U.m. Bq*/litre	**2020**		**2019**		**2018**	
	Stronzio-90	**Cesio-137**	**Stronzio-90**	**Cesio-137**	**Stronzio-90**	**Cesio-137**
Level of Investigation	**0,36**	**3,90**	**0,36**	**3,90**	**0,36**	**3,90**
Caorso	0,044	<0,02	0,018	<0,02	0,017	<0,02
Latina	<0,016	<0,019	0,061	0,05	<0,04	<0,03
Trino	0,004	<0,05	0,009	<0,10	0,024	<0,10
Garigliano	<0,043	<0,02	<0,036	< 0,02	<0,042	< 0,012
ISPRA-1	Not available	Not available	0,091	0,51	n.a.	n.a.
Bosco Marengo	Not applicable	Not applicable	n.a.	n.a.	n.a.	n.a.
Casaccia	n.d.	n.d.	0,004	0,0193	0,009	0,0228
Saluggia	<0,020	<0,08	<0,010	<0,04	<0,01	<0,12
Rotondella	0,023	<0,10	0,023	<0,10	0,03	<0,09
*The Becquerel is the unit of measurement used for radioactivity and it equals to one nuclear disintegration per second.						

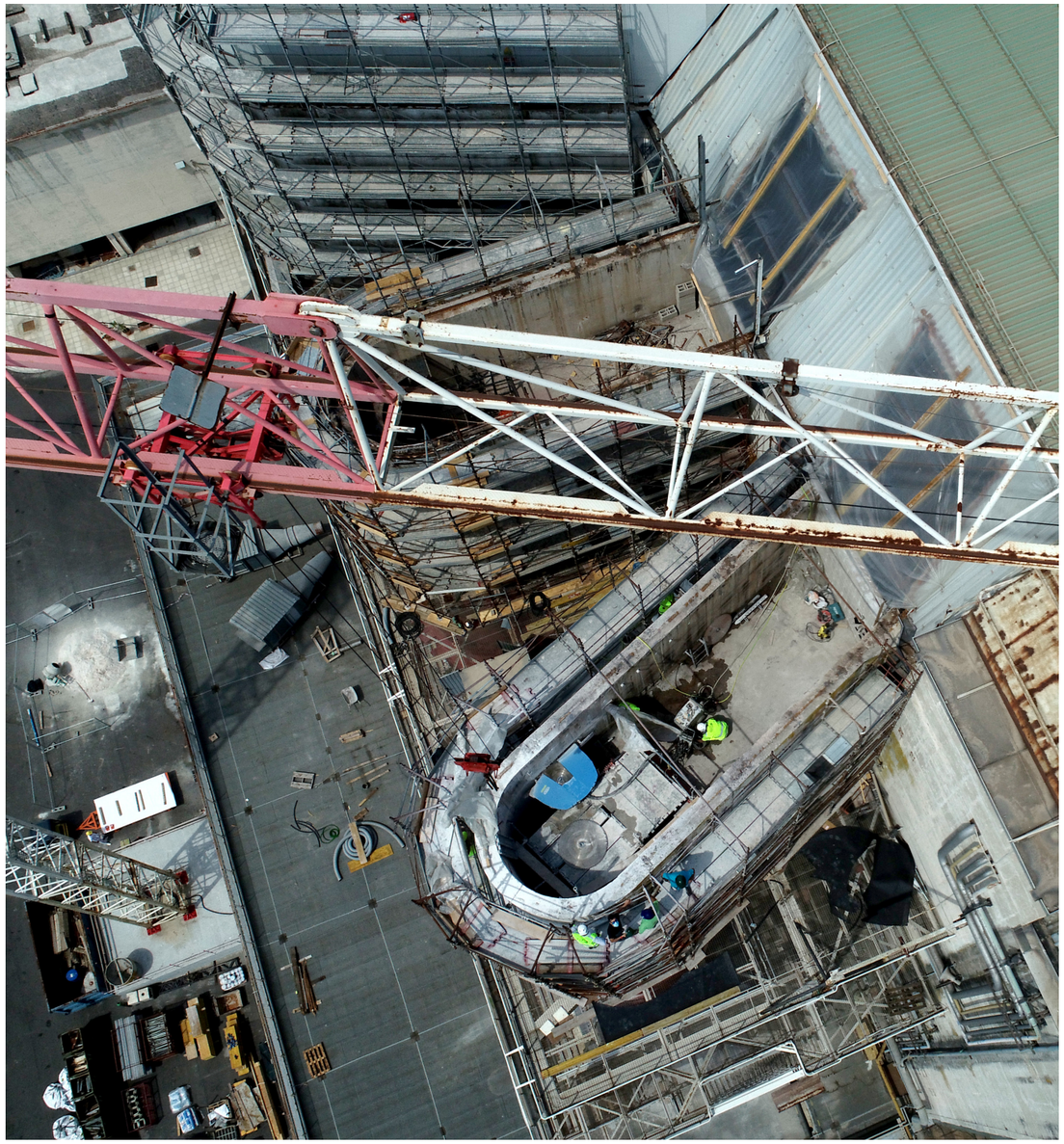
ENVIRONMENTAL MATRIXES - SOIL - SOGIN						
U.m. Bq*/litre	**2020**		**2019**		**2018**	
	Total Uranium*	**Caesium-137**	**Total Uranium**	**Caesium-137**	**Total Uranium**	**Caesium-137**
Level of Investigation	**17.000 ppm**	**198**	**17.000 ppm**	**198**	**17.000 ppm**	**198**
Caorso	n.a	6,10	n.a.	2,99	n.a.	3,15
Latina	n.a	n.a.	n.a.	n.a.	n.a.	n.a.
Trino	n.a	13,2	n.a.	22,7	n.a.	12,5
Garigliano	n.a	4,58	n.a.	4,53	n.a.	5,20
ISPRA-1	n.a	n.d	n.a.	41,5	n.a.	n.a.
Bosco Marengo	0,88	n.a	0,57	n.a.	0,56	n.a.
Casaccia	n.a	n.d.	n.a	3,35	n.a	2,21
Saluggia	n.a	15,1	n.a	11,5	n.a	9,07
*The concentrations of Uranium are measured in parts per million (ppm).						

ENVIRONMENTAL MATRIX - SEA WATER - SOGIN						
U.m. Bq*/litre	**2020**		**2019**		**2018**	
	Cesio-137	**Stronzio-90**	**Cesio-137**	**Stronzio-90**	**Cesio-137**	**Stronzio-90**
Level of Investigation	**1,34**	**0,17**	**1,34**	**0,17**	**1,34**	**0,17**
Caorso	n.a.	n.a	n.a.	n.a.	n.a.	n.a.
Latina	<0,010	<0,019	<0,010	<0,0010	<0,010	<0,0010
Trino	n.a	n.a	n.a.	n.a.	n.a.	n.a.
Garigliano	<0,002	n.a	<0,017	n.a.	<0,014	n.a.
ISPRA-1	n.a	n.a	n.a.	n.a.	n.a.	n.a.
Bosco Marengo	n.a	n.a	n.a.	n.a.	n.a.	n.a.
Casaccia	n.a	n.a	n.a.	n.a.	n.a.	n.a.
Saluggia	n.a	n.a	n.a.	n.a.	n.a.	n.a.
Rotondella	0,023	<0,050	<0,012	<0,045	<0,020	<0,044
*The Becquerel is the unit of measurement used for radioactivity and it equals to one nuclear disintegration per second.						

ENVIRONMENTAL MATRIX – CLEAN RIVER WATER – SOGIN												
U.m. Bq/litre	**2020**				**2019**				**2018**			
	Stronzio-90	**Cesio-137**	**Trizio**	**Cobalto-60**	**Stronzio-90**	**Cesio-137**	**Trizio**	**Cobalto-60**	**Stronzio-90**	**Cesio-137**	**Trizio**	**Cobalto-60**
Level of Investigation	**0,17**	**1,34**	**326**	**0,72**	**0,17**	**1,34**	**326**	**0,72**	**0,17**	**1,34**	**326**	**0,72**
Caorso*												
Downstream 1	n.a.	0,00185	n.a.	<0,0005	n.a.	0,00031	n.a.	0,00012	n.a.	0,00027	n.a.	0,00012
Downstream 2	n.a.	<0,00089	n.a.	<0,0008	n.a.	0,00085	n.a.	<0,0005	n.a.	0,00081	n.a.	<0,0003
Latina	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Trino												
Upstream	0,00020	<0,00028	<2,53	<0,00018	0,00010	<0,00027	<1,85	<0,00018	0,00013	<0,00024	< 1,1	<0,00021
Downstream	0,00036	<0,00099	<2,51	<0,00022	0,00010	<0,00033	<1,84	<0,00022	0,00017	<0,00039	< 1,1	<0,00035
Garigliano												
Upstream	n.a.	<0,002	n.a.	<0,00016	n.a.	<0,017	n.a.	<0,00862	n.a.	<0,0132	n.a.	<0,00864
Downstream	n.a.	<0,002	n.a.	<0,00016	n.a.	<0,017	n.a.	<0,00862	n.a.	<0,0132	n.a.	<0,00864
ISPRA-1	n.d.	n.d.	n.d.	n.d.	<0,213	<0,055	<3,27	n.a.	n.a.	n.a.	n.a.	n.a.
Bosco Marengo**	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Casaccia	n.a.	n.d.	n.a.	n.a.	n.a.	<0,006	n.a.	n.a.	n.a.	<0,005	n.a.	n.a.
Saluggia	n.a.	<0,003	n.a.	n.a.	n.a.	<0,003	n.a.	n.a.	n.a.	<0,010	n.a.	n.a.
Rotondella	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
*The values are equal to the average annual value between the concentration in solution and concentration in suspension, respectively measured in the discharge channel (downstream 1) and Isola Serafini (downstream 2). As stated under the surveillance programme, in place of the sampling station of Isola Serafini, which is currently out of service due to maintenance works of the bridge, since October 2018, another sampling station is implemented; the measured values of 137 Cs and 60 Co can be compared with the downstream concentrations of the plant's release point.												
**The water of Rio Lovassina is exclusively monitored for Uranium presence. The radioactivity concentrations measured downstream of the release point do not show anomalies compared to the upstream values and they are equal to 0.0001 Bq/l.												

Similarly, Nucleco regularly monitors the quantity of liquid effluents, according to the release formula approved in the authorisation license, as well as the quantity of gas effluents. The effective dose for the representative person of the population is set below 10 micro sievert/year.

GAS AND LIQUID RELEASES - NUCLECO			
	2020**	**2019****	**2018***
	Usage %		
Gas	<1	<1	<10
Liquids	No commitment	0,198	2,8
*Nucleco's gas releases do not envisage any release formulas, but they provide for limited gas and liquid releases below or equal to a dose of 10 micro sievert for the population. Given that gas releases are estimated at 1 micro sievert, the 10% value was included.			
**The values written in Italics refer to the effective dose, expressed in µSv/year, calculated per representative person of the population.			



ENVIRONMENTAL SUSTAINABILITY

Again in 2020, Sogin promoted initiatives aimed at adopting sustainable lifestyles, based on the informed use of resources.

The Plastic Reduction project has continued over 2020, aiming at contributing to the reduction of single plastics on the workplace.
The project guidelines are:

- Promoting awareness-raising events among the Group's employees on the importance of reducing single-use plastics pollution;
- Minimising the production of waste, as a relevant part of the wider Circular economy strategy adopted by the Group in the field of nuclear decommissioning.

Sogin has long been involved in the program sponsored by the Public Transportation Company of Rome to limit the use of private vehicles and foster the use of public transports. In 2020, the Sogin's staff working in the offices in Rome offices were provided with 250 free annual tickets to use public transportation (against 249 in 2019 and 230 in 2018).
Since 2017, the Rome Headquarters has been equipped with 20 cycle racks for the staff and with new food and beverage vending machines (free loan for use) which resulted in 50% energy saving.
Studies and feasibility analyses are currently being implemented to define the requirements for the installation of electric charge units and the supply of official cars powered by alternative energy (hybrid/electric vehicles) across the headquarters and the sites.

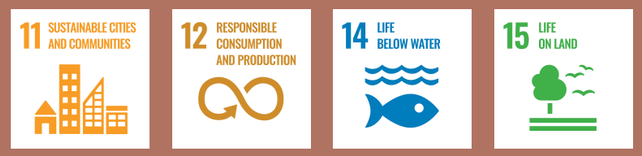
Since 2018, Sogin has voluntarily carried out the Energy Audit of the Company, namely the audit of energy uses and consumption to identify relevant energy flows and improve corporate energy efficiency.
Between 2018 and 2019, the neon lighting system was replaced with a LED lighting system in Rome and in the sites.
Starting from 2022, once each three years, Sogin will carry out Energy audits on all sites (Sogin and Nucleco).

Since 2017, Sogin has been implementing separate waste collection through an action called "Differenziamoci". Trash bins for separate waste collection are available in the eight sites and in the Rome headquarters they are divided by plastic, paper, and undifferentiated waste, as well as specific containers for the collection of empty toners.

The remote working approach, adopted since March 2020 to contain the epidemiological Covid-19 emergency, allowed reducing the environmental impact linked to the travels from and to the workplace.
During the first half of 2020, Sogin continued promoting the approach "less paper and more technology" in the workplace; namely, an approach to reduce paper consumption, for example, by using the Office 365 cloud to share files (previously printed) and the online magazine SoginNews to spread the latest news.

07.

MARKET ACTIVITIES



ITALIAN MARKET

REMEDIATION OF THE FORMER CEMERAD REPOSITORY

Appointed by the special Commissioner for the implementation of the safe maintenance and management of the Former Cemerad Repository, located in the Municipality of Statte (TA), Sogin is committed in carrying out the removal, safe maintenance, and hazardous and radioactive waste management operations, as well as in the remediation and environmental restoration of the area.
The strategy outlined by Sogin aims at implementing the safe maintenance of the about 16,500 stored radioactive casks and the site release, including existing installations, without radiological restrictions.
The operations are divided into four main stages: preliminary works and opening of the working site; cask removal and clearance; waste characterisation and management; final remediation and following release of the site.
At the end of 2020, 13,491 casks had been shipped outside the repository; 11,052 of them contained decayed waste, while 2,439 contained radioactive waste. The last shipment was carried out on 18 October 2020. The site currently hosts 3,000 casks, 897 out of which require further operations to complete the transport documents and obtain the authorisation for the final shipment, while the remaining part is ready to be shipped.

CALABRICITO CHARACTERISATION PLAN

In 2019, Sogin and the Municipality of Acerra ratified an agreement for the characterisation of a polluted site located in Calabricito area. During the Conference of Services organised by Region Campania on 11 February 2020, the final document to approve the Characterisation Plan was presented, and some integrations were requested. In March 2020, reviewing and updating the Plan according to the requests of the Municipality, Sogin submitted the final documents and the economic assessment of costs for the works to the Municipality of Acerra.

"PUNTA DELLA CONTESSA"

In 2017, the Sogin Group, through its subsidiary Nucleco, was awarded a contract with the NATO Support Procurement Agency (NSPA) for the environmental remediation services (land and sea) of the shooting range facility of the Italian Air Force in "Punta della Contessa". The areas subject to the remediation belong to the site of national (SIN) and community (SIC) interest of Brindisi. The project was submitted, and the launch of activities was approved in 2019. So far, land and sea remediation to clear the areas from war remnants, excavations to remove conventional waste and land characterisation works have resulted in approximately 130 tons of material. Upon completion of the excavation and remediation works, final operations to demolish the buildings, fill the excavations and restore the surrounding land will be carried out. Given the usual interruption from April to July to allow the transit of marsh bird species, the works are expected to be completed by April 2021.

POLITECNICO DI MILANO

In 2020, Nucleco continued supporting Politecnico di Milano within the framework of the program for the deactivation of the L54M research reactor of "CESNEF". A radiological mapping and survey were executed on the area surrounding the CESNEF reactor building. The analysis of the graphite samples taken from the L54M reactor provided for the quantity of radionuclides. Support was offered in drafting the documents related to the characterisation plan and the replies submitted to ISIN.

EXTRAORDINARY COMMISSIONER FOR THE REMEDIATION OF ILLEGAL LANDFILLS

Within the framework of the collaboration agreement ratified with the Extraordinary Commissioner, Nucleco implemented an initial intervention in the Nicotera landfill and executed a radiometric survey to verify that no radioactive contaminants were present.

AVOGADRO REPOSITORY

In 2020, Nucleco was appointed for the remediation of 4 cockpits belonging to a contaminated pipeline system found during the performance of radiometric measurements by ARPA Vercelli. ISIN requested further clarifications on how the waste resulting from the remediation will be treated, therefore the launch of works was postponed to 2021.

IROM

In 2020, Nucleco was appointed to carry out the remediation of the IROM industrial site (Poggibonsi - SI) from natural uranium and implement the site radiological characterisation. This operation aims at clearing the area and the site structures, and temporarily storing non-releasable contaminated materials within the site. The operation is expected to be completed by 2021.

FOREIGN MARKET

MARKET ACTIVITY

Sogin Group operates on the international market to offer highly specialised services to public and private Companies and Institutions in the field of nuclear decommissioning and radioactive waste management.
Sogin operates abroad from its offices in Rome, and through the foreign offices of Moscow (Russia) and Bratislava (Slovakia).
The main projects continued or launched in 2020 are reported below.

SERVICES PROVIDED TO THE ISPRA JRC-LMR

In 2014, the Sogin Group, through Nucleco, was awarded a 4-year contract to support the laboratory staff in carrying out the measurement of radioactive and potentially radioactive samples, chemical, radiochemical, and radiometric analyses on site. After this 4-year period, the contract was extended to the following 8 years. In 2020, Sogin was awarded a new call for an additional resource to support the laboratory staff during technical audits and inspections was included, thus completing the basic service.

"PROJECT IMPLEMENTATION ASSISTANCE" AT THE JRC OF ISPRA

In 2017, Sogin was awarded the international call to provide highly qualified technical support to the Joint Research Centre in Ispra (VA) within the framework of the "Decommissioning and Radioactive Waste Management (D&WM)" program.
Throughout 2020, Sogin provided the Centre with the following services:

- Review of decommissioning programmes for nuclear plants;
- Specialised assistance in licensing and archiving;
- radioactive waste and nuclear material management.

SUPPORT FOR RADIOLOGICAL CHARACTERISATION AT THE JRC/ ITU OF KARLSRUHE

In 2013, the Sogin Group - through Nucleco - was awarded a 4-year contract - with subsequent extension (in 2018) - for the characterisation of radioactive waste through gamma-ray spectroscopy and calculation of neutronic coincidences at the Institute of Transuranic elements of the Joint Research Centre (JRC/ITU) of the European Commission in Karlsruhe (Germany). The following activities continued over 2020:

- Maintenance and calibration of measurement systems;
- Analyses of the measurements and "integration of Information".

TECHNICAL ASSISTANCE TO JAVYS FOR THE DECOMMISSIONING OF THE V1 NUCLEAR POWER PLANT IN BOHUNICE

In 2020, Sogin continued providing management and technical advice to the Slovakian State-owned company JAVYS (Jadrová A Vyraďovacia Spoločnosť) concerning the dismantlement of the V1 facility in the nuclear power plant of Bohunice, equipped with two pressurised VVER 440-230 reactors. More specifically, Sogin provides JAVYS with advice and specialised studies on the dismantlement program, and assistance related to project management, procurement and engineering. Throughout 2020, Sogin continued monitoring all worksite activities, by analysing and reviewing the site decommissioning time schedule, currently envisaging the removal and dismantlement of the two reactors and big components of the primary circuits, and the management of radioactive waste.

FEASIBILITY STUDY ON NUCLEAR SUNKEN OBJECTS IN THE ARCTIC SEA

At the request of the European Commission, Sogin leads an international group of companies (German, English, Norwegian) to carry out a study that will detect the hazardous nuclear sunken objects in the Artic Sea of Russian origin (nuclear submarines, nuclear reactors, etc.) and to draft and propose a project for their recovery, based on a feasibility study.
After the development of an inventory, classification and listing of the sunken objects according to their hazardousness for the people and the environment, the consortium led by Sogin finalised the action plan for the recovery of two sunk nuclear submarines and monitoring of four additional objects containing nuclear fuel located on the Arctic seabed.
The findings of the study have been presented and approved by the Russian Stakeholders during a specific meeting held in Moscow in December 2019. In 2020, further meetings – held online due to the pandemic - have been organised to show the findings to the international Stakeholders.

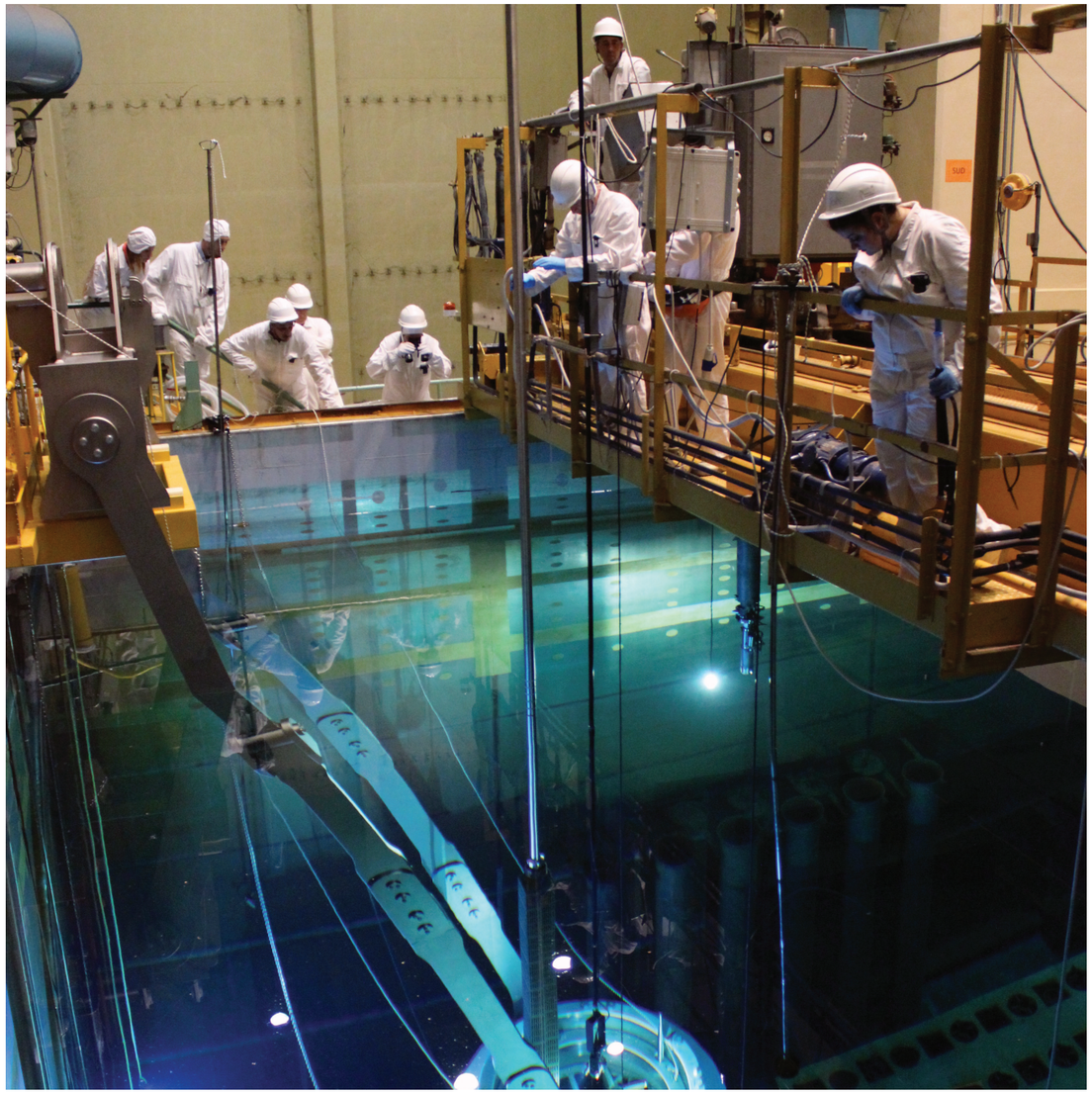
NUCLEAR & RADIATION SAFETY CENTER (CHINA)

In 2019, Sogin ratified a "Cooperation Agreement and Framework Agreement on Nuclear Safety, Operation, Decommissioning and Radioactive Waste Management" with the Chinese Nuclear Safety Centre (NSC). This agreement entails the performance of joint studies and research on decommissioning strategies and technical assistance in process optimisation. In this framework, in October 2019, Sogin ratified the first "Specific Agreement" envisaging the study of project measures to facilitate decommissioning of spent fuel reprocessing plants and radioactive waste management. In 2020, Sogin submitted the first two studies on the Italian decommissioning strategies, which are:

- "Practical Feedback of Italian Nuclear Power Plants decommissioning Projects" submitted in January, concerning a practical analysis of the decommissioning projects implemented on the Italian nuclear power plants;
- "A summary report on the design measures to facilitate decommissioning of spent fuel reprocessing plants" submitted in February.

GLOBAL PARTNERSHIP

Within the scope of the Global Partnership programme (G8 of Kananaskis, Canada, 2002), on 5 November 2003 the Governments of the Italian Republic and the Russian Federation ratified a cooperation agreement covering the dismantling of disused nuclear submarines of the Russian navy and radioactive waste and spent nuclear fuel safe management. This agreement - ratified by the Italian Parliament by Law no. 160/2005 - is one of the most successful international collaborations in the field of disarmament and non-proliferation. The operations defined in the agreement are managed by a Steering Committee made up of members of the Italian Ministry for Economic Development and Rosatom, which direct Sogin's actions and operations.
More specifically, Sogin deals with activities of general coordination and manages the administrative and operative aspects of the projects.
The authorisation procedure for the creation of a facility to treat existing and future liquid radioactive waste generated in the Andreeva Bay site, has continued over 2020.
This installation is required to tackle one of the most serious environmental challenges affecting the Northwestern Russian area. The existing waste results from the operations of a former naval submarine base operating from the Sixties to the Eighties and subsequently abandoned; this base is now used as an interim repository for radioactive waste, before its final shipment to the Saida Bay site, in the Kola peninsula.
Works are expected to start in 2021.

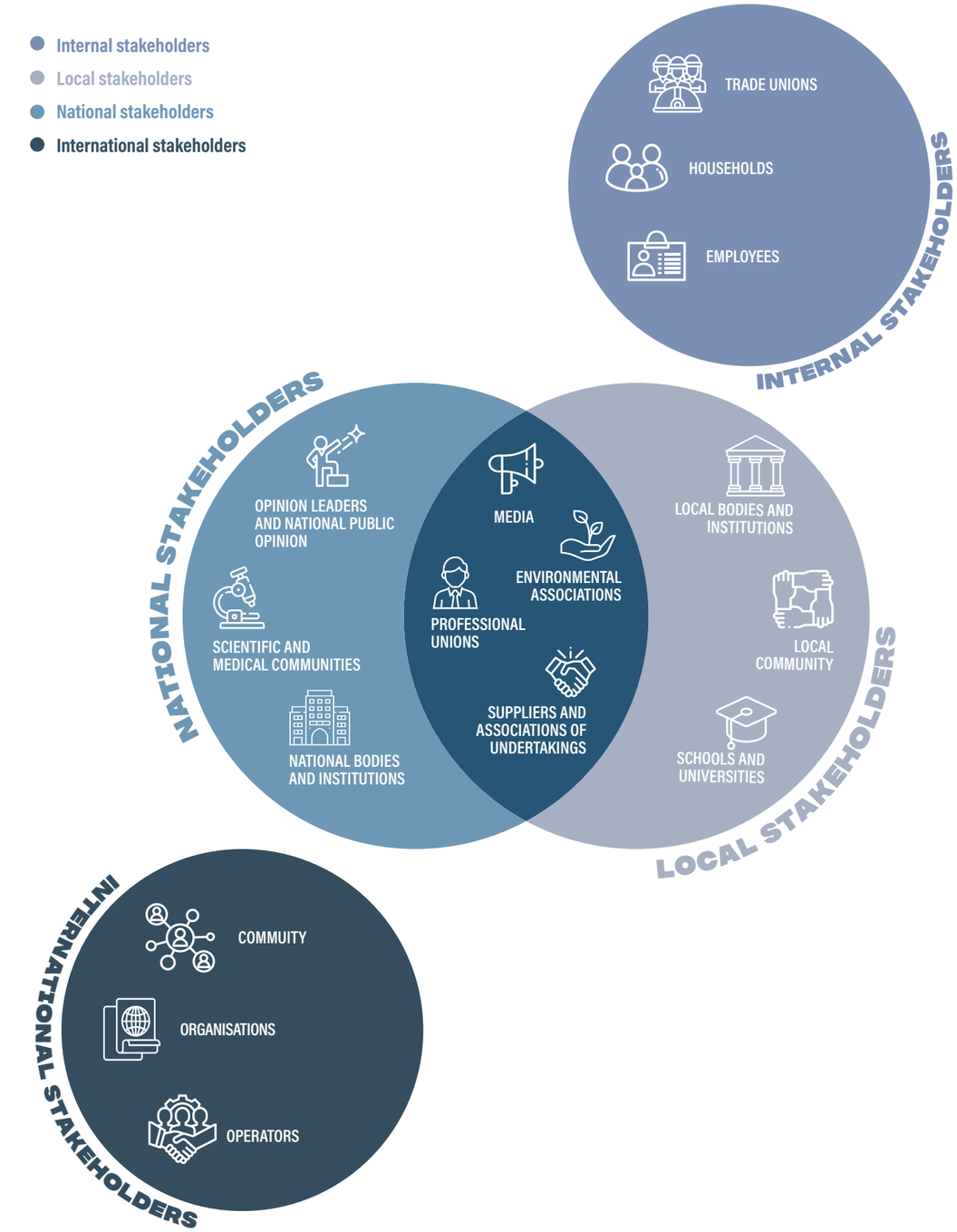


08.

OUR STAKEHOLDERS

The Group recognises as its stakeholders all the engaged parties, institutions, organisations, groups, or individuals that may affect or be affected by the Group's objectives.
Stakeholders are identified and classified according to their degree of influence on corporate decisions and their interest on the Company's activities. These two aspects are evaluated in terms of decision-making powers, legal or contractual obligations and connections with corporate strategies.
Relations with stakeholders are based on ongoing dialogue, sharing objectives and transparency.
The tools in use are customised based on the type of Stakeholder to listen, inform, and engage, aiming at collecting expectations, needs and communicate the Group's achievements and programs.
The Group is truly committed in the Stakeholder engagement process and pays primary attention to maintain constant relationships with the stakeholders.
The Covid-19 outbreak has changed our way to reach the Group's Stakeholders. Many engagement activities during 2020 have been performed online or remotely, with limited chances for direct interaction.

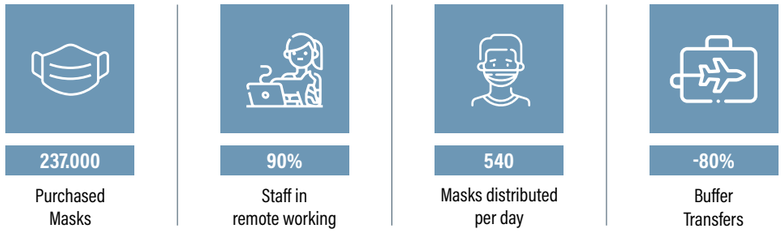
- Internal stakeholders
- Local stakeholders
- National stakeholders
- International stakeholders



CARE FOR OUR PEOPLE

STANDING TOGETHER TO FIGHT COVID-19

In 2020, the Sogin's Group faced the Covid-19 emergency, which has posed a severe challenge to the world since February. To proactively deal with the most complex situations and adopting voluntary preventive measures, the Company has benefited from the experience on safety acquired over the years. During the so-called stage 2, the Company ensured a safe, progressive return of the staff, the sanitation of surfaces and ventilation systems, the rearrangement of the work spaces and implemented a thermal screening system at the entrances of its offices and premises.



JOINT COMMITTEE FOR COVID-19 EMERGENCY

In the first months of 2020, the "Joint Committee under item 13 of the Protocol of 14 March 2020" was established to face the COVID-19 emergency, in line with the "Joint Regulation Protocol for measures to tackle and limit the COVID-19 outbreak in the workplaces", ratified by the Social Parties before the Presidency of the Council of Ministries on 14 March 2020 and subsequently updated on 24 April 2020. The Committee played a relevant role in promptly defining the enforcement of the special legal provisions adopted during the emergency and to carry out regular monitoring of the enforcement of the measures to ensure the safety of workers.

The Company prioritised internal information and communication to inform its staff about the measures in place to face the emergency. For this purpose, the Group implemented an SMS service and updated its web and social channels with relevant information on the preventive measures adopted by the Company to prevent the pandemic spreading.

An extraordinary remote working plan was launched to allow the employees - most of the non-operational staff and part of the operational one - to work remotely. New tools have been adopted to promptly reach any groups of our fragmented community and align their behaviours to the corporate provisions. All the resources of the Group have been guaranteed access to Microsoft Teams, the platform used by the Company to update and inform the staff and disseminate the new corporate processes in virtual mode.

Along the use of Microsoft Teams, Microsoft Stream was also implemented. This new video-sharing platform allowed the Group to spread video tutorials on the safety measures in place to protect the workers' health. All these new tools and the Intranet portal acted as a cohesive element for the corporate community to disseminate the latest news on institutional and corporate measures to tackle the emergency, along with legal updates and solidarity initiatives.

SURVEY "WORKING IN COVID-19 TIMES IN THE ROOM WITHOUT BORDERS"

Any Company can use a crisis as an opportunity to improve its corporate culture and processes. Following this principle, Sogin developed the survey "Working in Covid-19 times in the room without borders" and distributed online to the staff in April 2020.
41% of the Group's staff joined the survey and 91% of the interviewees defined the remote working approach as a quite adequate/totally adequate measure. The e-mail is the most used tool so far, but 80% of the staff declared to use the Microsoft Teams platform always or often. Thanks to the new tools, for 44% of the interviewees relationships with their colleagues remained unchanged, while for 13% of them they improved. Approximately 80% of the interviewees declared to be proud of being part of a Group that actively supported the Civil Protection Body and the healthcare authorities during the Covid-19 emergency.

INESSERE

In June 2020, Sogin launched the project "InEssere", aimed at improving the wellbeing of the Group's staff. The project featured two initiatives: InSalute and InForma.

InSalute included three screening campaigns designed to reduce the risk of Covid-19 contagion addressed to the staff working in the central office. During the first campaign - launched in October - more than 70% of the staff underwent serological tests. The second and third campaign were carried out in November and December with the execution of rapid tests. In both cases, approximately 40% of the staff took part in the campaign.
The InSalute campaign followed in 2021 with monthly screenings.
In November, the staff of Rome's offices was also involved in a blood donation campaign promoted by EMA-ROMA within the framework of InSalute. Voluntary screenings were also carried out across the sites to tackle the spread of Covid-19 and promote prevention measures.

COVID SWABS - SOGIN 2020	
Site	**No. of Swabs**
Impianto di Bosco Marengo	66
Centrale di Trino	85
Impianto di Saluggia	109
Centrale di Caorso	161
Impianti di Casaccia	105
Centrale di Latina	108
Centrale del Garigliano	147
Impianto di Rotondella	53
Sede di Roma	671
TOTAL	**1.505**

The **InForma** programme was designed to actively consolidate the psychological and physical balance of workers. It started with two webinars "Aware nutrition and lifestyles for the long-term psychological and physical wellbeing of workers" and "Strengthening the immune system: a developing principle between ancient knowledge and modern science". Over the year, the programme followed with the K People Active Plus course, divided into 12 video tutorials focused on postural exercises and stretching and 3 live webinar featuring the Eukinetica master trainer to monitor progress and offer ergonomic advice.

NOISOGINGROUP: INFORM, COMMUNICATE AND INVOLVE THE GROUP'S STAFF

NoiSoginGroup is the intranet portal designed to inform, communicate and involve the Group's staff while integrating internal services, thus overcoming the gap between Sogin and Nucleco and enhancing the community nature of the Group. During the national lockdown, NoiSoginGroup, Microsoft Teams and Microsoft Stream contributed to creating cohesion and providing information to all the corporate community. The homepage featured the banner "Info Covid-19", collecting all the legal provisions issued by the government and the regions.

NoiSoginGroup includes the publication of the Legal Environmental Note - to provide updates on the environmental aspects of corporate activities, the Legal News - concerning any new legal provisions -, and the Journal on Workplace Safety - focused on health and safety on the workplace. Such contents are updated monthly.

Throughout 2020, some internal communication tools became digital and accessible to the staff in remote working. Among these, there is Sogin News, the quarterly magazine published by the Sogin Group, and the Legal News, both developed on the Sway platform and optimised for laptops, tablets and smartphones.

HEALTH AND SAFETY OF WORKERS

For Sogin, the safety and health of workers have always been a priority corporate asset. Each operation is carried out in compliance with the existing legal framework on safety and in line with the sector specific guidelines on decommissioning and radioactive waste management.
Over the years, Sogin has spread the culture of safety among its employees and has developed an effective risk management system. Safety is one of the subjects taught in the training courses delivered to all the employees of the Group, which have to know both conventional safety measures and those strictly related to the radiological aspects of the operations they carry out in the sites with radiological restrictions.

THROUGHOUT 2020, THE COMPANY IMPLEMENTED THE 8 POINTS OF THE IMPROVEMENT PLAN FOR SAFETY:

1. **COMMUNICATION: Regular publication of safety bulletins to inform the employees about the new regulations applying on corporate activities;**
2. **IMAGE: Regular maintenance and update of signs and panels, and adaptation of clothing and helmets to the corporate standards to keep the level of awareness among workers high.**
3. **CULTURE: Training courses on safety culture for workers and managers, such as the Company participation to the "PRINT" memorandum of understanding, ratified with the other companies of the electric sector such as Enel, TERNA, Edison, and ACEA to define the actions to be implemented in case of regulatory updates and procedures to adopt in the event of electric risk in interchange and border spots;**
4. **INFORMATION, LEARNING AND TRAINING: to provide regular updates on safety and health, several training courses were held for the corporate staff;**
5. **MONITORING: Performed through a set of indicators and measured on a regular basis. Statistical indicators on Sogin work injuries and Sogin contractors' injuries are measured on a monthly basis;**
6. **CORPORATE STANDARDISATION: implemented through constant confrontation among Prevention and Protection Officers (RSPP), Safety Coordinators during Execution Operations (CSE) and corporate safety on the risk assessment methodologies adopted and implemented and/or planned prevention and protection measures; more specifically, through regular meetings that became more frequent during the Covid-19 pandemic;**
7. **DIGITISATION OF SAFETY MANAGEMENT: use a specific software to manage the health and safety in the Group's sites, especially in terms of equipment, machine and plant maintenance, management of personal protection equipment (PPE), assessment of chemical risk for health and safety, and injury management. Moreover, Sogin operates a common centralised platform for the distribution of PPE, that ensures time and cost efficiency and product quality in terms of compliance with applicable laws;**
8. **CONTRACTORS' SAFETY: qualification and monitoring process on Contractors' safety and health compliance, to maximise safety during contract execution.**

JOIN BILATERAL COMMITTEE ON SAFETY

Aware of the relevance of safety and environmental topics in the electric sector, corporate and trade unions representatives instituted a Joint Bilateral Committee on Safety. The Committee aims at deciding improvement actions to be implemented by Sogin and joint initiatives to keep ensuring the highest safety standards.
In this framework, Sogin increased the number of defibrillators across its sites and strengthened the network coverage to enhance the communication channel in case of critical events.

> **LIVE EVENT 2020 "HEALTH AND SAFETY DURING COVID-19"**
> On 7 May 2020, as part of the global campaign for the promotion of health and safety in the workplace, the Sogin Group held an online event on the Teams platform.
> The event, which involved all corporate employees, was intended to share the safety measures implemented by the Group to face a difficult time like the COVID-19 emergency, including sanitisation measures and a new organisation of work. In this regard, the findings of the survey "Working during COVID-19", administered to the corporate staff in April 2020, were also presented.
> Moreover, in the presence of the Group's Top Managers and Safety staff, the Group's commitment on the territory, specifically those most affected by the virus, was presented.

CONVENTIONAL SAFETY

As in the previous two years, in 2020, no occupational illnesses have been recorded among the employees of the Sogin Group and the suppliers that have worked in the sites.
The following tables report the injury rates recorded by Sogin, Nucleco and third contractors.
The injury rates account for the total number of accidents occurred on the journey to or from work and at work during the period of reporting. Starting from 2018, the events which have resulted in up to 3 days of absence from work are also included among the injuries; said events, following the issue of Circular Letter no. 42 of 12 October 2017, must be communicated to INAIL. In the past, this communication obligation was only required for the accidents involving an absence of more than 3 days from work.

INJURY INDEXES – SOGIN EMPLOYEES

	2020		2019		2018	
	N.	**RATE**	**N.**	**RATE**	**N.**	**RATE**
Registrable Injuries at work of Sogin employees (including accidents occurred on the journey to or from work) Ratio between registrable injuries at work and the hours worked (multiplied by 200,000)	**2**	**0.28**	**6**	**0.87**	**9**	**1.31**
Injuries resulted in working days lost ratio between the number of registrable injuries at work with working days lost and the hours worked (multiplied by 200,000)	2	0.28	6	0.87	9	1.31
Injuries at work with serious consequences Ratio between the injuries at work with significant consequences (excluding deaths) and the hours worked (multiplied by 200,000)	0	-	0	-	0	-
Deaths Ratio between the number of deaths and the hours worked (multiplied by 200,000)	0	-	0	-	0	-
Accidents to and from work (including accidents occurred on transportations not provided by Sogin)	2	n.a.	5	n.a.	6	n.a.
Ore lavorate	**1,450,944**	**n.a.**	**1,382,367**	**n.a.**	**1,369,730**	**n.a.**

INJURY INDEXES – NUCLECO EMPLOYEES

	2020		2019		2018	
	N.	**RATE**	**N.**	**RATE**	**N.**	**RATE**
Registrable Injuries at work of Nucleco employees (including accidents occurred on the journey to or from work) Ratio between registrable injuries at work and the hours worked (multiplied by 200,000)	**2**	**1.10**	**7**	**4.14**	**3**	**1.80**
Injuries resulted in working days lost ratio between the number of registrable injuries at work with working days lost and the hours worked (multiplied by 200,000)	2	1.10	7	4.14	3	1.80
Injuries at work with serious consequences Ratio between the injuries at work with significant consequences (excluding deaths) and the hours worked (multiplied by 200,000)	0	-	0	-	0	-
Deaths Ratio between the number of deaths and the hours worked (multiplied by 200,000)	0	-	0	-	0	-
Accidents to and from work (including accidents occurred on transportations not provided by Sogin)	1	n.a.	1	n.a.	0	n.a.
Hours worked	**364,878**	**n.a.**	**337,877**	**n.a.**	**333,691**	**n.a.**

INJURY INDEXES – CONTRACTORS' EMPLOYEES						
	2020		2019		2018	
	N.	RATE	N.	RATE	N.	RATE
Registrable Injuries at work of Nucleco's employees Ratio between registrable injuries at work and the hours worked (multiplied by 200,000), which include:	**5**	**0.99**	**6**	**1.35**	**8**	**1.75**
Injuries resulted in working days lost Ratio between the number of registrable injuries at work with working days lost and the hours worked (multiplied by 200,000)	5	0.99	6	1.35	8	1.75
Injuries at work with significant consequences Ratio between the injuries at work with significant consequences (excluding deaths) and the hours worked (multiplied by 200,000)	0	-	0	-	0	-
Deaths Ratio between the number of deaths and the hours worked (multiplied by 200,000)	0	-	0	-	0	-
Accidents to and from work	0	n.a.	1	n.a.	0	n.a.
Hours Worked	**1,010,973**	**n.a.**	**889,941**	**n.a.**	**912,443**	**n.a.**

RECORDED INJURIES AT WORK – SOGIN EMPLOYEES – DIVIDED BY GENDER AND SITE									
	2020			2019			2018		
	Total	Women	Men	Total	Women	Men	Total	Women	Men
Total recorded injuries	**2**	**0**	**2**	**6**	**3**	**3**	**9**	**2**	**7**
Caorso	0	0	0	0	0	0	1	0	1
Garigliano	0	0	0	0	0	0	1	0	1
Latina	0	0	0	0	0	0	0	0	0
Trino	0	0	0	0	0	0	0	0	0
Bosco Marengo	0	0	0	0	0	0	0	0	0
Casaccia	0	0	0	0	0	0	2	0	2
Saluggia	0	0	0	0	0	0	2	1	1
Rotondella	0	0	0	0	0	0	0	0	0
ISPRA-1	0	0	0	0	0	0	0	0	0
Rome's Headquarters	2	0	2	6	3	3	3	1	2
Foreign Offices	0	0	0	0	0	0	0	0	0

RECORDED INJURIES AT WORK – SOGIN'S CONTRACTORS' EMPLOYEES – DIVIDED BY GENDER AND SITE									
	2020			2019			2018		
	Total	Women	Men	Total	Women	Men	Total	Women	Men
Total recorded injuries	**5**	**1**	**4**	**6**	**1**	**5**	**8**	**0**	**8**
Caorso	0	0	0	2	0	2	1	0	1
Garigliano	0	0	0	2	0	2	0	0	0
Latina	1	0	1	1	0	1	0	0	0
Trino	0	0	0	0	0	0	1	0	1
Bosco Marengo	0	0	0	0	0	0	0	0	0
Casaccia	1	1	0	0	0	0	0	0	0
Saluggia	0	0	0	0	0	0	1	0	1
Rotondella	3	0	3	0	0	0	5	0	5
ISPRA-1	0	0	0	0	0	0	0	0	0
Rome's Headquarters	0	0	0	1	1	0	0	0	0
Foreign Offices	0	0	0	0	0	0	0	0	0

RADIOLOGICAL SAFETY

On 27 August 2020, the Legislative Decree no. 101 of 31 July concerning basic safety measures against the dangers resulting from exposure to ionising radiations (i.e., industrial, medical and research field and specific natural radiations) was enforced. The Decree collects all the Italian regulations on radiological protection in a consolidated text (Legislative Decree no. 230/1995, Legislative Decree no. 187/2000 and Legislative Decree no. 52/2007). Moreover, the provision regulates the safety of nuclear power plants, installations and activities related to the use of radioactive materials, by also envisaging new rules for the management of spent fuel and radioactive waste and introduces measures to protect against radon exposure along with the role of "Radiological Protection Expert" (previously called "Qualified Expert").

Decommissioning and radioactive waste management operations are carried out according to specific rules and regulations aimed at guaranteeing the radiological protection of employees, people, and the environment, in line with the highest standards of nuclear safety. The potential radiological impact resulting from usual operations is constantly monitored under the Legislative Decree 230/1995 and subsequent amendments and integrations, through specific environmental and physical surveillance systems.

The following tables summarise the doses of radiation exposure of the employees of Sogin sites. The reported doses have been defined by the Qualified Expert, namely the person appointed by the employer to ensure the health surveillance of corporate staff and the radiological safety of people and environment. He/she works in concert with the competent doctor who guarantees the workers' health surveillance on behalf of the employer.

The limit on the effective dose for workers' exposure is 20 mSv/year and it includes dose contributions from external radiations and internal contamination. The results of the physical surveillance on the employees working in Sogin sites are under the limits set out in the Legislative Decree 101/2020.
External radiation is produced by radiation sources that are external to the body, while internal radiation is caused by direct contamination of the body with radiological substances, ingestion, inhalation and/or dermal absorption.
The maximum effective individual dose is the dose absorbed by the exposed employee, which, due to the work performed over the year in the abovementioned site, was exposed to a greater exposure resulted from the sum of external and internal radiations.
A Millisievert (mSv) equals 0.001 Sievert (Sv). The Sievert is a derived unit of the effective dose, which results from the absorbed dose calculated on the type of incident radiation and the specific irradiated organ and/or body tissue, and it is used to calculate the biological effects of the exposure to ionising radiations.

MAXIMUM EFFECTIVE INDIVIDUAL DOSE - SOGIN – 2020		
Site	Maximum Effective Individual Dose	Type of Exposure
	mSv/anno	External/internal radiations
Caorso	0.226	External
Latina	0.707	External
Trino	3.718	External
ISPRA-1	0.002	External
Garigliano	0.250	External
Bosco Marengo	0.100	External
Casaccia	1.110	External
Saluggia	0.650	External
Rotondella	0.900	External

MAXIMUM EFFECTIVE INDIVIDUAL DOSE - NUCLECO– 2020		
	Maximum Effective Individual Dose	Type of Exposure
	mSv/anno	External/internal radiations
Nucleco's Staff	1.80	External
Third Contractors' Staff	0.45	External

INDUSTRIAL SAFETY

Sogin, in line with the regulations and the best international and national practices, manages nuclear and Industrial security for the following purposes:

Protecting people and corporate assets;

- Physically protecting installations, materials and activities;
- Managing information, installations, technologies and materials classified as confidential;
- Managing critical infrastructures subject to specific protection measures for reasons of public safety, order and civil protection;
- Providing mandatory training for employees with security clearance, on classified information, cybersecurity and nuclear security, in partnership with institutions, public bodies, universities and research institutes.

In terms of cyber security and preventive IT measures, Sogin has introduced an information safety management model in line with the international standards and regulatory frameworks to ensure the protection of corporate information and adequate cyber risk management.
After having contributed to its design, Sogin has adopted and contextualised the national cyber security framework based on the NIST model "Framework for Improving Critical Infrastructure Cybersecurity", developed by CIS- Sapienza and by the National Laboratory of Cyber Security in partnership with the Italian Department of Information Security (DIS -Presidency of the Council of Minister).
To comply with the standards of Security Assurance and Resilience, Sogin has established an internal SOC (Security Operation Centre) and appointed a specific working team (CERT - Cyber Event Readiness Team).
In 2020, the Company launched a program to raise awareness on Cybersecurity among the internal staff, though a platform that integrates risk analysis, training and mock tests.
Sogin also held training courses on "Safety management in the nuclear field", pursuant to Prime Ministerial Decree no. 5 of 6 November 2015, and subsequent amendments and integrations. Training was held in Rome headquarters and in the sites.
Moreover, in 2020, Sogin continued its collaboration with the International CBRNe (Chemical, Biological, Radiological, Nuclear, and explosive), Master Courses of Tor Vergata University, under the guidance of the Radwaste Management School.
In terms of training, Sogin collaborates with several Research and Training Institutes, such as the "Sant'Anna" School of Advanced Studies in Pisa. This year, the training module: "Nuclear Security; the Italian context as case study: technical, legal and ethical implications" was also included in the school's Master Program in International Security Studies – (Corso Ethics of Security). This module focused on physical protection against "malicious acts", the national intelligence and security system, cyber security, and the new hybrid threats.

TRAINING

The main objective of human resources management is to develop and enhance professional skills, both technical and managerial, in the field of decommissioning of nuclear sites and radioactive waste management, and to foster paths of growth and people' s development.
Sogin organises training and refresher courses in consideration of the role, skills and potential of each resource and the organisational needs. Again in 2020, the Company provided training to respond to the needs arising from organisational changes, the updating of reference standards, the development of new technologies and, more generally, the evolution of the reference context.
The Radwaste Management School (RaMS), the Sogin Group's training centre, in 2020 ensured a widespread training activity, providing part of the training online. For example, following the implementation of Legislative Decree no. 101/2020, training and refresher courses were designed and provided for all "exposed" workers and supervisors/managers.
The training activities were carried out as follows:

2020 TRAINING
Specialised technical training. The Company continue provided a specific training on the digitisation of corporate processes and technical issues of the core business, in partnership with the Radwaste Management School. Main involved staff: ▪ Administrative/managers; ▪ corporate welfare; ▪ environment (remote detection, environmental remediation, environmental protection, monitoring systems); ▪ risk management; ▪ waste management; ▪ IPOD Works Software; ▪ laboratory certifications; ▪ project management through software.
Soft skills training: aimed at increasing the collaboration among groups, improving time management and public speaking skills
Legal update on the following topics: ▪ Training to provide legal update on radiological protection, as introduced by the new Legislative Decree no. 101/2020, administrative liability of legal bodies/persons pursuant to Legislative Decree no. 231/01, Personal data management (DPO), ADR regulations;formazione sugli aggiornamenti in materia di gestione della sicurezza sui luoghi di lavoro (ISO 45001); ▪ Training to provide update on occupational safety and health measures (ISO 45001); ▪ Specific training on the management of the Covid-19 emergency; ▪ Training on Quality, Conventional, Industrial, and Digital Safety
On-the-job training: aims to share the know-how to the operational staff working in the plants.

RaMS: THE GROUP'S TRAINING CENTRE

The Radwaste Management School (RaMS) is the training centre of the Sogin Group which ensures high-level professional updating and promotes managerial and technological innovation based on the experience and specialised know-how related to the issues of decommissioning and waste management radioactive, which make the Group a major player in the national and international industrial panorama.
Founded in 2008, it is also open to professionals coming from institutions and companies and represents a reference point for safety management in industrial processes.
The RaMS is part of the strategic assets for achieving the mission of Sogin and Nucleco. Nuclear decommissioning and radioactive waste management are complex activities that require long time to develop and high professional and multidisciplinary skills.
The development and dissemination of a highly specialised know-how is part of the Sogin strategy to guarantee maximum safety and implement an integrated knowledge management, education, and training system. This is done to transfer skills to future operators and satisfy the increasing - international and national - demand for specialised knowledge in this sector.

Training the Sogin Group's staff by paying specific attention to safety, radioactive waste and nuclear fuel management

Ensuring integration, enhancement, and sharing of the knowledge management

Opening a dialogue with universities and training centres to strengthen the training network

Training "future operators", namely graduated and high school students who specialised in decommissioning and radioactive waste management

The training programmes offered by the Radwaste Management School (RaMS) ensure the best standards of innovation, multi-disciplinarity and a specific focus on decommissioning and radioactive waste management. Moreover, they include training on technical and scientific matters, such as focuses on nuclear plants or radioprotection. Programmes are constantly updated, to meet the mandatory requirements and training obligations of the Sogin Group, mostly in accordance with the integrations of the Consolidated Act on the protection of health and safety in the workplace (Legislative Decree No. 81/2008) and, for the subjects specifically related to nuclear activities, according to the Legislative Decree No. 101 of 31 July 2020 implementing the Euratom Directive 2013/59, concerning fundamental safety standards to ensure protection against the exposure to ionising radiations.

According to ISIN, the **RaMS** is recognised as the "competent institution to provide specific training courses to the staff of Sogin Group and the external companies working with the Company", acting as body belonging to **Sogin**.

OUR CERTIFICATIONS		
QUALITY SYSTEM CERTIFICATION DNV·GL ISO 9001	ENVIRONMENTAL SYSTEM CERTIFICATION DNV·GL ISO 14001	SAFETY SYSTEM CERTIFICATION DNV ISO 45001
UNI EN ISO 9001/2015 (Quality Management system).	ISO 14001/2015 (Environmental Management System).	OHSAS 18001/2007 (Safety and Health in the Workplace) for sector EA37 (training).

The school is also constantly committed in developing partnerships with accredited bodies, universities, scientific associations, research, and development bodies, also at an international level. The institution is involved in university training, through seminars and graduate and post-graduate courses. Throughout 2020, due to the pandemic, the school reduced the number of activities with external institutions.
The RaMS promoted and implemented the training programme "**Insieme ce la faremo**" **(Together we will make it)** on Teams. The program was launched on 20 March, eight days before the first national lockdown.
The programme, featuring 7 courses taught by 16 professors, involved almost all the staff of the Group, for 35,000 hours of training provided over the first half of 2020.
Moreover, in June 2020, the Radwaste Management School launched "**RaMS Square**", a space designed to allow the Group sharing further knowledge on the topics of the programme "Insieme ce la faremo". RaMS Square included 11 online meetings - 4 in the first edition and 7 in the second -, aimed at studying the topics of the programme: the mobile App "Immuni", A.I., safety, sustainability, the safe use of social platforms and instant messaging and the major new legislations.
The RaMS also organised online refresher courses for the staff.

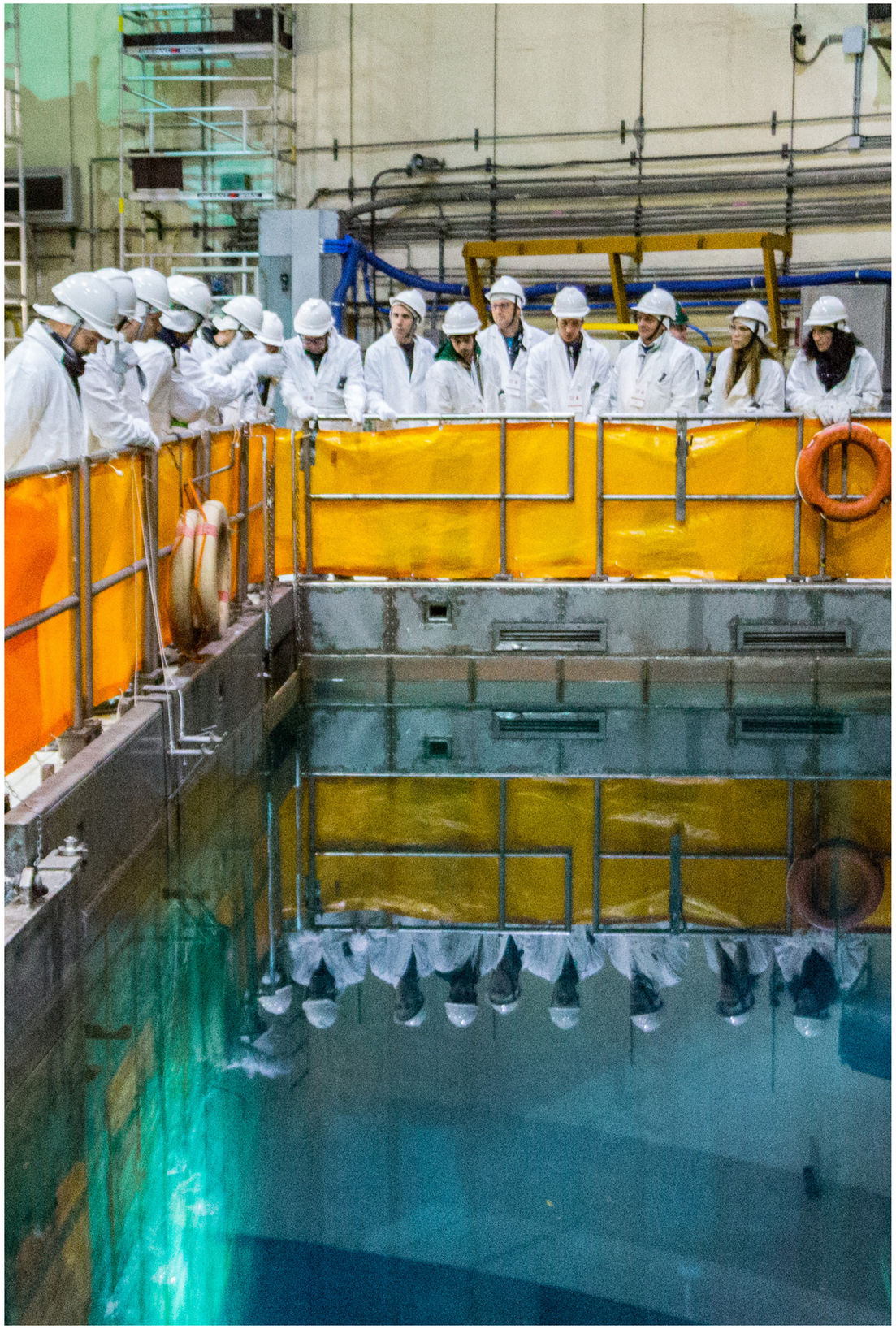
PERFORMANCE RaMS 2020

950	235	+50%	1.754	770
Trained People	Provided Courses	Training Hours compared to 2019	Teaching Hours	Teaching hours provided by the Group's staff

TRAINING HOURS PROVIDED IN 2020	
Hours divided by type and target	**Hours**
Nuclear Safety	**25,636**
Hours provided to Sogin Staff	20,328
Hours provided to Nucleco Staff	5,308
Hours provided to the staff of external companies and organisations	0
Safety in the Workplace	**11,395.5**
Hours provided to Sogin Staff	11,383.5
Hours provided to Nucleco Staff	12
Hours provided to the staff of external companies and organisations	0
TOTAL	**37,031.5**

HOURS DIVIDED BY GENDER			
	Nuclear Safety	**Safety in the Workplace**	**Total**
Women	**7,185**	**2,194**	**9,379**
Sogin	6,247	2,182	8,429
Nucleco	938	12	950
Men	**18,451**	**9,201.5**	**27,652.5**
Sogin	14,081	9,201.5	23,282.5
Nucleco	4,370	0	4,370
TOTAL	**25,636**	**11,395.5**	**37,031.5**

HOURS DIVIDED BY PROFESSIONAL PROFILE			
	Nuclear Safety	**Safety in the Workplace**	**Total**
Managers	**168**	**58**	**226**
Sogin	168	58	226
Nucleco	0	0	0
Executives	**3,330**	**1,596**	**4,926**
Sogin	3,082	1,596	4,678
Nucleco	248	0	248
White Collars	**15,983**	**6,556**	**22,539**
Sogin	12,443	6,544	18,987
Nucleco	3,540	12	3,552
Blue Collars	**5,955**	**2,955.5**	**8,910.5**
Sogin	4,435	2,955.5	7,390.5
Nucleco	1,520	0	1,520
Fellowship/Traineeship	**0**	**0**	**0**
Sogin	0	0	0
Nucleco	0	0	0
Employees seconded by ENEA	**200**	**230**	**430**
TOTAL	**25,636**	**11,395.5**	**37,031.5**



CORPORATE WELFARE

INCLUSIVENESS AND EQUAL OPPORTUNITIES

Again in 2020, Sogin renewed its membership in "Valore D", the first Italian association of companies that promotes gender balance and an inclusive organisation to foster the corporate wellbeing and growth.
The Mentorship Power 2019 training programme, organised by Valore D, ended in February 2020 and saw the participation of about 70 companies and more than 200 subsidiaries, The training programme, launched in 2019, was designed to support the professional growth of middle/senior management through confrontations among companies. The programme involved 114 mentors and 114 mentees, supported by a coach. Again in 2020, Sogin and Nucleco took part in the programme by providing a new mentor and mentee to exchange their experiences with other companies and provide an opportunity to grow.
Throughout the year, Sogin also took part in a number of initiatives of the association, such as: training days (10 per year); one of the following 3 training courses - according to the student's preference - lasting 2/3 days: Young Talent, Middle Manager, Maturity Talent and Senior Smart Manager aimed at supporting professional growth, role identity and the development of new leadership models; 3 Sharing Labs, to analyse and share topics linked to HR agility.
To promote inclusion during remote working Sogin has joined the #iolavorodacasa (I work from home) project, a series of online Talks promoted by Valore D on a number of themes like: "Crisis and Transformation" with Massimo Recalcati, "From STEM to STEAM. How science becomes human" and "Female independence: The silent victim of Covid-19". These initiatives were intended to offer moments of reflection and closeness among colleagues during the pandemic by creating a corporate video channel dedicated to these publications called "Moments Of Value".

THIRD EDITION OF NOISOGINWELFARE

In 2020, the Company also continued the NoiSoginWelfare project, aimed at making use of the productivity share of the Results Bonus (PdR) in a totally tax-free form, reducing the tax wedge by 100%.
The project was preceded by the survey "#INSIEMEMIGLIEREREMO - È tempo di #noisoginwelfare: tu cosa hai da dirci?" (Together we will do better - It's time for #noisoginwelfare: what do you have to tell us?") which collected feedback and suggestions from the corporate staff, based on the experience of the past years, to improve the project.
A total of 14% of employees responded to the survey, equally distributed by gender and classification, mostly consisting of staff working in the central office. 24% of the respondents had, last year, converted part of their performance bonus to goods and services via the NoiSoginWelfare platform. Almost everyone expressed satisfaction with the service in terms of quality, timing and method of use. Of these, 57% confirmed that they would also benefit from the services offered in 2020, whilst 43% declared themselves to be uncertain, although not expressing dissatisfaction with the previous editions. Among the latter, 57% proposed extending the time window for service use beyond 4 months, 20% called for an increase in the conversion rate to over 55%, while another 20% suggested the introduction of new categories of goods and services.
The 2020 edition has, therefore, introduced significant innovations precisely on the basis of what the survey highlighted. First of all, the incentive recognised by Sogin for those who convert the B component of the PdR to the company welfare platform rose from 14% to 15%. This incentive was added to the tax benefit of complete detaxation of the converted bonus share.
To raise awareness and inform workers about welfare during the year, online information moments were organised and a web-point service was set up to give customised advice. In addition, as in 2019, the project was supported by the Welfare Ambassadors, 17 Group resources distributed between the central office and the sites, who illustrated the opportunities of the services offered by corporate welfare to colleagues who requested them.
In 2020, 15% of the potential beneficiary population decided to convert their result bonus.
During the year NoiSoginWelfare also included a further initiative. In fact, on 29 July the Company signed an agreement with the national trade unions by which, against the achievement of qualitative objectives instrumental to the progress of decommissioning, an economic amount was foreseen, as a "decommissioning productivity increase", and disbursed, in advance, in October 2020 and, settled in January 2021. Workers were able to choose how to use the additional bonus by converting the amount into a budget that could be spent on the online platform.

DAI. AIUTA CHI CI AIUTA

In 2020, the Sogin Group joined the initiative "DAI. AIUTA CHI CI AIUTA", promoted by the national trade union confederations in agreement with the National Department of Civil Protection and aimed at strengthening the intensive care facilities of the National Health System and personal protection devices. In April, Sogin organised a fundraising event in which each worker could participate by authorising the Company to deduct an hour's pay from their first paycheck. A total of 313 people from the Group took part in the initiative.

INDUSTRIAL RELATIONSHIPS

Sogin confirms that maintaining the stability of work relations and investing on internal skills are two priorities in the corporate management approach. During 2020, the commitments ratified with trade unions through the agreements of 6 November and 5 December 2018 have been achieved. This shows the major strategic role played by industrial relationships in the industry policies of Sogin Group.

SOLIDARITY HOLIDAYS BANK

To face the health emergency caused by the COVID-19 outbreak, on 20 April 2020, Sogin ratified a new trade agreement to establish the Solidarity Holidays Bank. This agreement introduced new flexibility instruments and new offices that promote sustainability in the work organisation and foster solidarity among workers.

PEOPLE CARE

In 2020, Sogin continued providing support to its employees through services aimed at combining work and private life.
In October 2020, Sogin allocated the remunerations related to the second half of year 2019 for a total amount of EUR 14,532.34, and in November 2020, the Company allocated the remunerations related to the first half of 2020, for a total amount of EUR 7,039.37.
The contributions requested and allocated cover school meals (EUR 11,994.05), university fees (EUR 5,434.55), nursery (EUR 2,581.64) and schoolbooks (EUR 1,561.47).

HEALTHCARE AND OCCUPATIONAL INJURIES

For Sogin Group employees and dependent family members, insurance coverage for health care is provided by the Enel Group's Supplementary Healthcare Fund for Employees (FISDE). In the field of accident insurance, the Company has taken out accident policies reserved for staff on duty. The same type of supplementary health care is provided for managers, but with the Associazione Sanitaria Integrativa Dirigenza Energia e Multiservizi (ASEM) (Integrated Energy and Multiservices Management Healthcare).
In response to the epidemiological emergency, in March 2020 an insurance cover was also activated to protect all employees, guaranteeing indemnity and assistance coverage in the event of a diagnosed COVID-19 contagion.
Sogin offers its employees, in implementation of the provisions of the National Collective Bargaining Agreement for the Electric Power Sector, insurance coverage for death or permanent disability because of non-occupational accidents and insurance coverage for the risk of death due to illness.

PENSION FUNDS

In addition to the usual pension schemes, as required by post-2007 regulations, Sogin and Nucleco provide for the possibility for their employees to receive supplementary pension benefits through membership of the Employees' Pension Fund (FOPEN) and the Managers' Pension Fund (FONDENEL). With this membership, the Company recognises an additional contribution calculated on the employee severance indemnities, which is added to the employee's contribution calculated on the same basis. Employees may also join other supplementary pension funds (so-called "open-ended" negotiating funds), with the sole payment of the employee severance indemnity accruing.
As of 31 December 2020, 734 Sogin employees were enrolled in the pension funds (negotiated and closed end), while Nucleco 137 employees, for a total of 871 Group employees, were enrolled in supplementary pension funds.

ARCA SERVICES

ARCA, the leisure association of employees working in the electricity sector, has the task of promoting cultural and sporting initiatives and events aimed at providing moments of aggregation for employees and their families. It also organises trips and holiday packages through preferential agreements with important tour operators. For managers, the service is offered by ACEM, Associazione Culturale Energia e Multiservizi, which takes care of all the recreational aspects of the category.

LOANS AND AGREEMENTS

In line with the actions taken in the electricity sector and within the limits of the available resources stated under the second level trade union bargaining agreement, Sogin grants preferential loans to employees for the purchase or renovation of owned homes and for special personal needs.
Like in the People Care project, many agreements have also been stipulated with commercial businesses (Food & Beverage, Healthcare & Wellness, Shopping, Facilities).

TERRITORIAL ENHANCEMENT

Our activities are in line with our values, mission and vision. They are designed based on a careful evaluation of the context, needs, and necessities of the areas in which we operate.

Sogin kept paying regular attention to the territory, even in a difficult year like 2020. Due to the pandemic, we were not able to open our plants to citizens, families, schools, or associations. Nevertheless, we did it "virtually", to give our contribution in tackling the Covid-19 emergency. We made our skills and experience available to the territories most affected by the virus among those in which we operate.

STERILISATION OF PIACENZA HOSPITAL

During the second half of April, the Sogin Group started a partnership with Piacenza Ausl (Healthcare Unit) to sterilise the premises of the structures under their responsibility. Up to 30 June, four teams of the Group - each consisting of two health physics and chemistry experts - have been carrying out environmental sterilisation operations in the premises of Guglielmo da Saliceto Hospital, for a total of 700 hours of work. The operation involved the sterilisation of the premises that were previously sanitised through the atomisers provided by the Piancenza Ausl. The sanitation involved spraying a mixture of hydrogen peroxide and silver salt to eliminate any possible viruses within the premises.

LOCAL DONATION OF PPE

Sogin Group donated about 87,000 PPE to the healthcare operators, voluntaries of Red Cross and Civil Protection across the territories in which it operates.

60.113	13.868	6.260	6.021	500
Masks	Socks	Gloves	Tyvek suits	Visors and protective glasses

2020: A GIFT FOR THE TERRITORY

During the Christmas period, Sogin Group gave a basket of local products to Sogin and Nucleco employees. Given the difficult time Italy is living, the Company felt it necessary to give a small contribution to support local businesses operating in the Regions where the Company runs its nuclear decommissioning activities: family-owned businesses with an ancient tradition and a great range of genuine and quality products.

HEALTH PHYSICS FOR THE VOLUNTEERS

On 30 October and 13 November, Sogin organised two meetings for the volunteers of Trino Public Assistance Service (PAT). During the meetings, a corporate expert of health physics provided the volunteers with information and practical demonstrations on the radiological protection techniques adopted for nuclear operations. The volunteers had the chance to learn concepts and procedures that can be adopted in the healthcare sector (i.e., use of detectors, specific protection equipment and DPI disposal).

SMEs DAY 2020 - INDUSTRIAMOCI

On 18 December, Sogin opened its virtual gates to 120 students of the P.L. Nervi and Bonfantini institutes of Novara, to show them the Trino nuclear power plant. The students had the chance to know the story of the facility, see the work carried out by Sogin, learn about the decommissioning projects implemented in Trino power plant. The event was made in partnership with Confindustria Novara Vercelli Valsesia, during the XI edition of the "SMEs DAY - Industriamoci", a day for the small and medium enterprises sponsored by Confindustria. Due to the limitations of the pandemic, the 2020 edition of the SMEs day allowed the students - who had already experienced remote learning at school - to meet the companies online.

LET'S CLEAN IN DEPTH: CLEANING THE PONTINE SEABED

In August 2020, Sogin gave its moral sponsorship to the event "Puliamo a Fondo. Pulizia dei fondali marini pontini", organised by the association "Noi & il Mascarello" and the Diving Association "Astrea", to safeguard the marine environments of the Pontine coast. The initiative led to the complete cleaning of the seabed from Fosso Mascarello to Valmontorio, taking 500 kg of polluting waste materials (plastics, metallic objects, etc.) from the marine environment.
By joining this initiative, Sogin wanted to raise awareness about the protection of the marine ecosystem, especially in the areas where the Group operates, and support the spread of a culture of sustainability.

RELATIONS WITH ENVIRONMENTAL ASSOCIATIONS

During 2020, even if in different ways due to the health emergency, there was an ongoing dialogue with the environmental associations operating in the areas hosting the power plants and plants under decommissioning.

ITREC PLANT: FIRE BRIGADE DRILL OF THE COMMAND OF POTENZA AND MATERA

On 11 February, at the ITREC plant of Rotondella, as part of the regional NBCR (Nuclear-Biological-Chemical-Radiological) course for 2nd level operators, an exercise was held on the search for radioactive sources for the Fire Brigade of the command of Potenza and Matera, completed by a visit to the plant managed by Sogin.

INFORMATION, LISTENING AND DIALOGUE

Information, listening, dialogue: these are the three fundamental drivers of Sogin's external communication. Through different media – newspapers, web, TV, and radio -, the Company offers a transparent and accurate picture of the corporate mission and operations and creates partnerships and relationships to disseminate information about its work.

MEDIA

Once again, in 2020, media relationships focused on nuclear decommissioning and radioactive waste management in a circular economy perspective.

1.881
publications on media (about 98%) including positive and descriptive ones

18
press releases

454
press articles

5
conferences and press visits

1.353
web posts

74
TV and radio appearances (72 TV programs and 3 radio programs)

80
accredited journalists and 500 dedicated publications

MAIN MEDIA RELATION ACTIVITIES

- Press conference on 28 January at the Caorso nuclear power plant on the departure of the first of 33 shipments planned for the transfer of around 5,600 casks containing resins and radioactive sludge, from the Piacenza plant to the Slovakian plant of Bohunice;
- Management in the making of the TG1 report on Sogin's commitment to the sterilisation of the Piacenza hospital, which was broadcast in the evening edition of 15 April 2020, one of the initiatives promoted by the Company during the lockdown to support the operators engaged in combating the spread of the Covid-19 virus;
- Press support in the reportage on the decommissioning of the Latina power plant, published on repubblica.it on 16 July and on Il Venerdì di Repubblica on 17 July;
- Press conference of 4 August, at the Latina power plant, in occasion of the start of the dismantling works of the boiler screens of the reactor building;
- Press conference of 11 September for the presentation of the Industrial Plan 2020-2025 of the Sogin Group;
- the press conference of 20 October on the conclusion of the dismantling works of the boiler screens of the reactor building of the Latina plant;
- Publication of the joint press release of 10 December between Sogin and the Extraordinary Commissioner for the remediation of illegal landfills on the ratification of the collaboration protocol for a joint action to safeguard the environmental heritage.

WEB AND SOCIAL

Sogin publishes institutional and general interest content on sogin.it, Sogin's institutional website, nucleco.it, the website of its subsidiary Nucleco and depositonazionale.it, dedicated to the National Radioactive Waste Repository project. A total of 65 news items were published in 2020.
At the same time, the Group is present on social media to inform and communicate with its Stakeholders, creating new spaces for dialogue with a view to transparency and sharing. A total of 395 posts were published on the Group's social profiles in 2020, with increasing interaction with employees' personal profiles on LinkedIn. The growing trend of followers is confirmed, which at the end of 2020 is over 9,400 for the Sogin profile.

SOCIAL MEDIA PRESENCE TREND OF SOGIN GROUP

2012	2014 - 2015	2019
You Tube Channel SoginChannel	LinkedIn profili Sogin, Nucleco e RMS	Instagram @opengate_sogin
OBJECTIVES	**OBJECTIVES**	**OBJECTIVES**
▪ Information and transparency through multimedia contents on decommissioning, National Repository and Technology Park and other corporate initiatives; ▪ Increasing and enhancing the brand reputation.	▪ Enhancing the activities and the skills of the Sogin Group on decommission & waste management; ▪ Increasing and enhancing the brand reputation; ▪ Stakeholders' engagement; ▪ Increasing the website traffic.	▪ Giving visibility to the initiatives implemented by Sogin Group; ▪ Creating a space on social media to foster sharing and engagement; ▪ Increasing and enhancing the brand reputation; ▪ Increasing the website traffic.

Sogin Group's digital communication in 2020 was characterised by 4 main events, each one recalled by a hashtag.

- **#Sogin20, "Scatta il tuo 20!" social contest.**
  To celebrate Sogin's 20th anniversary, among other initiatives, the Company launched its first photo contest on social media "Scatta il tuo 20!". The photo contest was intended to celebrate and highlight the work that the people of Sogin and Nucleco carry out to ensure national nuclear safety.
  To participate in the contest, people had to post a photo depicting the number 20, made with objects in use at their workplace. All photos were posted on @opengate_sogin with the hashtag #Sogin20 to collect the "likes" required to win. The contest was launched on 7 February 2020 and the winning photos were announced in early July.

Winning photo of the contest "Scatta il tuo 20!" by Giovanni

- **#InsiemeCeLaFaremo, story of the local support provided during the Covid-19 epidemiological emergency**
  On its web platforms and social channels, Sogin Group conveyed all the initiatives and concrete actions undertaken to counter the spread of the Covid-19 pandemic and support the medical sector involved in the emergency. Through the various initiatives, Sogin's commitment was accompanied by an encouraging video message to health workers, #InsiemeCeLaFaremo, published on the YouTube channel and on the Group's social profiles.

Web post on the sterilisation activity carried out by the Sogin task force in a Piacenza hospital

Throughout the emergency period, by constantly monitoring the websites and social profiles of the main institutions, the Group contributed to giving the widest possible visibility to the new government measures. Moreover, it supported the dissemination of the information and awareness campaigns launched by the Presidency of the Council of Ministers, the Ministry of Health and the Istituto Superiore di Sanità, as well as other relevant initiatives for the Group's employees and stakeholders.

- **#SoginSostenibile, communication on sustainability**
  Alongside the implementation of the editorial plan prepared to enhance the contents of the 2019 Sustainability Report, in 2020, the Sogin Group strengthened its corporate social profiles communication on the initiatives promoted in the field of sustainability, which can be recognised with the new hashtag #SoginSostenibile. In this way the foundations were laid for the definition of a brand identity linked to sustainability, which will be further developed in 2021. During the year, 111 #SoginSostenibile posts were published, among which the ones concerning the participation to the European Week for Waste Reduction or the EMAS registration.
  The new sogin.it website, launched in 2019, highlights, even from the homepage, topics related to sustainability and circular economy in nuclear decommissioning and waste management. In 2020, in addition to the publication of a qualitative digital survey on the 2019 Sustainability Report, the company enriched its website with additional contents on the Group's contribution to the achievement of the SDGs of the UN Agenda 2030.

- **#SoginInnova, the digitisation process and the first call for innovation**
  In 2020, Sogin Group promoted on its website and social profiles the first Call for innovative startups and SMEs, "SARR - Advanced Solutions for Radioactive Waste", realised with the support of Digital Magics. With a shared editorial plan and graphics, all the stages of the call were reported, including live tweeting during the digital events of the launch and announcement of the winning startups. For the initiative, the Company created the new hashtag #SoginInnova for all content concerning the corporate digitisation process.

INSTITUTIONAL RELATIONSHIPS

Sogin has built a solid relationship with local and national institutions; this relationship is subject to the reference legislation and are supported by a constant engagement in discussions based on information transparency and accuracy. For this reason, discussion and meetings are regularly held to investigate the most relevant aspects of decommissioning operations.

INSTITUTIONAL VISITS AND HEARINGS

In 2020, due to the limitations imposed by the healthcare emergency, Sogin had to reduce the number of institutional and local visits to its nuclear power plants and facilities.
On 7 September, the Environmental Councillor of Piemonte Region visited Trino nuclear power plant with technicians from the corporate department.
On 2 November, during verifications to assess compliance with the EIA decrees, the EIA Technical Committee (EIA, VAS and Auditing Group no. 7) visited the Saluggia power plant. During the visit, the Committee was presented the site decommissioning progress.
In June 2020, Sogin took part in the hearing with the Bicameral Committee of Inquiry into the waste cycle.

DISCUSSION WITH INDEPENDENT BODIES

Sogin keeps a dialogue with all independent bodies to promote the spread of accurate information on the Italian decommissioning operations.
Through Ministerial Decree, the Ministry for the Environment and Land and Sea Protection established an Environmental Monitoring Centre in Garigliano nuclear power plant. This permanent facility is engaged in monitoring the plant's decommissioning operations.

MEMORANDUM OF UNDERSTANDING WITH THE COMMANDER OF CARABINIERI ENVIRONMENTAL PROTECTION UNIT

Again in 2020, Sogin and CCTA (Commander of Carabinieri Environmental Protection Unit) continued implementing the agreement ratified to collaborate in the recovery and securing of orphan radioactive sources, namely those whose origin and ownership are unknown.
After the identification of an orphan radioactive source and the request to competent authorities (judicial authority, Prefecture etc.) the Commander of Carabinieri Environmental Protection Unit informs Sogin of the detected source. Sogin provides a competent technician to evaluate the best intervention to implement and the operation costs for the management and disposal of the radioactive sources.
The competent authority can exploit Sogin expertise to plan, coordinate and implement the transfer and safe maintenance of radioactive waste.
Moreover, with the memorandum of understanding, Sogin commits in the management and safe maintenance of the radioactive waste resulted from the personal protection equipment used by the Commander of Carabinieri Environmental Protection Unit during joint actions. As for training, the agreement provides for the participation of the Commander of Carabinieri Environmental Protection Unit in Sogin training programmes on safety and radioprotection.

AGREEMENT FOR THE REMEDIATION OF ILLEGAL LANDFILLS

On 10 December 2020, Sogin and the Extraordinary Commissioner for the Remediation of Illegal Landfills, Gen. B. CC. Giuseppe Vadalà, ratified a " Collaboration Agreement for the promotion of environmental sustainability aimed at the implementation of best practices in the remediation sector".
The agreement aims at achieving a collaboration for the remediation of illegal landfills across the national territory in order to guarantee the protection of the environment, the safeguard of the territory and the protection of communities.
Within the framework of the Agreement, Sogin places the professionalism of its technicians and the best instruments at the service of the Extraordinary Commissioner. Where required, to carry out the remediation of the landfill sites identified by the Extraordinary Commissioner, the Company also involves its subsidiary Nucleco.

AGREEMENT WITH THE MINISTRY OF AGRICULTURAL POLICIES ON THE TRACEABILITY OF AGRICULTURAL AND AGRI-FOOD PRODUCTS

On 24 September Sogin signed a collaboration agreement with the Inspectorate for Fraud Repression of the Ministry of Agricultural Policies (ICQRF) to develop innovative solutions that guarantee the traceability of agricultural and agri-food products on the basis of the presence of natural isotopes in them.
The agreement, which has a duration of two years, aims to launch experimental research on the application of radiochemical techniques to verify the accuracy and effectiveness of the requirements relating to the origin of agricultural and agri-food products.
The objective is to codify specific radiochemical techniques to protect and promote food and to obtain a unique fingerprint functional to indicate the place of origin of the product examined.

RELATIONS WITH LOCAL AUTHORITIES

During 2020m, the Company held institutional and technical meetings to update on decommissioning activities at the Municipalities, Provinces and Regions of the territories where its sites are located.
The Piemonte Region promoted technical tables with the municipalities of Saluggia, Trino and other local authorities affected by the compensation and environmental restoration interventions provided both in the EIA measures relating to the sites of Trino and Saluggia and in Article 24 of Legislative Decree no. 1/2012 converted into law no. 27/12.
Below are the main meetings with the territories held during the year, many of which took place by videoconference due to the Covid-19 health emergency:

- Technical Table promoted by the Piemonte Region for compensation and environmental rebalancing measures for the EUREX plant in Saluggia;
- six-monthly table to verify the progress of activities regarding provision 3.a of the Determination of exclusion from the EIA procedure inherent in the Trino power plant project on the updating of radioactive waste management methods and related temporary storage on site;
- technical round table to verify the state of health of projects and interventions regarding environmental "restoration" and "compensation" relating to the Saluggia and Trino sites;
- meeting on "Environmental compensation and restoration" held at the Municipality of Trino;
- institutional monitoring at the Latina plant during the event for the dismantling of screens and boiler of the reactor building;
- meeting with the Mayor of Caorso to discuss the progress of the plant's decommissioning activities;
- meeting with the Mayor of Nettuno to illustrate the decommissioning activities carried out at the Latina plant
- meeting and discussions with a delegation of administrators from the municipality of Nettuno to illustrate the activities undertaken at the Latina power plant;
- technical roundtable for compensation and environmental rebalancing measures for the EUREX plant in Saluggia and the Trino power plant.

SERVICE CONFERENCES

As envisaged by the regulatory provisions regarding the approval of procedures for the remediation of a contaminated site, on 17 November 2020, together with the local authorities involved, Sogin attended the Service Conference organised by the Basilicata Region to discuss the action to be taken to accelerate the decommissioning of the ITREC plant in Rotondella.

COMMUNICATION PLANS IN COMPLIANCE WITH THE EIA PROVISIONS

Compliance with certain provisions contained in the Environmental Impact Assessment (EIA) decrees requires Sogin to draw up communication plans to be submitted in advance to the local authorities for their approval.
Each communication plan provides for different action lines, such as the development of the RE.MO. (Monitoring Network) portal, the preparation of information brochures, the organisation of site visits, press conferences and regional Transparency Tables.
The Regions hosting the nuclear sites under decommissioning summon the Transparency Tables, namely periodic meetings, set up by specific regional resolutions and laws, to promote the dialogue between Sogin and local Stakeholders (citizens, institutions, and associations) and provide information on the progress of decommissioning and radioactive waste management activities, with particular reference to safety and environmental protection issues.
During 2020, due to the health emergency, the Company held only one Transparency Table in Piemonte Region on 30 September 2020.
The meeting was an opportunity for Sogin to discuss the decommissioning and management of radioactive waste in the three Sogin plants located in the region with local Stakeholders.

COLLABORATIONS AND PARTNERSHIPS

The relation with Stakeholders generates share value. This principle inspires the Group's commitment to developing collaborations and partnerships with third parties, like training and research bodies, schools, universities, associations, to disseminate and acquire knowledge, share know-how and experiences in a perspective of continuous improvement.
Therefore, despite the limitations imposed by the Covid-19 pandemic, in 2020, Sogin developed and strengthened its network of national Stakeholders and collaborators.

SUSTAINABILITY

In 2020, Sogin joined the **CSR Manager Network**. This national association gathers professionals from various organisations (businesses, business startups, professional companies, public administrations, non-profit entities) to discuss topics related to sustainability.

Nonsoloambiente. The online magazine focused on environmental news, featured the #SustainableTalks section that investigates the current needs in terms of sustainability and how they are accounted for and addressed. In December 2020, the magazine published an interview on the sustainability program adopted by the Sogin Group. The section "Cariche e poltrone", which introduces the new corporate offices in charge of environmental, sustainability, and CRS at a national and international level, presented Sogin's new sustainability area.

In December, Sogin was invited as a speaker in the CSR Talk of the Osservatorio Socialis, a newspaper dedicated to corporate social responsibility, solidarity, environment, culture, and sustainable development. The event was focused on awarding the winners of the 18th edition of the Socialis prize for university dissertations on CSR and Sustainable Development. A fundamental moment to discuss the problematic Covid-19 pandemic with Institutions, businesses, NGOs, and Universities and collect contributions on a sustainable recovery. These discussions also included the outcomes of a survey conducted by the Universities throughout Italy in partnership with CSA Research. Osservatorio Socialis also published an interview with Sogin in the section "Blog e Interviste" on sustainability.

Fondazione Sodalitas. Founded in 1995 from an idea of Assolombarda and a group of businesses and voluntary managers, it is a foundation committed to making corporate leadership recognisable in terms of sustainable development. Fondazione Sodalitas is the first Italian organisation that promotes corporate sustainability with a multistakeholder approach. At the end of 2020, Sogin took part in the Call For Future, which aimed to inform Institutions and young generations on how the Companies achieve the SDGs proposed in the UN's 2030 Agenda. The project presented by Sogin was selected among **150 corporate actions for a sustainable future** and won the Sodalitas Call for Future "stamp".

Moreover, in 2020, Sogin started a partnership with two CSR relevant institutions worldwide: **ASVIS (Alleanza Italiana per lo Sviluppo Sostenibile – Italian Coalition for Sustainable Development) and GCNI, Global Compact Network Italia**.

KNOW-HOW TRAINING, EXCHANGE, AND SHARING

Rome – Professional Association of Engineers
Sogin regularly cooperates with the Association of Engineers to hold core business information and training activities, including decommissioning and safe maintenance operations and the National Repository siting to store spent fuel and radioactive waste.

Università Cattolica di Milano - MeRIT
In 2020, Sogin took part in the MeRIT, Megaproject Research Interdisciplinary Team, now at its second edition. During the workshop, held on 26 November, Sogin presented the strategies adopted in radioactive waste management by providing detailed information on the AIGOR Project (IT Radioactive Objects Management System).

SAFE – Specialisation Course on the Management of Energy Resources
During the closing event of the 21st edition of the SAFE - Specialisation Course on the Management of Energy Resources, Sogin took part in the Round Table on energy transition and the new circular economy plan held on 3 December 2020. Sogin presented its strategy to apply circular economy on decommissioning and explained the implementation of sustainability principles from an economic, social, and environmental perspective.

Politecnico di Milano
On 21 January, Sogin provided a class on stakeholder management during the Master Strategic and Innovative O&M Management - First level specialising Master course held by Enel and Politecnico di Milano.

Libera Università Maria Santissima Assunta (LUMSA)
Again in 2020, Sogin taught a 4-hour class on Safety Culture as part of the Master Course on HR Management program of LUMSA University of Rome. The Course was mainly addressed to professionals working or willing to work in the HR sector.
The partnership with LUMSA started in 2014. Before 2020, the students and tutors of the Master Course also had the chance to visit the Latina nuclear power plant.

European Week for Waste Reduction (EWWR)
On 25 November, the Sogin Group promoted the webinar "Innovation applied to radioactive waste sustainable management". The Webinar was an opportunity to discuss innovative radioactive waste management techniques and present the actions adopted by Sogin to reduce the waste volume.

Industrial Associations
During 2020, Sogin promoted regular collaboration with national and local industrial associations. The Company is a member of Confindustria Basilicata, Confindustria Piacenza, Confindustria Novara Vercelli Valsesia, Confindustria Caserta and Unindustria Lazio; it also cooperates with other business start-ups and associations from the Regions occupied by its nuclear sites.

19th Week of Business Culture – Confindustria
Again in 2020, Sogin took part to the Week of Business Culture held by Confindustria. The event, focused on business culture topics, reached its 19th edition. During the webinar "Noi siamo oceano, tra scienza e impresa per la rinascita del Paese" (We are ocean, national rebirth between science and business), the Company presented its actions for the achievement of the UN's 2030 Agenda SDGs and several projects related to target Goal 14 "Life below water".

Ecomondo
Sogin Group participated in the 2020 edition of Ecomondo, the reference event for the green economy world organised by the Italian Exhibition Group. Due to the Covid-19 pandemic, the event was held from 3 to 15 November entirely on a dedicated digital platform. On 4 November, the Group was part of the panel "Green deal, circular economy, and sustainability in the remediation and redevelopment of contaminated sites at the time of the pandemic" held on 5 November. In this framework, Nucleco reported on the environmental restoration project of the former Air Force firing range of Punta della Contessa (Brindisi).

National Convention on Radiological Protection (AIRP)
In 2020 Sogin took part in the National Conference of the Italian Association of Radiation Protection (AIRP) that was held from 30 September to 2 October. With two speeches in the session "Radioprotection and Environmental Radioactivity", Sogin talked about the different initiatives through which it shows its constant attention to the territories in which it operates and presented the "National Project for the management of radioactive waste".

RemTech
Sogin Group took part in RemTech Expo, the annual event dedicated to the remediation of contaminated sites, protection, and requalification of the territory. Sogin intervened on 24 September as part of the panel "Remediation in radiation protection: open issues and challenges for the future", presenting the project for the dismantling of "Waste A&B" at the Casaccia site.

Italian Nuclear Association (AIN)
In 2020 Sogin participated in the "Study Day" of the Italian Nuclear Association (AIN), intervening in the webinar dedicated to the closure of the Italian nuclear cycle, which was held on 16 July. The event, entirely digital, was a moment of deepening and comparison on the activities of safety maintenance and dismantling of nuclear plants carried out by Sogin, with a focus on strategies, best practices, and innovation.

INTERNATIONAL NETWORK

INTERNATIONAL BODIES

A centre of Italian expertise in decommissioning and radioactive waste management, Sogin dialogues with world experts in the sector, participating in the most important international forums and in numerous working groups and initiatives within the main international organisations in the sector, such as:

UN International Atomic Energy Agency – IAEA

OECD Nuclear Energy Agency – NEA

DGENER Directorate-General for Energy, Joint Research Centre and EURATOM Supply Agency

Sogin also assists the Italian government, its bodies, and other national institutions active in the nuclear field, providing a specialised technical contribution in international institutional tables. In 2020, due to the pandemic, numerous international events were cancelled or subjected to repeated rescheduling.
Following the award to Sogin of the prestigious recognition of IAEA Collaborating Centre, during 2020 the Company intensified its relations with the Agency with reference to the initiatives developed as part of the sharing of best practices and lessons learned in the field of decommissioning nuclear plants.
For example, as part of Sogin's participation in the Steering Committee of the working group on the "Global status of decommissioning", which has the aim of carrying out an analysis of the current state of decommissioning of nuclear installations worldwide, a 4-day meeting was held in 2020 in virtual mode, during which the working group and representatives of 40 countries took stock of both the strategies and solutions adopted, as well as issues such as market developments, availability of resources, stakeholder involvement, the circular economy and the environment. In addition to the experts, the meeting was also attended by representatives of the Nuclear Energy Agency of the Organisation for Economic Co-operation and Development, the European Commission and the European Bank for Reconstruction and Development.
Sogin participated remotely in several seminars organised by the IAEA and, in September, followed the work of the General Conference and the related side events. During the year, the company also took part in a few technical groups on specific issues regarding decommissioning and radiation protection, such as the GRAPA project (International Project on Irradiated Graphite Processing Approaches), on the management of irradiated graphite, and the MODARIA project (Modelling and Data for Radiological Impact Assessments), on radiation protection.
Within OECD/NEA, Sogin took part, via video conference, in the Steering Committee, the governing body of the Agency, and in the meetings of the committees on issues such as decommissioning and radiation protection and in the Forum on Stakeholder Confidence (FSC), dedicated to the sharing and updating of best practices, among member states, on stakeholder engagement in the field of radioactive waste management.
In 2020, the report "Optimising Management of Low-level Radioactive Materials and Waste from Decommissioning" was published by OECD/NEA, prepared by a special Task Group, established in 2016 within the Working Party on Decommissioning and Dismantling (WPDD) of NEA and composed of 28 experts from 15 countries. Sogin also participated in the work, which took place between 2016 and 2019, and provided its contribution concerning the company's best practices and the principles implemented by the Company in the management of waste and radioactive materials, such as minimising the amount of waste produced and maximising recycling.

FOREIGN OPERATORS

Sogin is establishing and consolidating relations with the most important foreign operators, both public and private, with the aim of sharing know-how and experience and creating mutually beneficial synergies, in view of the growth in the coming years of the world decommissioning market.
Below are Sogin's main collaboration agreements with international bodies and organisations in force in 2020:

- EDF (Electricité De France) aimed at exchanging technical/scientific knowledge on topics of mutual interest in the field of nuclear reactor decommissioning;
- MRI (Mitsubishi Research Institute, Inc.), as a prerequisite for future industrial and nuclear synergies between Italy and Japan;
- Nuclear and Safety Radiation Centre (NSC) aimed at exchanging know-how and developing activities in the field of decommissioning of nuclear plants and management of radioactive waste;
- SURAO, the Czech State company responsible for the national radioactive waste repository in Dukovany, aimed at an exchange of information and know-how in the field of radioactive waste management;
- ENRESA (Empresa Nacional de Residuos Radiactivos SA), the Spanish state company responsible for the waste management and the construction of the repository for low and medium level radioactive waste, aimed at the exchange of information and know-how in the field of radioactive waste management;
- ANDRA (Agence Nationale Pour La Gestion Des Déchets Radioactifs), the French state company responsible for radioactive waste disposal, on radioactive waste management;
- ONDRAF (Organisme National Des Déchets Radioactifs Et Des Matières Fissiles Enrichies), the Belgian state company responsible for waste management and the construction of the Dessel repository, aimed at the exchange of information and know-how in the specific field of radioactive waste management;
- ITER (International Fusion Energy Organisation), the international organisation made up of the European Union, Russia, China, Japan, the United States of America, India and South Korea with the aim of creating an experimental nuclear fusion reactor. The agreement, of a technical-scientific nature, covers topics of mutual interest, such as the management of radioactive waste and nuclear infrastructure and the review of nuclear engineering and nuclear safety projects;
- Nuclear and Radiation Safety Centre (NSC) of the Ministry of Environmental Protection of the People's Republic of China, for the development of initiatives in the field of decommissioning, radioactive waste management and "nuclear safety".

Horizon Europe is the European Union's Framework Programme for funding research and innovation projects until 2027, with a total budget of EUR 95.5 billion.
The objective of this program is to address climate change, contribute to the achievement of the UN Sustainable Development Goals and strengthen the competitiveness and growth of the European Union.
In the framework of the Horizon 2020 program of the European Commission, Sogin, in collaboration with companies and research institutions of other European countries, has joined several projects:

SHARE
The project aims to identify and propose to the European Commission the needs of Research & Innovation on which to orientate the Roadmap of European research in the field of decommissioning of nuclear power plants in the coming years, to improve safety, reduce costs and minimise environmental impact.
In October and December 2020 two workshops were held to present the progress of the project to the international scientific community.
share-h2020.eu

PREDIS - (Pre-disposal Management of Radioactive Waste)
PREDIS - (Pre-disposal Management of Radioactive Waste)
Aims to identify and implement strategies for waste management and innovative technologies in the pre-disposal phase that allow on the one hand the reduction of volumes to be disposed and, on the other, the optimisation of treatment processes.
Sogin Group participates to the Work Packages dedicated to the overall strategy of management and treatment of radioactive waste, to the activities of conditioning of organic liquids and to the monitoring methods of the final products in the storage phase.
https://predis-h2020.eu/

INNO4GRAPH (INNOvative tools FOR dismantling of GRAPHite moderated nuclear reactors)
The objective of this project is to develop and share innovative tools and methodologies for the dismantling of European graphite moderated nuclear reactors.
Sogin contributes with the realisation of a prototype system to evaluate the state of conservation of the graphite blocks in the reactor of the Latina plant.
inno4graph.eu/

MICADO
Micado (Migrant Integration Cockpits and Dashboards) aims to identify solutions for the non-destructive characterisation of radioactive waste, through a process of digitisation.
Sogin contributes with technical support for the definition of system requirements and operational development of technologies.
micadoproject.eu/

HORIZON 2020, THE SHARE PROJECT SURVEY TO TRACE THE ROADMAP OF RESEARCH IS UNDERWAY
Starting from mid-May, about 600 national and international stakeholders, involved in the various phases of decommissioning and waste management, were invited to answer the online questionnaire prepared within the SHARE project, of which Sogin is a partner since 2019. The objective of the survey was to identify the needs in terms of research, development and innovation for the creation of a roadmap for future joint research projects in order to improve safety, reduce costs and minimise environmental impact in the decommissioning of nuclear plants.
The consultation process concluded at the end of June and over 200 respondents, divided between research organisations, WMOs, operators, regulators, industries, etc., provided their views.

RELATIONS WITH SUPPLIERS

Relations with economic operators participating in tender procedures for works, services and supply contracts and in the qualification system, as well as those resulting from the stipulation of the relevant contracts or authorisation to subcontract, are developed in accordance with the provisions contained in the "Code of Public Procurement", as per Legislative Decree no. 50/2016 as amended, with particular reference to the provisions provided for "special sectors", as well as the guidelines of ANAC.
Sogin, in the selection phase of the contractor, to ensure maximum participation of economic operators in the reference market complies with the principles of honesty, good faith, professional fairness, transparency, sustainability, protection/safety of workers, respect for the environment, free competition, equal treatment and non-discrimination in its relations with the same.
Moreover, in order to procure works, services and supplies with high technological content from highly-qualified economic operators, it draws as a priority on the internal qualification system.

TRANSPARENCY AND INVOLVEMENT

In carrying out its activities, Sogin constantly exchanges views with economic operators who, in terms of technological characteristics, know-how and specialisation, represent the excellence of the national and international industrial fabric, with the aim of creating a decommissioning supply chain that is able to seize the opportunities arising from nuclear cycle closure activities.

GREEN PURCHASING

Sogin, based on the provisions of the National Plan for Green Public Procurement, identifies in the tender specifications the minimum requirements to encourage the use of technologies with reduced environmental impact, as well as adhere to more sustainable production and consumption models. Starting in 2017, the Company has, in fact, adopted a specific guideline for the inclusion of Minimum Environmental Criteria (CAM) in procurement documents, which is constantly implemented and updated in accordance with the reference legislation.

In 2020 Sogin took part in the survey carried out by the Ecosistemi Foundation on the sustainability of procurement processes: an initiative carried out as part of the "Buygreen Community" project, which aims to promote the improvement of the environmental and social performance of purchases in companies and was included in the Sustainability Monitor Report 2020, the first report on the sustainability of the supply chains of large Italian companies.

E-PROCUREMENT AND PROCESS IMPROVEMENT

For years Sogin has had an E-procurement System that enables it to manage tender procedures in a computerised way, including the contractor selection phase.
Economic operators, after registering, can access both the portal dedicated to the qualification system and the portal for online tenders. This system verifies the documentation accompanying the declarations regarding possession of the participation requirements and the absence of causes for exclusion, opens the tender, evaluates the bids, displays the ranking list, and awards the tender.
In the "Suppliers" section of the corporate website sogin.it the forms and all the necessary information are made available to economic operators.
In 2020 procurement activities continued regularly despite the 3-month suspension of tender procedures ordered, due to the health emergency from Covid-19, for the period from 23 February 2020, to 15 May 2020, first with Legislative Decree no. 18/2020, converted with amendments, with Law no. 27/2020 and then with Legislative Decree no. 23/2020, converted with amendments, with Law no. 40/2020.
In 2020, 678 contracts were issued for a total amount of EUR 264.1 million (in 2019, for an amount of EUR 111.5 million), of which EUR 217.0 million related to the commensurate (in 2019, for an amount of EUR 49.3 million).
In 2020, in order to cope with the various regulatory updates that took place during the year, Sogin adjusted the general conditions of contracts for works, services and supplies, the standard contract outlines, the regulation for the qualification of economic operators and the adhesion schemes, the forms of the declarations in lieu of certification and notarisation.

VERIFICATION OF THE REQUIREMENTS OF ECONOMIC OPERATORS

In accordance with the provisions of current legislation, Sogin verifies the possession of the necessary requisites of the economic operators and the absence of causes of exclusion, during the qualification phase, participation in the tender procedures and, regarding contractors and any subcontractors, until the full execution of the contract.
In application of the Legality Protocol, signed in 2011 and renewed in 2016, with the Prefectures of the seven Provinces involved in the decommissioning works (Alessandria, Caserta, Latina, Matera, Piacenza, Rome, Vercelli), Sogin carries out anti-mafia checks, also for contracts excluded by the above-mentioned regulations, on the economic operators who, for any reason and regardless of the amount of the contract, participate in the execution of works, services, rentals and transport, or in the supply of materials. During the awarding phase, Sogin will assess the fairness of the offer and, if there are any, will exclude any anomalous discounts that may affect the costs of labour, quality and safety of the work.
The economic operators must declare that they are aware of and accept the provisions contained in the Model of Organisation, Management and Control, under Legislative Decree no. 231/2001 of SOGIN, including the Code of Ethics and the Three-year Plan for the Prevention of Corruption, containing the measures to prevent and combat the crimes of administrative responsibility, fraud, corruption, and mismanagement ex law no. 190/2012. Nucleco also requires its economic operators to make a similar declaration.

Finally, special clauses are included in the contracts, which provide for:

- a self-certification by the economic operator of adherence to specific social obligations (e.g., measures to guarantee workers for the respect of fundamental rights, the principle of equal treatment and non-discrimination, the protection of child labour, etc.);
- the possibility for Sogin to carry out actions to verify the declared requirements at the production units or operating sites of the economic operator.

In May 2020 Sogin signed a Memorandum of Understanding with the three confederal trade unions based on which contractors are obliged to apply all the provisions regarding wage, health and safety protection contained in the National Collective Labour Agreements signed.

SHARED RESPONSIBILITY

In line with the best practices of the main Italian contracting authorities and in compliance with the existing regulatory framework, Sogin regularly monitors its contractors and sub-contractors to verify their respect of workers' rights and the principles of social ethics and transparency, thus, limiting "shared responsibility of the contracting party" risk.
Sogin implemented a shared IT system which daily detects and monitors the presence of external workers under a procurement contract. Moreover, the Company runs massive checks on documents, aimed at assessing the correct fulfilment of payment, social security, and insurance obligations on behalf of the companies working with Sogin.
This activity also includes sample checks performed on working sites. In the event of non-compliance on behalf of the contractor and/or the sub-contractor, the contracting authority, Sogin, launches substitution procedures, upon official request of the concerned parties, and directly provides the employee with the payment of the accrued amounts not paid by the contractor or sub-contractor.
At the end of 2019, Article 4 of the enforced Legislative Decree no. 124/2019 as converted into Law 157/2019, introduced Fiscal Responsibility of contracting authorities. Therefore, Sogin verifies the fiscal compliance of contractors, sub-contractors, and other partners, which shall comply with all of the following requirements:

- Businesses with contracts exceeding EUR 200,000 per year;
- Businesses mainly using the workforce operating in the Client's offices and premises;
- Businesses using instruments belonging to Client or, anyway, ascribable to the Client.

VENDOR RATING

The vendor rating process aims at analysing and improving the suppliers' performance, by allowing greater transparency between the contracting authority and the contractor. This process provides for the performance of checks on all ratified contracts by Sogin, excluding those whose amounts are less than EUR 10,000, professional assignments of trustee nature to self-employed professionals, subscriptions, rents, utilities, sponsors and collaborations with bodies and institutions. The evaluation is based on the following parameters: compliance with specific technique, flexibility and promptness, staff expertise, adequacy of means and equipment, compliance with implementation time and general performance evaluation. As for the works, an evaluation on work safety and environmental management was also included in the process. If the supplier's performance is not satisfactory, there may be consequences in terms of qualifications or the ratification of future contracts with Sogin. Negative assessments may result in the exclusion of a – qualified or non-qualified - supplier from future invitations to tenders and the rejection of possible qualification requests.

QUALIFICATION SYSTEM

Since 2010, Sogin has resorted to a qualification system to identify economic stakeholders to invite in tenders. Sogin qualification requirements reflect the guidelines set out by the National Anti-corruption Authority (ANAC). Subscription has an unlimited duration.
The current "Regulation for the operation and management of the Procurement Qualification Process for services and supplies of Sogin S.p.A.", drafted under art. 36 and art. 134 of Legislative Decree no. 50/2016, provides for the possibility to use tendering procedures addressed to official Registers for:

- works up to class 8 conventionally established in EUR 20,658,000.
- engineering services up to EUR 3 million.
- supply and services up to EUR 10 million.

The Qualification System is managed through an integrated IT platform, the Sogin Purchase portal available on the corporate website.
The economic operators can access the portal at any time, previous subscription, and authorisation, and apply to be qualified for each procurement category. The application of the economic operator is evaluated by the competent office and undergoes the process of qualification of the Qualification Committee, which approves or refuses the application according to the requirements defined under the qualification regulations and specifications. There are about 180 categories, structured according to the activities defined in the procurement plan. The system is subject to regular verifications of the qualification access criteria to keep them aligned with corporate needs and the current market standards. As of 31/12/2020, the total number of qualified economic operators included in the system amounts to 754 (covering 1508 categories). During 2020, Sogin opened 176 calls for tenders on the Official Notice Boards, for a total amount of about EUR 93.3 million (compared to EUR 32 million in 2019).

ISSUED ORDERS AND GEOGRAPHICAL DISTRIBUTION OF SUPPLIERS

Decommissioning and waste management activities generate value for the territory, by contributing to the development of the local business fabric. The tables below report the absolute and percentage value of the orders issued by Sogin, divided by type of contract and geographical area.

VALUE OF THE ORDERS ISSUED BY SOGIN DIVIDED BY TYPE

	2020	2019	2018	2020	2019	2018	2020	2019	2018
Type	**Amounts (in EUR/M)**			**Amounts (%)**			**No. of orders**		
Supplies	19,1	17,6	19,3	7,2	15,8	14,6	160	181	180
Works	130,3	29,8	15,3	49,3	26,8	11,6	75	61	47
Services	114,7*	64**	97,3***	43,5	57,4	73,8	443	419	500
Total	**264,1**	**111,4**	**131,9**	**100**	**100**	**100**	**678**	**661**	**727**

*Of which EUR 4 million related to nuclear fuel (2 contracts).

**of which EUR 9.3 million related to nuclear fuel (6 contracts).

***of which EUR 17.3 million related to nuclear fuel (5 contracts).

VALUE OF THE ORDERS ISSUED BY SOGIN DIVIDED BY SITE

Site	2020		2019		2018	
	EUR/M	**(%)**	**EUR/M**	**(%)**	**EUR/M**	**(%)**
Bosco Marengo	14,2	5,4	3,4	3,1	4,1	3,1
Caorso	13,4	5,1	9	8,1	7,6	5,8
Casaccia	8,5	3,2	6,2	5,6	9,1	6,9
Garigliano	25,5	9,7	8,9	8	16,3	12,3
Latina	32,2	12,2	8,7	7,8	7,6	5,8
Saluggia	119,5	45,2	11,1	10	13,7	10,4
Rome Headquarters	23,4	8,9	38,6	34,6	56,2	42,6
Trino	17,2	6,5	7,6	6,8	9,0	6,8
Rotondella	9,4	3,6	17,6	15,8	8,3	6,3
ISPRA-1	0,9	0,3	0,3	0,3	0	0
Total	**264,1**	**100%**	**111,4**	**100%**	**131,9**	**100%**

*Please note that round figures were used to express the amounts and totals of each site in EUR million.

As for Nucleco, the table shows the territorial distribution of suppliers and the relevant expenditure as a percentage of the total purchases of 2020.

GEOGRAPHICAL DISTRIBUTION OF SUPPLIERS – NUCLECO 2020			
Reference geographical areas	**Number of contracts**	**Amounts (EUR)**	**Amounts %**
Lazio	37	2.730.853,52	15,93%
Abruzzo	2	42.800,00	0,25%
Campania	2	205.812,77	1,20%
Piemonte	6	180.400,00	1,05%
Emilia-Romagna	8	624.216,39	3,64%
Basilicata	2	139.000,00	0,81%
Lombardia	26	12.327.771,05	71,91%
Toscana	1	398.174,64	2,32%
Liguria	1	76.720,00	0,45%
Sicilia	0	0,00	0,00%
Puglia	5	122.664,00	0,72%
Umbria	4	160.750,00	0,94%
Veneto	1	73.839,47	0,43%
Friuli Venezia Giulia	1	59.400,00	0,35%
Trentino-Alto Adige	0	0,00	0,00%
Marche	0	0,00	0,00%
Foreign countries	0	0,00	0,00%
Total	**96**	**17.142.401,84**	**100,00%**
The calculation does not include intracompany contracts to Sogin and ENEA			

The high absolute and percentage amount expressed for Lombardia – which negatively affects the % distribution for all other amounts – results from a contract ratified with AMBIENTHESIS S.p.A. in September 2020 for the "Service of transport and landfill disposal of hazardous waste (EWC code 170503*) resulting from the removal of man-made materials from the Sogin nuclear power plant of Latina". The contract has a total value of EUR 10,425,000.00.

GLOSSARY

BROWNFIELD
The intermediate stage of decommissioning envisaging the demolition of all the plant's structures and the conditioning and storage of all radioactive waste in temporary storage facilities, pending their transfer to the National Repository.

WASTE CHARACTERISATION
Set of activities to define the nature of commodities and the chemical, physical and radiological features of radioactive waste. It can be divided into different stages that define the radiological waste class and identify the best treatment to prepare the waste for final storage.

CASK
Screening high-resistance metallic container used to ship and/or store irradiated fuel elements or scraps resulting from the fuel processing.

HOT CELLS
It is a closed, isolated premises equipped with screens used to carry out operations on nuclear materials through remote controllers.

CEMENTATION
The process to enclose the radioactive waste into a concrete matrix. It is used to immobilise and condition very low and low-level radioactive waste. As for the conditioning procedure, the concrete mortar needs to be qualified with laboratory tests to verify it has the required technical features to stabilise the chemical and physical aspects of the final artifact. It can also be used to condition high-level radioactive waste as an alternative to vitrification.

FUEL CYCLE
All the operations carried out on the nuclear fuel used to generate nuclear energy. It includes all the industrial processes connected with fuel management: mining, material refining, enrichment, fabrication of fuel elements, employment of fuel elements in research centres and plants, storage of used fuel elements, processing and final collection of radioactive waste resulted from processing or spent fuel elements.

NUCLEAR FUEL
It is the substance used to create fuel elements. It usually consists of compounds with high levels of fissile isotopes like Uranium 235 or Plutonium isotopes. After its use in a nuclear reactor, the fuel is defined "irradiated".

CONDITIONING
Set operations that allow radioactive waste to be transformed into a solid block (for example, through cementation or vitrification), and store it in special containers. The artifacts resulted from this process have chemical and physical features that allow handling, transportation, and final storage.

PACKAGING
It entails assembling components required to enclose radioactive waste for handling, transportation, storage, and final disposal purposes. It can be implemented by using one or more containers and screens to protect from radiations, avoiding damaging the container for accidental bumps, and being protected from the heat produced by the waste.

RADIOACTIVE DECAY
It is the transformation of a radioactive nuclide into another nuclide through the spontaneous emission of alpha, beta, or gamma particles. The final product of this process is a more stable nucleus. Each decay process has a specific half-life, according to each radioactive nuclide.

DECONTAMINATION
It is the partial or total removal of radioactivity on the surface of an object. It requires chemical, electrical, thermal, or mechanical processes.

DECOMMISSIONING
English term to define all decontamination, dismantling, and radioactive waste management operations carried out to free nuclear facilities from radiological restrictions. After the performance of these operations, the site can be returned to the community and reused. In Italian, it can be translated with the word "disattivazione".

INTERIM STORAGE FACILITY/TEMPORARY REPOSITORY
It defines the building designed for the temporary storage of radioactive waste.

OFF GAS BUILDING
Structure located in Boiling Water Reactor power plants (like Caorso BWR power plant). It allows conducting analyses and carrying out the treatment of the gas effluents from the turbine and condenser before their release to the environment.

REACTOR BUILDING
Also called a "nuclear island," it is the main building of a nuclear power plant used to produce heat through nuclear fission.

TURBINE BUILDING
The turbine building is designed to contain the turbogenerator and all the thermal cycle components (condenser, preheater, etc.).

LIQUID EFFLUENTS
The definition stands for very low-level liquid effluents, mainly containing water, released to the environment after check and treatment to comply with the limitations set out by law.

RADIOACTIVE WASTE MANAGEMENT
Set of operations intended for the safe storage of radioactive waste.

GRAPHITE
Graphite is an allotrope of Carbon (polymorphic shape) used as a moderator to control the chain reaction progress of certain kinds of reactors.

GREEN FIELD
It is the state of a nuclear power plant after decommissioning and dismantling all plants, buildings, and radioactive waste interim storage facilities. After shipping all radioactive waste to a centralised Repository, the site is cleared from radiological restrictions and returned to the community for reuse.

NUCLEAR ISLAND
Section of a nuclear power plant hosting the power generating system – composed of reactor and heat exchanger.

RELEASE THRESHOLD
It is the maximum threshold of radioactivity that can be released to the environment (Discharge Formula) and discharge modality.

CONDITIONED ARTIFACT
Radioactive residual – usually cemented or vitrified – resulted from conditioning. The artifact consists of treated waste and a suitable container. The features of the artifact allow its shipment to the National Repository for final storage and disposal.

NUCLEAR SECURITY
Series of activities – including the use of PPE - designed to detect, prevent, and avoid malicious acts, like theft, unauthorised removal, sabotage, unauthorised access, illegal transfer, or other detrimental actions, which involve nuclear materials, radioactive substances, and auxiliary structures, including those related to transportation.

NUCLEAR SAFETY
It consists of activities based on international, community, and national regulations, designed to protect the population, workers, and environment from the adverse effects of ionising radiation. It also includes measures to avoid dangerous accidents (i.e., the leakage of radioactive material from a nuclear power plant).

FINAL PRODUCT
The final product of the reprocessing of irradiated fuel, generally consisting of purified Uranium and Plutonium nitrate solutions ready, after solidification, for the remanufacturing of nuclear fuel. The term is used specifically for the Uranium and Thorium nitrate solution of the ITREC plant resulting from the reprocessing of the Elk River fuel.

FUEL REPROCESSING
Reprocessing of irradiated fuel that is carried out through chemical processes to recover fissile or fertile material (Plutonium and Uranium 235), separating it from all fission products present in the irradiated fuel.

INTERMEDIATE AND HIGH-LEVEL WASTE
Waste that loses its radioactivity over thousands or hundreds of thousands of years. It requires the provision of a geological repository to be permanently settled.
These wastes will be temporarily stored in the National Repository, pending the availability of a geological repository.

VERY LOW AND LOW-LEVEL WASTE
Waste that reaches a level of radioactivity that does not generate impacts on health and the environment over a period of 300 years. This type of waste will be permanently disposed of in the National Repository.

VERY-SHORT LIVED WASTE
Waste that will not be stored in the National Repository. It is stored for a limited time (months or a few years) in the facilities where it is produced and then disposed of as conventional waste (not as radioactive waste) since it is no longer harmful to people and the environment.

PACKAGED WASTE
Waste in suitable containers to be handled, shipped, stored or settled, after eventual conditioning and use of absorption and coating materials.

CONVENTIONAL WASTE
In liquid, solid, or gaseous form, wastes can be conferred for disposal in authorised landfills, as they do not have any health and environmental

protection characteristics. As far as radioactivity is concerned, in Italy, the legal thresholds for considering waste as non-radioactive, defined by Legislative Decree no. 230/1995, are 1 Bq/g and 75 days of average life.

RADIOACTIVE WASTE
The radioactive waste consists of materials containing radionuclides in concentrations above the release levels for conventional waste. For these materials, no reuse is foreseen.

GLOVE BOXES
A term used to indicate a work surface isolated from the outside where, through slots to which insulating gloves are applied, fuel handling and/or production operations are carried out under safe conditions for the operators.

SOLIDIFICATION
It is the immobilisation of radioactive fluids by conversion into a solid form. The intent is to reduce the risk of fluid dispersion by producing a physically stable material that is easier to handle. The most used solidification methods are cementation and vitrification. The difference between conditioning and solidification is that the former process is implemented with a qualified matrix.

TREATMENT
A set of operations designed to change the physical form and chemical composition of radioactive waste through physical and/or chemical processes. Their primary objective is to achieve volume reduction, reduce the radiological load, and prepare the waste for the next conditioning step.

TRENCHES
Areas of the Garigliano plant used to bury low-level radioactive waste, as permitted by reference international standards and regulations.

CLASSIFIED AREA
Work environment subject to regulations to ensure protection against ionising radiation. Classified areas may be supervised areas or controlled areas. The supervised area is any work area where, based on the assessments and evaluations made by the qualified expert, workers can receive a dose higher than 1 mSv, but which should not be classified as a controlled area.

CONTROLLED AREA
Marked and delimited area, access to which is regulated. Based on assessments made by the qualified expert, there is a risk to workers working within it of absorbing an annual dose of more than 6 mSv.

GRI INDICATORS

HUMAN RESOURCES

GRI 102:8 - INFORMATION ON EMPLOYEES AND OTHER WORKERS AS OF 31 DECEMBER DIVIDED BY GENDER, EMPLOYEE CATEGORY, CONTRACT TYPE AND PLACE OF WORK												
		Workforce by gender										
		Sogin 2020			Nucleco 2020			Group 2020			Group 2019	Group 2018
		T.I.	T.D.	Total	T.I.	T.D.	Total	T.I.	T.D.	Total	Total	Total
Women	n.	257	0	**257**	34	3	37	291	3	**294**	296	286
Men	n.	652	0	**652**	180	20	200	832	20	**852**	850	831
Total	**n.**	**909**	**0**	**909**	**214**	**23**	**237**	**1.123**	**23**	**1.146**	**1.146**	**1.117**
di cui:												
Full Time	n.	893	0	**893**	214	23	237	1 107	23	**1.130**	1.125	1.097
Part Time	n.	16	0	**16**	0	0	0	16	0	**16**	21	20
		Workforce by place of work										
		Sogin 2020			Nucleco 2020			Group 2020			Group 2019	Group 2018
Caorso	n.	101	0	101	6	3	9	107	3	110	110	113
Garigliano	n.	62	0	62	22	0	22	84	0	84	86	82
Latina	n.	90	0	90	10	0	10	100	0	100	98	94
Trino	n.	70	0	70	7	5	12	77	5	82	79	78
Bosco Marengo	n.	35	0	35	4	4	8	39	4	43	40	41
Casaccia	n.	58	0	58	2	0	2	60	0	60	62	63
Saluggia	n.	49	0	49	4	3	7	53	3	56	56	60
Trisaia	n.	60	0	60	17	0	17	77	0	77	79	79
ISPRA-1	n.	3	0	3	8	4	12	11	4	15	11	8
Rome's Head-quarters	n.	377	0	377	132	4	136	509	4	513	518	491
Fhoursign offices	n.	4	0	4	2	0	2	6	0	6	7	8
Total	**n.**	**909**	**0**	**909**	**214**	**23**	**237**	**1.123**	**23**	**1.146**	**1.146**	**1.117**

SELF-EMPLOYED WORKERS, OR NON-EMPLOYED BY THE ORGANISATION, WORKING UNDER THE GROUP SUPERVI-SION.						
		Sogin 2020	Nucleco 2020	Group 2020	Group 2019	Group 2018
Trainees	n.	0	7	7	7	56
Workforce by gender						
		Sogin 2020	Nucleco 2020	Group 2020	Group 2019	Group 2018
Men	%	71.73%	84.39%	74.35%	74.17%	74.40%
Women	%	28.27%	15.61%	25.65%	25.83%	25.60%
GRI 401-1: New employee hires and employee turnover divided by age, gender and geographical area.						
It should be noted that the difference between the number of employees (including those hired and terminated) at 31.12.19 and the number of employees at 31.12.2020 derives from the settlement reintegration of an employee which took place during 2020.						
Hires						
Employee Hired by Gender						
		Sogin 2020	Nucleco 2020	Group 2020	Group 2019	Group 2018
Men	n.	6	25	31	38	5
Women	n.	4	4	8	15	2
Total	**n.**	**10**	**29**	**39**	**53**	**7**
Employee Hires by Age						
		Sogin 2020	Nucleco 2020	Group 2020	Group 2019	Group 2018
Under 30	n.	2	11	13	7	0
30-40	n.	4	10	14	26	5
41-50	n.	3	4	7	16	1
Over 50	n.	1	4	5	4	1
Total	**n.**	**10**	**29**	**39**	**53**	**7**
Employee Hires by place of work						
		Sogin 2020	**Nucleco 2020**	**Group 2020**	**Group 2019**	**Group 2018**
Caorso	n.	1	5	6	5	0
Garigliano	n.	0	0	0	5	0
Latina	n.	2	0	2	5	2
Trino	n.	0	6	6	2	0
Bosco Marengo	n.	0	5	5	0	0
Casaccia	n.	0	0	0	1	0
Saluggia	n.	0	3	3	0	0
ISPRA-1	n.	0	4	4	1	0
Trisaia	n.	0	0	0	0	0
Rome Headquarters	n.	7	6	13	34	5
Fhoursign Offices	n.	0	0	0	0	0
Total	**n.**	**10**	**29**	**39**	**53**	**7**
Rate of new employee hires by gender						
		Sogin 2020	**Nucleco 2020**	**Group 2020**	**Group 2019**	**Group 2018**
Men	%	0.66%	10.55%	2.71%	3.32%	0.45%
Women	%	0.44%	1.69%	0.70%	1.31%	0.18%
Total	**%**	**1.10%**	**12.24%**	**3.40%**	**4.62%**	**0.63%**
Rate of new employee hires by age						
		Sogin 2020	Nucleco 2020	Group 2020	Group 2019	Group 2018
Under 30	%	0.22%	4.64%	0	0.60%	0.00%
30-40	%	0.44%	4.22%	1.22%	2.27%	0.45%
41-50	%	0.33%	1.69%	0.61%	1.40%	0.09%
Over 50	%	0.11%	1.69%	0.44%	0.35%	0.09%
Total	**%**	**1.10%**	**12.24%**	**3.40%**	**4.62%**	**0.63%**
Rate of new employee hires by place of work						
		Sogin 2020	Nucleco 2020	Group 2020	Group 2019	Group 2018
Caorso	%	0.11%	2.11%	0.52%	0.44%	0.00%

Garigliano	%	0.00%	0.00%	0.00%	0.44%	0.00%
Latina	%	0.22%	0.00%	0.17%	0.44%	0.18%
Trino	%	0.00%	2.53%	0.52%	0.17%	0.00%
Bosco Marengo	%	0.00%	2.11%	0.44%	0.00%	0.00%
Casaccia	%	0.00%	0.00%	0.00%	0.08%	0.00%
Saluggia	%	0.00%	1.27%	0.26%	0.00%	0.00%
ISPRA-1	%	0.00%	1.69%	0.35%	0.08%	0.00%
Trisaia	%	0.00%	0.00%	0.00%	0.00%	0.00%
Rome Headquarters	%	0.77%	2.53%	1.13%	2.97%	0.45%
Fhoursign Offices	%	0.00%	0.00%	0.00%	0.00%	0.00%
Total	**%**	**1.10%**	**12.24%**	**3.40%**	**4.62%**	**0.63%**

Turnover						
Rate of employee turnover by gender						
		Sogin 2020	**Nucleco 2020**	**Group 2020**	**Group 2019**	**Group 2018**
Men	n.	21	9	30	19	14
Women	n.	7	3	10	5	5
Total	**n.**	**28**	**12**	**40**	**24**	**19**
Rate of employee turnover by age						
		Sogin 2020	**Nucleco 2020**	**Group 2020**	**Group 2019**	**Group 2018**
Under 30	n.	0	4	4	2	1
30-40	n.	6	2	8	7	3
41-50	n.	2	2	4	4	4
Over 50	n.	20	4	24	11	11
Total	**n.**	**28**	**12**	**40**	**24**	**19**
Rate of employee turnover by place of work						
		Sogin 2020	**Nucleco 2020**	**Group 2020**	**Group 2019**	**Group 2018**
Caorso	n.	5	2	7	9	1
Garigliano	n.	2	0	2	1	1
Latina	n.	1	0	1	0	1
Trino	n.	1	0	1	1	1
Bosco Marengo	n.	3	1	4	1	0
Casaccia	n.	0	0	0	2	0
Saluggia	n.	1	0	1	1	0
ISPRA-1	n.	0	0	0	0	1
Trisaia	n.	0	1	1	0	0
Rome Headquarters	n.	15	8	23	8	14
Fhoursign Offices	n.	0	0	0	1	0
Total	**n.**	**28**	**12**	**40**	**24**	**19**
Rate of employee turnover by gender						
		Sogin 2020	**Nucleco 2020**	**Group 2020**	**Group 2019**	**Group 2018**
Men	%	2.31%	3.80%	2.62%	1.66%	1.25%
Women	%	0.77%	1.27%	0.87%	0.43%	0.45%
Total	**%**	**3.08%**	**5.06%**	**3.49%**	**2.09%**	**1.70%**
Rate of employee turnover by age						
		Sogin 2020	**Nucleco 2020**	**Group 2020**	**Group 2019**	**Group 2018**
Under 30	%	0.00%	1.69%	0.35%	0.17%	0.09%
30-40	%	0.66%	0.84%	0.70%	0.61%	0.27%
41-50	%	0.22%	0.84%	0.35%	0.35%	0.36%
Over 50	%	2.20%	1.69%	2.09%	0.96%	0.98%
Total	**%**	**3.08%**	**5.06%**	**3.49%**	**2.09%**	**1.70%**

Rate of employee turnover by place of work						
		Sogin 2020	**Nucleco 2020**	**Group 2020**	**Group 2019**	**Group 2018**
Caorso	%	0.55%	0.84%	0.61%	0.78%	0.09%
Garigliano	%	0.22%	0.00%	0.17%	0.09%	0.09%
Latina	%	0.11%	0.00%	0.09%	0.00%	0.09%
Trino	%	0.11%	0.00%	0.09%	0.09%	0.09%
Bosco Marengo	%	0.33%	0.42%	0.35%	0.09%	0.00%
Casaccia	%	0.00%	0.00%	0.00%	0.17%	0.00%
Saluggia	%	0.11%	0.00%	0.09%	0.09%	0.00%
ISPRA-1	%	0.00%	0.00%	0.00%	0.00%	0.09%
Trisaia	%	0.00%	0.42%	0.09%	0.00%	0.00%
Rome Headquarters	%	1.65%	3.38%	2.01%	0.69%	1.25%
Fhoursign Offices	%	0.00%	0.00%	0.00%	0.09%	0.00%
Total	**%**	**3.08%**	**5.06%**	**3.49%**	**2.09%**	**1.70%**

GRI 401-3: EMPLOYEES WHO HAVE TAKEN PARENTAL LEAVE

Number of employees who took parental leave, by gender						
		Sogin 2020	**Nucleco 2020**	**Group 2020**	**Group 2019**	**Group 2018**
Men	n.	24	6	30	35	24
Women	n.	54	5	59	56	36
Total	**n.**	**78**	**11**	**89**	**91**	**60**
Total number of employees that returned to work after parental leave ended, by gender						
		Sogin 2020	**Nucleco 2020**	**Group 2020**	**Group 2019**	**Group 2018**
Men	n.	24	6	30	34	24
Women	n.	51	4	55	51	35
Total	**n.**	**75**	**10**	**85**	**85**	**59**

GRI 404-1: AVERAGE HOURS OF TRAINING THAT THE ORGANIZATION'S EMPLOYEES HAVE UNDERTAKEN

Total training hours				
		Group 2020	**Group 2019**	**Group 2018**
Corporate Employees	**hours**	**45.893**	**32.757**	**28.708**
Sogin	hours	33.494	27.751	24.880
Nucleco	hours	12.399	5.006	3.828
Other Staff	**hours**	**1.014**	**1.624**	**2.136**
Trainees	*hours*	*584*	*462*	*1.793*
External Collaborators	*hours*	*0*	*16*	*0*
Total	**hours**	**46.907**	**34.381**	**30.843**
Total annual training hours by type				
		Group 2020	**Group 2019**	**Group 2018**
Upon entrance	hours	1.067	0	208
Managers	hours	394	1.187	1.180
Technical Specialists	hours	3.823	7.191	9.079
Nuclear and conventional safety	hours	41.590	25.323	20.136
Training on the job	hours	33	680	240
Total	**hours**	**46.907**	**34.381**	**30.843**
Average annual training hours by gender (pro capite)				
		Group 2020	**Group 2019**	**Group 2018**
Men	hours	42	28	25

Women	hours	38	31	28
Total	**hours**	**40**	**29**	**26**
Average annual training hours by employee category (pro capite)				
		Group 2020	**Group 2019**	**Group 2018**
Managers	hours	11	14	14
Executives	hours	26	27	24
Office Worker	hours	43	31	28
Worker	hours	52	26	22
Total	**hours**	**33**	**29**	**26**

GRI 405-1: STAFF DIVIDED BY PROFESSIONAL CATEGORY, GENDER AND AGE RANGES AS OF DECEMBER 31

		Total workforce by employee category										
		Sogin 2020			**Nucleco 2020**			**Group 2020**			**Group 2019**	**Group 2018**
		Women	**Men**	**Total**	**Women**	**Men**	**Total**	**Women**	**Men**	**Total**	**Total**	**Total**
Managers	n.	0	27	27	0	0	0	0	27	27	27	28
Executives	n.	61	150	211	5	14	19	66	164	230	237	240
Office Worker	n.	189	340	529	29	91	120	218	431	649	636	616
Worker	n.	7	135	142	3	95	98	10	230	240	246	233
Total	n.	257	652	909	37	200	237	294	852	1.146	1.146	1.117
Managers	%	0.00%	2.97%	2.97%	0.00%	0.00%	0.00%	0.00%	2.36%	2.36%	2.36%	2.51%
Executives	%	6.71%	16.50%	23.21%	2.11%	5.91%	8.02%	5.76%	14.31%	20.07%	20.68%	21.49%
Office Worker	%	20.79%	37.40%	58.20%	12.24%	38.40%	50.63%	19.02%	37.61%	56.63%	55.50%	55.15%
Worker	%	0.77%	14.85%	15.62%	1.27%	40.08%	41.35%	0.87%	20.07%	20.94%	21.47%	20.86%
Totale	**%**	**28%**	**72%**	**100%**	**16%**	**84%**	**100%**	**26%**	**74%**	**100%**	**100%**	**100%**

GRI 405-1: STAFF DIVIDED BY PROFESSIONAL CATEGORY, GENDER AND AGE RANGES AS OF DECEMBER 31

		Total workforce by age																						
		Sogin 2020					**Nucleco 2020**					**Group 2020**					**Group 2019**					**Group 2018**				
		Under 30	30-40	41-50	Over 50	Total	Under 30	30-40	41-50	Over 50	Total	Under 30	30-40	41-50	Over 50	Total	Under 30	30-40	41-50	Over 50	Total	Under 30	30-40	41-50	Over 50	Total
Managers	n.	0	-	4	23	27	0	0	-	-	0	0	0	4	23	27	0	0	3	24	27	0	0	4	24	28
Executives	n.	0	4	69	138	211	0	3	9	7	19	0	7	78	145	230	0	12	79	146	237	0	15	89	136	240
Office Worker	n.	10	233	149	137	529	11	72	12	25	120	21	305	161	162	649	15	318	144	159	636	23	312	138	143	616
Worker	n.	15	68	40	19	142	12	43	21	22	98	27	111	61	41	240	35	111	62	38	246	46	104	49	34	233
Total	**n.**	**25**	**305**	**262**	**317**	**909**	**23**	**118**	**42**	**54**	**237**	**48**	**423**	**304**	**371**	**1.146**	**50**	**441**	**288**	**367**	**1.146**	**69**	**431**	**280**	**337**	**1.117**
Managers	%	0.00%	-	0.44%	2.53%	2.97%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.35%	2.01%	2.36%	0.00%	0.00%	0.26%	2.09%	2.36%	0	0	0.36%	2.15%	2.51%
Executives	%	0.00%	0.44%	7.59%	15.18%	23.21%	0.00%	1.27%	3.80%	2.95%	8.02%	0.00%	0.61%	6.81%	12.65%	20.07%	0.00%	1.05%	6.89%	12.74%	20.68%	0	1.34%	7.97%	12.18%	21.49%
Office Worker	%	1.10%	25.63%	16.39%	15.07%	58.20%	4.64%	30.38%	5.06%	10.55%	50.63%	1.83%	26.61%	14.05%	14.14%	56.63%	1.31%	27.75%	12.57%	13.87%	55.50%	2.06%	27.93%	12.35%	12.80%	55.15%
Worker	%	1.65%	7.48%	4.40%	2.09%	15.62%	5.06%	18.14%	8.86%	9.28%	41.35%	2.36%	9.69%	5.32%	3.58%	20.94%	3.05%	9.69%	5.41%	3.32%	21.47%	4.12%	9.31%	4.39%	3.04%	20.86%
Total	**%**	**3%**	**34%**	**29%**	**35%**	**100%**	**10%**	**50%**	**18%**	**23%**	**100%**	**4%**	**37%**	**27%**	**32%**	**100%**	**4%**	**38%**	**25%**	**32%**	**100%**	**6%**	**39%**	**25%**	**30%**	**100%**

GRI 405-1: BOARD OF DIRECTORS MEMBERS BY GENDER AND AGE GROUP

Sogin BoD divided by gender				
		2020	**2019**	**2018**
Men	n.	3	3	3
Women	n.	2	2	2
Total	**n.**	**5**	**5**	**5**
Sogin BoD divided by age				
		2020	**2019**	**2018**
Under 30	n.	0	0	0
30-40	n.	0	0	1
41-50	n.	3	3	1
Over 50	n.	2	2	3
Total	**n.**	**5**	**5**	**5**

GRI 405-2: RATIO OF BASIC SALARY AND REMUNERATION OF WOMEN TO MEN

Ratio of basic salary and remuneration of women to men by employee category						
		Sogin 2020	**Nucleco 2020**	**Group 2020**	**Group 2019**	**Group 2018**
Managers	%	71.60%	0.00%	71.60%	71.32	69.78
Executives	%	93.89%	108.71%	100.43%	94.76	94.80
Office Worker	%	93.60%	103.23%	99.59%	98.21	98.00
Worker	%	101.19%	100.16%	100.74%	101.06	102.16

ENVIRONMENT

PERFORMANCE INDICATORS	UdM	Sogin 2020	Nucleco 2020	Group 2020	Group 2019	Group 2018
GRI 301-1: MATERIALS USED BY WEIGHT OR VOLUME						
Renewable materials used						
Paper	ton	11,45	1,98	13,43	20,81	27,58
Other renewable materials	ton	0	0	0	0	0
Non-renewable materials used						
Metals	ton	505	153	659	300	261
	N. casks	5.754	6.841	12.595	2.982	3.395
Machine Lubricants	l	17.268	0	17.268	8.838	1.943
Industrial Gases	m3	120.325	530	120.855	76.826	97.279
Cement/concrete	m3	519	27	546	1.151	1.207
Other	ton	4,19	50	54,19	50	1.683
Used materials resulted from recycled materials (data limited to Sogin)						
		Sogin 2020			**Sogin 2019**	**Sogin 2018**
Paper	%	90%			24%	92%
Paper	ton	10,3			4,36	21,83
Other renewable materials	ton	0			0	0
Other non-renewable materials	ton	0			0	0
GRI 302-1: ENERGY CONSUMPTION WITHIN THE ORGANIZATION						
Total energy consumption	**GJ**	**178.278**	**7.896**	**186.174**	**172.733**	**166.963**
Methane	GJ	21.535	2.582	24.117	23.927	15.810
Fuel	GJ	124	0	124	136	166
Diesel	GJ	22.963	864	23.827	25.877	33.316
Electric energy	GJ	87.903	4.446	92.349	105.408	115.114
Other	GJ	45.753	3	45.757	17.385	2.556
GRI 303-3: INTERACTIONS WITH WATER AS A SHARED RESOURCE						
Water with-drawal by source	**ML**	**4.323**	**109**	**4.432**	**5.862**	**12.232**
Well	ML	312	109	421	606	609
River	ML	846	0	846	4.928	5.423
Sea	ML	2.873	0	2.873	0	5.935
Ground Water	ML	173	0	173	212	189
Water from third parties	**ML**	**120**	**0**	**120**	**115**	**76**
Of which:						
Aqueduct	ML	38	0	38	38	41
Well/Source of third parties	ML	83	0	83	77	35
Performance indicators	**UdM**	**Sogin 2020**	**Nucleco 2020**	**Group 2020**	**Group 2019**	**Group 2018**
Water with-drawal from wa-ter-stres-sed are-as	**ML**	**306**	**0**	**306**	**351**	**321**

Well	ML	0	0	0	0	0
River	ML	257	0	257	307	311
Sea	ML	0	0	0	0	0
Ground Water	ML	0	0	0	0	0
Water from third parties	**ML**	**48**	**0**	**48**	**45**	**10**
Of which:						
Aqueduct	ML	21	0	21	18	10
Well/Source of third parties	ML	27	0	27	27	0
Water withdrawal by source, divided in fresh water and other sources	**ML**	**1.230**	**0**	**1.230**	**5.418**	**5.856**
Fresh water	ML	1.220	0	1.220	5.409	5.846
Other types	ML	10	0	10	9	10
GRI 303-4: WATER DISCHARGE						
Total water discharge	**ML**	**1.160**	**0**	**1.160**	**5.589**	**5.589**
Well	ML	225	0	225	231	231
River	ML	846	0	846	5.299	5.299
Sea	ML	11	0	11	9	9
Ground Water	ML	-	0	0	-	-
Water from third parties	**ML**	**78**	**0**	**78**	**50**	**50**
Of which:						
Aqueduct	ML	15	0	15	4	4
Well of third parties	ML	64	0	64	45	45
Total water discharge divided by fresh water and other sources	**ML**	**941**	**0**	**941**	**5.544**	**5.544**
Fresh water	ML	930	0	930	5.534	5.534
Other water types	ML	11	0	11	9	9
Total water discharge in water-stressed areas divided by fresh water and other sources	**ML**	**21**	**0**	**21**	**9**	**9**
Fresh water	ML	10	0	10	-	-
Other water types	ML	11	0	11	9	9
GRI 305-1: DIRECT (SCOPE 1) GHG EMISSIONS						
Direct (Scope 1) GHG emissions	**tCO2**	**6.390**	**209**	**6.599**	**13.480**	**3.983**

Performance In-dicators	UdM	Sogin 2020	Nucleco 2020	Group 2020	Group 2019	Group 2018
GRI 305-2: ENERGY INDIRECT (SCOPE 2) GHG EMISSIONS						
Energy indirect (Scope 2) GHG emissions	**tCO2**	**8.766**	**443**	**9.209**	**10.980**	**12.482**

GRI 306-2: TOTAL WASTE BY TYPE AND DISPOSAL METHOD						
Total weight of waste	ton	24.388	6.017	30.404	24.319	21.899
Company	ton	11.909	6.017	17.925	4.970	9.203
Suppliers	ton	12.479	0	12.479	19.349	12.697
Total weight of hazardous waste	**ton**	**4.691**	**4.688**	**9.379**	**6.415**	**7.002**
Company	ton	56	4.688	4.744	3.190	6.965
Suppliers	ton	4.635	0	4.635	3.225	37
Total weight of non-hazardous waste	**ton**	**19.697**	**1.329**	**21.025**	**17.904**	**14.898**
Company	ton	11.853	1.329	13.182	1.780	2.238
Suppliers	ton	7.844	0	7.844	16.124	12.660
Total weight of disposed waste	**ton**	**15.077**	**4.688**	**19.765**	**8.037**	**9.914**
Total weight of hazardous waste disposed of	**ton**	**4.606**	**4.688**	**9.294**	**7.097**	**6.962**
Company	ton	30	4.688	4.718	3.897	6.951
Suppliers	ton	4.576	0	4.576	3.200	11
Total weight of non-hazardous waste disposed of	**ton**	**10.471**	**0**	**10.471**	**940**	**2.952**
Company	ton	5.802	0	5.802	443	1.009
Suppliers	ton	4.669	0	4.669	497	1.944
Total weight of waste recovered	**ton**	**5.622**	**1.329**	**6.951**	**17.006**	**12.643**
Total weight of hazardous waste recovered	**ton**	**85**	**0**	**85**	**46**	**44**
Company	ton	25	0	25	20	14
Suppliers	ton	59	0	59	26	31
Total weight of non-hazardous waste recovered	**ton**	**5.538**	**1.329**	**6.866**	**16.960**	**12.598**
Company	ton	2.363	1.329	3.692	1.333	1.421
Suppliers	ton	3.175	0	3 175	15.627	11.177
Total weight of waste stored in interim repository	**ton**	**3.712**	**0**	**3.712**	**1.303**	**19**
Total weight of hazardous waste stored in interim repository	**ton**	**4**	**0**	**4**	**1.282**	**2**
Company	ton	4	0	4	1.282	2
Suppliers	ton	0	0	0	0	0
Total weight of non-hazardous waste stored in interim repository	**ton**	**3.709**	**0**	**3.709**	**21**	**16**
Company	ton	3.709	0	3.709	21	16
Suppliers	ton	0	0	0	0	0
Other destination	**ton**	**0**	**0**	**0**	**0**	**0**

GRI REFERENCE TABLE

TOPICS	GRI REFERENCE STANDARD	REPORTING SCOPE	
		CORPORATE	EXTERNAL
Accountability and collaboration with national Institutions and Associations	GRI 201: ECONOMIC PERFOMANCE 2016	✓	
	GRI 413: LOCAL COMMUNITIES 2016	✓	
	GRI 415: PUBLIC POLICY 2016	✓	
	GRI 419: SOCIOECONOMIC COMPLIANCE 2016	✓	
Engagement and dialogue with local stakeholders	GRI 413: LOCAL COMMUNITIES 2016	✓	
Decommissioning progress - physical	GRI 302: ENERGY 2016	✓	
	GRI 303: WATER AND WATER DISCHARGE 2018	✓	
	GRI 305: EMISSIONS 2016	✓	
Compliance normativa	GRI 207: TAXES 2019	✓	
	GRI 307: ENVIRONMENTAL COMPLIANCE 2016	✓	
	GRI 419: SOCIOECONOMIC COMPLIANCE 2016	✓	
Fight against Corruption	GRI 205: ANTI-CORRUPTION 2016	✓	
Circular Economy	GRI 301: MATERIALS 2016	✓	
	GRI 306: EFFLUENTS AND WASTE 2016	✓	
Radioactive Waste Management	GRI 306: EFFLUENTS AND WASTE 2016	✓	
Siting of the National Repository and Tech. Park	GRI 203: INDIRECT ECONOMIC IMPACTS 2016	✓	
	GRI 413: LOCAL COMMUNITIES 2016	✓	
Radiological Safety	GRI 403: OCCUPATIONAL HEALTH AND SAFETY 2018	✓	
Safety in the workplace	GRI 403: OCCUPATIONAL HEALTH AND SAFETY 2018	✓	
Supply chain	GRI 204: PROCUREMENT PRACTICES 2016	✓	
	GRI 308: SUPPLIER ENVIRONMENTAL ASSESSMENT 2016	✓	
	GRI 414: SUPPLIER SOCIAL ASSESSMENT 2016	✓	
HR Development, Talent Management and Equal Opportunity	GRI 401: EMPLOYMENT 2016	✓	
	GRI 402: LABOR/MANAGEMENT RELATIONS	✓	
	GRI 404: TRAINING AND EDUCATION	✓	
	GRI 405: DIVERSITY AND EQUAL OPPORTUNITY	✓	
Corporate Welfare, Workers' Health and Wellbeing	GRI 401: EMPLOYMENT	✓	
Decommissioning Progress - costs	N/A	✓	
Sharing of Scientific know-how	N/A	✓	
Technological Innovation and Research	N/A	✓	

GRI CONTENTS INDEX

GRI STANDARD	NOTICE	PARAGRAPH	PAGE NUMBER OR LINK	OMISSIONS OR LIMITATIONS
General Notice				
Organisation Profile				
GRI 102: Informativa generale 2016	102-1 Name of organisation	About us	24-25	
	102-2 Activities, brands, products and services	About us Market activities	24-25 98-103	
	102-3 Location of head office	Back cover	156	
	102-4 Location of activities	About us Closure of the Italian nuclear cycle	24-25 42	
	102-5 Ownership and legal form	Our governance	32-33	
	102-6 Markets served	About us Market activities	24-25 98-103	
	102-7 Size of organisation	About us GRI indicators - Human Resources	"24-25 146"	
	102-8 Information on employees and other workers	GRI indicators - Human Resources Our stakeholders	46 106-107	
	102-9 Supply chain	Relations with suppliers	132	
	102-10 Significant changes to the organisation and its supply chain	Methodological note Supplier relations	7 132	
	102-11 Precautionary principle	Integrated management system	36-37	
	102-12 External initiatives	Value for the area	121-122	
	102-13 Membership in associations	Collaborations and partnerships International network	128-129 130-131	
Strategy				
GRI 102: 2016 General Notice	102-14 Statement by a senior manager	Letter to stakeholders	5	
Ethics and Integrity				
GRI 102: 2016 General Notice	102-16 Values, principles, standards and rules of conduct	About us Our governance	24-25 32-33	
Governance				
GRI 102: 2016 General Notice	102-18 Governance structure	Our governance	32-33	
Stakeholder Involvement				
GRI 102: 2016 General Notice	102-40 List of stakeholder groups	Our stakeholders	106-107	
	102-41 Collective bargaining agreements	Corporate welfare	119-120	
	102-42 Identification and selection of stakeholders	Materiality analysis Our stakeholders	18-21 106-107	
	102-43 Methods of involving stakeholders	Materiality analysis Our stakeholders	18-21 106-107	
	102-44 Key issues and concerns raised	Materiality analysis Our Stakeholders	18-21 106-107	

Reporting Practices				
GRI 102: Informativa generale 2016	102-45 Entities included in the consolidated financial statements	Methodological note	7	
	102-46 Definition of report content and topic perimeters	Methodological note	7	
	102-47 List of material topics	Methodological note Materiality analysis	7 18-21	
	102-48 Review of information	Methodological note	7	
	102-49 Changes in reporting	Methodological note	7	
	102-50 Reporting period	Methodological note	7	
	102-51 Date of most recent report	Methodological note	7	
	102-52 Reporting cycle	Methodological note	7	
GRI 102: Informativa generale 2016	102-53 Contact information for inquiries about the report	Back cover	156	
	102-54 Statement on reporting in accordance with GRI Standards	Methodological note	7	
	102-55 Index of GRI contents	GRI contents index	156	
	102-56 External assurance	Independent auditors' report	162	
SPECIFIC STANDARDS				
ECONOMIC				
Economic performance (Accountability and cooperation with national institutions and associations)				
GRI 103: 2016 Management Mode	103-1 Explanation of the material subject matter and its perimeter	Materiality analysis Economic value for stakeholders GRI linkage table	21 28-29 155	
	103-2 The management mode and its components	Economic value for stakeholders	28-29 For further details, please refer to Sogin Group's Consolidated Financial Statements as at 31 December 2020.	
	103-3 Assessment of the management mode	Economic value for stakeholders	28-29 For further details, please refer to Sogin Group's Consolidated Financial Statements as of 31 December 2020.	
GRI 201: 2016 Economic Performance	201-1 Economic value directly generated and distributed	Economic value for stakeholders	28-29	
	201-4 Financial assistance received from the government	Economic value for stakeholders	28-29	
Indirect economic impacts (Location of DNPT)				
GRI 103: 2016 Management Mode	103-1 Explanation of the material subject matter and its perimeter	Materiality analysis National repository and technology park: a country project GRI linkage table	21 74-77 155	
	103-2 The management mode and its components	National Repository and Technology Park : a country project	74-77	
	103-3 Assessment of the management mode	National Repository and Technology Park : a country project	74-77	
GRI 203: 2016 Indirect Economic Impacts	203-1 Infrastructure investments and services financed	National Repository and Technology Park : a country project	74-77	
	203-2 Significant indirect economic impacts	National Repository and Technology Park : a country project	74-77	
Supply chain practices				
GRI 103: 2016 Management Mode	103-1 Explanation of the material subject matter and its perimeter	Materiality analysis Relations with suppliers GRI linkage table	21 132-136 155	
	103-2 The management mode and its components	Relations with suppliers	132-136	
	103-3 Assessment of the management mode	Relations with suppliers	132-136	

GRI 204: 2016 Supply Chain Practices	204-1 Proportion of expenditure on local suppliers	Relations with suppliers	132-136	
Anticorruption (Fight against corruption)				
GRI 103: 2016 Management Mode	103-1 Explanation of the material subject matter and its perimeter	Materiality analysis Organisation, control and risk management GRI linkage table	21 32-39 155	
	103-2 The management mode and its components	Organisation, control and risk management	32-39	
	103-3 Assessment of the manage-ment mode	Organisation, control and risk management	32-39	
GRI 205: 2016 Anticorruption	205-3 Established incidents of corruption and action taken	Organisation, control and risk management	32-39	
Taxes (Regulatory compliance)				
GRI 103: 2016 Management Mode	103-1 Explanation of the material subject matter and its perimeter	Tax strategy GRI linkage table	28 155	
	103-2 The management mode and its components	Tax strategy	28	
	103-3 Assessment of the management mode	Tax strategy	28	
GRI 207: Taxes 2019 management mode	207-1 Approach to taxation	Tax strategy	28	
	207-2 Tax governance, control and risk management	Tax strategy	28	
	207-3 Stakeholder involvement and management of tax concerns	Tax strategy	28	
ENVIRONMENTAL				
Materials (Circular economy)				
GRI 103: 2016 Management Mode	103-1 Explanation of the material subject matter and its perimeter	Materiality analysis Closure of the Italian nuclear cycle GRI linkage table	21 42 155	
	103-2 The management mode and its components	Closure of the Italian nuclear cycle Environmental sustainability	42 94	
	103-3 Evaluation of the management mode	Closure of the Italian nuclear cycle	42	
GRI 301: 2016 Materials	301-1 Materials used by weight or volume	GRI indicators - Environment	152	
Energy (Decommissioning activities - physical)				
GRI 103: 2016 Management Mode	103-1 Explanation of the material subject matter and its perimeter	Materiality analysis Closure of the Italian nuclear cycle GRI linkage table.	21 42 155	
	103-2 The management mode and its components	Closure of the Italian nuclear cycle Environmental sustainability	42 94	
	103-3 Assessment of the management mode	Closure of the Italian nuclear cycle	42	
GRI 302: 2016 Energy	302-1 Energy consumed within the organisation	GRI indicators - Environment	152	
Water and waste water (Decommissioning activities - physical)				
GRI 103: 2016 Management Mode	103-1 Explanation of the material subject matter and its perimeter	Materiality analysis Closure of the Italian nuclear cycle GRI linkage table	21 42 155	
	103-2 The management mode and its components	Closure of the Italian nuclear cycle Environmental sustainability	42 94	
	103-3 Assessment of the manage-ment mode	Closure of the Italian nuclear cycle	42	
GRI 303: Water and waste water 2018 Management Mode	303-1 Interaction with water as a shared resource	Closure of the Italian nuclear cycle	42	
	303-2 Management of impacts related to water discharge	Closure of the Italian nuclear cycle	42	
GRI 303: 2018 Water and waste water	303-3 Water withdrawal	GRI indicators - Environment	152-153	
	303-4 Water discharge	GRI indicators - Environment	152-153	

Emissions (Decommissioning activities - physical)				
GRI 103: 2016 Management Mode	103-1 Explanation of the material subject matter and its perimeter	Materiality analysis Closure of the Italian nuclear cycle GRI linkage table	21 42 155	
	103-2 The management mode and its components	Closure of the Italian nuclear cycle Environmental sustainability	42 94	
	103-3 Assessment of the management mode	Closure of the Italian nuclear cycle	42	
GRI 305: 2016 Emissions	305-1 Direct emissions of GHG (Scope 1)	GRI indicators - Environment	153-154	
	305-2 Indirect emissions of GHG from energy consumption (Scope 2)	GRI indicators - Environment	153-154	
Discharges and waste (Circular economy; Radioactive waste management)				
GRI 103: 2016 Management Mode	103-1 Explanation of the material subject matter and its perimeter	Materiality analysis Closure of the Italian nuclear cycle GRI linkage table.	21 42 155	
	103-2 The management mode and its components	Closure of the Italian nuclear cycle Environmental sustainability	42 94	
	103-3 Assessment of the management mode	Closure of the Italian nuclear cycle	42	
GRI 306: 2016 Discharges and waste	306-2 Waste by type and method of disposal	GRI indicators - Environment	154	
Environmental compliance (Regulatory compliance)				
GRI 103: 2016 Management Mode	103-1 Explanation of the material subject matter and its perimeter	Materiality analysis GRI linkage table	21 155	
	103-2 The management mode and its components	Organisation and control	34	
	103-3 Assessment of the management mode	Organisation and control	34	
GRI 307: 2016 Environmental compliance	307-1 Non-compliance with environmental laws and regulations	In 2020, no sanctions were recorded for violations of environmental laws and regulations	159	
Environmental assessment of suppliers (Supply chain)				
GRI 103: 2016 Management Mode	103-1 Explanation of the material subject matter and its perimeter	Materiality analysis Relations with suppliers GRI linkage table	21 132-136 155	
	103-2 The management mode and its components	Relations with suppliers	132-136	
	103-3 Assessment of the manage-ment mode	Relations with suppliers	132-136	
GRI 308: Valutazione ambientale dei fornitori 2016	308-1 New suppliers assessed using environmental criteria	Relations with suppliers	132-136	
SOCIAL				
Employment (Human resources development, talent management and equal opportunities; Corporate welfare, employee health and well-being)				
GRI 103: 2016 Management Mode	103-1 Explanation of the material subject matter and its perimeter	Materiality analysis Our stakeholders - Focus on our people GRI linkage table	21 106 155	
	103-2 The management mode and its components	Our stakeholders - Focus on our people	106	
	103-3 Assessment of the management mode	Our stakeholders - Focus on our people	106	

GRI 401: 2016 Employment	401-1 New hires and turnover	GRI indicators - Human resources	147-149	
	401-3 Parental leave	GRI indicators - Human resources	149	
Labour-management relations (Human resources development, talent management and equal opportunities)				
GRI 103: 2016 Management Mode	103-1 Explanation of the material subject matter and its perimeter	Materiality analysis Our stakeholders GRI linkage table.	21 106 155	
	103-2 The management mode and its components	Our stakeholders - Corporate welfare	106	
	103-3 Assessment of the manage-ment mode	Our stakeholders - Corporate welfare	106	

GRI 402: Relazioni tra lavoratori e management 2016	402-1 Periodo minimo di preavviso per cambiamenti operativi	Our stakeholders - Corporate welfare	106	
Health and safety at work (Radiological safety; Occupational safety)				
GRI 103: 2016 Management Mode	103-1 Explanation of the material subject matter and its perimeter	Materiality analysis Our stakeholders - Occupational health and safety GRI linkage table	21 110 155	
	103-2 The management mode and its components	Our stakeholders - Occupational health and safety	110	
	103-3 Assessment of the management mode	Our stakeholders - Occupational health and safety	110	
GRI 403: Occupational health and safety. 2018 management mode	403-1 Occupational health and safety management system	Our stakeholders - Occupational health and safety	110	
	403-2 Hazard identification, risk assessment and accident investigation	Our stakeholders - Occupational health and safety	110	
	403-3 Occupational health services	Our stakeholders - Occupational health and safety	110	
	403-4 Worker participation, consultation and communication on occupational health and safety	Our stakeholders - Occupational health and safety	110	
	403-5 Occupational health and safety training of workers	Our stakeholders - Occupational health and safety	110	
	403-6 Workers' health promotion	Our stakeholders - Occupational health and safety	110	
GRI 403: 2018 Occupational health and safety	403-9 Accidents at work	Our stakeholders - Occupational health and safety	111-113	
Training and education (Human resources development, talent management and equal opportunities)				
GRI 103: 2016 Management Mode	103-1 Explanation of the material subject matter and its perimeter	Materiality analysis Our stakeholders - Training GRI linkage table	21 115 155	
	103-2 The management mode and its components	I nostri stakeholder - Formazione	115	
	103-3 Assessment of the management mode	I nostri stakeholder - Formazione	115	
GRI 404: 2016 Training and education	404-1 Average hours of training per employee per year	Indicatori GRI - Risorse Umane	149-150	
Local communities (Accountability and collaboration with national institutions and associations; Listening to and dialogue with local communities; Localisation of the DNPT)				
GRI 103: 2016 Management Mode	103-1 Explanation of the material subject matter and its perimeter	Materiality analysis Value for the area GRI linkage table	21 121-122 155	
	103-2 The management mode and its components	Value for the area	121-122	
	103-3 Assessment of the management mode	Value for the area	121-122	
GRI 413: 2016 Local communities	413-1 Activities requiring community involvement, impact assessments and development programmes	Value for the area	121-122	
	413-2 Activities with significant current, potential and negative impacts on local communities	Value for the area	121-122	
Diversity and equal opportunities (Human resources development, talent management and equal opportunities)				
GRI 103: 2016 Management Mode	103-1 Explanation of the material subject matter and its perimeter	Materiality analysis Our stakeholders - Corporate welfare GRI linkage table	21 121-122 155	
	103-2 The management mode and its components	Our stakeholders - Corporate welfare	121-122	
	103-3 Assessment of the management mode	Our stakeholders - Corporate welfare	121-122	

GRI 405: 2016 Diversity and equal opportunities	405-1 Diversity in governing bodies and among employees	GRI indicators - Human resources	121-122	
	405-2 Ratio of basic salary and remuneration of women to men	GRI indicators - Human resources	121-122	
Social evaluation of suppliers (Supply chain)				
GRI 103: 2016 Management Mode	103-1 Explanation of the material subject matter and its perimeter	Materiality analysis Relations with suppliers GRI linkage table	21 132-136 155	
	103-2 The management mode and its components	Relations with suppliers	132-136	
	103-3 Assessment of the management mode	Relations with suppliers	132-136	
GRI 414: 2016 Social evaluation of suppliers	414-1 New suppliers assessed using social criteria	Relations with suppliers	132-136	
Public policy (Accountability and cooperation with national institutions and associations)				
GRI 103: 2016 Management Mode	103-1 Explanation of the material subject matter and its perimeter	Materiality analysis Relations with suppliers GRI linkage table	21 126-127 155	
	103-2 The management mode and its components	Relations with Institutions	126-127	
	103-3 Assessment of the management mode	Relations with Institutions	126-127	
GRI 415: 2016 Public Policy	415-1 Political contributions	Relations with Institutions	126-127	
Socio-economic compliance (Accountability and cooperation with national institutions and associations; Regulatory compliance)				
GRI 103: 2016 Management Mode	103-1 Explanation of the material subject matter and its perimeter	Materiality analysis GRI linkage table	21 155	
	103-2 The management mode and its components	Organisation, control and risk management	32	
	103-3 Assessment of the management mode	Organisation, control and risk management	32	
GRI 419: 2016 Socio-economic compliance	419-1 Non-compliance with social and economic laws and regulations	In 2020, no pecuniary and/or non-pecuniary sanctions were incurred for violations of laws and regulations in the social and economic spheres, which demonstrates that the Group operates in compliance with all applicable laws and regulations	161	
Decommisiong progress - costs				
GRI 103: 2016 Management Mode	103-1 Explanation of the material subject matter and its perimeter	Materiality analysis Closure of the Italian nuclear cycle GRI linkage table	21 42 155	
	103-2 The management mode and its components	Closure of the Italian nuclear cycle Environmental sustainability	42 94	
	103-3 Assessment of the management mode	Closure of the Italian nuclear cycle Environmental sustainability	42 94	
Sharing of scientific know-how				
GRI 103: 2016 Management Mode	103-1 Explanation of the material subject matter and its perimeter	Materiality analysis Our stakeholders - Training GRI linkage table.	21 115 155	
	103-2 The management mode and its components	Our stakeholders - Training	115	
	103-3 Assessment of the management mode	Our stakeholders - Training	115	
Technological innovation and research				
GRI 103: 2016 Management Mode	103-1 Explanation of the material subject matter and its perimeter	Materiality analysis Closure of the Italian nuclear cycle GRI linkage table	21 42 155	
	103-2 The management mode and its components	Closure of the Italian nuclear cycle Environmental sustainability	42 94	
	103-3 Assessment of the management mode	Closure of the Italian nuclear cycle Environmental sustainability	42 94	

Independent auditor's report on Sustainability Report 2020

SO.G.I.N. SpA

Independent auditor's report on Sustainability Report 2020

To the Board of Directors of
SO.G.I.N. SpA

We have been engaged to undertake a limited assurance engagement on the Sustainability Report of SO.G.I.N. Group (hereinafter also the "Group") for the year ended 31 December 2020.

Responsibilities of the Directors for the Sustainability Report

The Directors of SO.G.I.N. SpA are responsible for the preparation of the Sustainability Report in accordance with the "Global Reporting Initiative Sustainability Reporting Standards" issued by GRI - Global Reporting Initiative (the "GRI Standards") as updated in 2019, as illustrated in the "Methodological note" section of the Sustainability Report.

The Directors are also responsible for such internal control as they determine is necessary to enable the preparation of a Sustainability Report that is free from material misstatement, whether due to fraud or error.

The Directors are also responsible for defining the sustainability performance targets of the SO.G.I.N. Group, as well as for identifying its stakeholders and material topics to be reported on.

Auditor's Independence and Quality Control

We have complied with the independence and other ethical requirements of the Code of Ethics for Professional Accountants issued by the International Ethics Standards Board for Accountants, which is founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behaviour.

Our firm applies International Standard on Quality Control 1 (ISQC Italia 1) and accordingly maintains a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

PricewaterhouseCoopers SpA

Sede legale: **Milano** 20145 Piazza Tre Torri 2 Tel. 02 77851 Fax 02 7785240 Capitale Sociale Euro 6.890.000,00 i.v. C.F. e P.IVA e Reg. Imprese Milano Monza Brianza Lodi 12979880155 Iscritta al n° 119644 del Registro dei Revisori Legali - Altri Uffici: **Ancona** 60131 Via Sandro Totti 1 Tel. 071 2132311 - **Bari** 70122 Via Abate Gimma 72 Tel. 080 5640211 - **Bergamo** 24121 Largo Belotti 5 Tel. 035 229691 - **Bologna** 40126 Via Angelo Finelli 8 Tel. 051 6186211 - **Brescia** 25121 Viale Duca d'Aosta 28 Tel. 030 3697501 - **Catania** 95129 Corso Italia 302 Tel. 095 7532311 - **Firenze** 50121 Viale Gramsci 15 Tel. 055 2482811 - **Genova** 16121 Piazza Piccapietra 9 Tel. 010 29041 - **Napoli** 80121 Via dei Mille 16 Tel. 081 36181 - **Padova** 35138 Via Vicenza 4 Tel. 049 873481 - **Palermo** 90141 Via Marchese Ugo 60 Tel. 091 349737 - **Parma** 43121 Viale Tanara 20/A Tel. 0521 275911 - **Pescara** 65127 Piazza Ettore Troilo 8 Tel. 085 4545711 - **Roma** 00154 Largo Fochetti 29 Tel. 06 570251 - **Torino** 10122 Corso Palestro 10 Tel. 011 556771 - **Trento** 38122 Viale della Costituzione 33 Tel. 0461 237004 - **Treviso** 31100 Viale Felissent 90 Tel. 0422 696911 -

Auditor's Responsibilities

Our responsibility is to express a conclusion, based on the procedures performed, on whether the Sustainability Report complies with the requirements of the GRI Standards. We conducted our work in accordance with "International Standard on Assurance Engagements ISAE 3000 (Revised) - Assurance Engagements other than Audits or Reviews of Historical Financial Information" (hereinafter also "ISAE 3000 Revised") issued by the International Auditing and Assurance Standards Board (IAASB) for limited assurance engagements. That standard requires that we plan and perform procedures to obtain limited assurance about whether the Sustainability Report is free from material misstatement.

The work performed was less in scope than in a reasonable assurance engagement conducted in accordance with ISAE 3000 Revised and, consequently, we did not obtain assurance that we became aware of all significant facts and circumstances that might be identified in a reasonable assurance engagement.

The procedures performed on the Sustainability Report were based on our professional judgement and included inquiries, primarily of personnel of the Company responsible for the preparation of the information presented in the Sustainability Report, inspection of documents, recalculations and other procedures designed to obtain evidence considered useful.

In detail, we performed the following procedures:

1 We analysed the process of definition of the material topics reported on in the Sustainability Report, with reference to the method of their identification in terms of priority for the various categories of stakeholders and to the internal validation of the results of the process;

2 We obtained an understanding of the processes underlying the generation, collection and management of significant qualitative and quantitative information included in the Sustainability Report.

   In detail, we inquired of and discussed with management personnel of SO.G.I.N. SpA and we carried out limited analyses of documentary evidence, in order to obtain information about the processes and procedures supporting the collection, aggregation, processing and submission of non-financial information to the corporate function in charge of the preparation of the Sustainability Report.

Furthermore, for significant information, taking into account the activities and characteristics of the Group:

- at the level of SO.G.I.N. SpA, as "parent company":

  (a) with reference to the qualitative information presented in the Sustainability Report, we carried out interviews and obtained supporting documents to verify its consistency with available evidence;

  (b) with reference to quantitative information, we performed both analytical procedures and limited tests to verify, on a sample basis, the accuracy of data aggregation.

- for the site of Bosco Marengo, which we selected based on its activities, contribution to performance indicators at a consolidated level and location, we carried out meetings during which we met the persons responsible and obtained documentary evidence, on a sample basis, about the correct application of the procedures and calculation methods applied for the indicators.

Conclusion

Based on the work performed, nothing has come to our attention that causes us to believe that the Sustainability Report of the SO.G.I.N. Group for the year ended 31 December 2020 is not prepared, in all material respects, in accordance with the requirements of the GRI Standards as illustrated in the "Methodological note" section of the Sustainability Report.

Rome, 19 July 2021

PricewaterhouseCoopers SpA

Signed by

Pierpaolo Mosca
(Partner)

This report has been translated from the Italian original solely for the convenience of international readers. We have not performed any controls on the Sustainability Report 2020 translation.

SUSTAINABILITY REPORT 2020

Creative design by Sogin

CONTACTS

Sogin
Via Marsala, 51c
00186 Roma

Email: bds@sogin.it
PEC: sogin@pec.sogin.it

FOLLOW US:

sogin.it
nucleco.it
depositonazionale.it