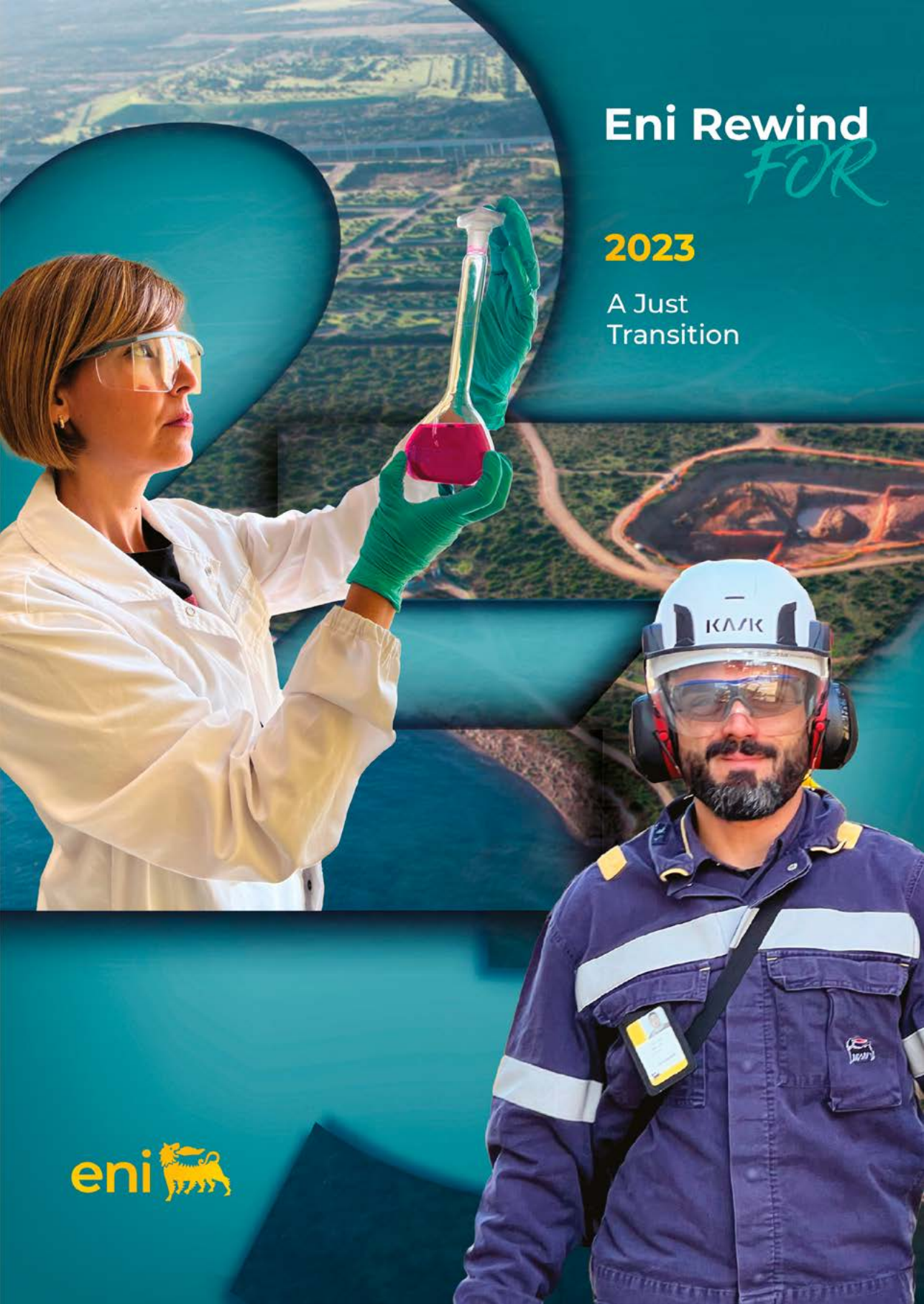
Eni Rewind FOR

2023

A Just Transition



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Eni Rewind's Mission

We are Eni's environmental company.
We work according to the principles of the circular economy
to give new life to industrial land and waste through efficient,
sustainable remediation and revaluation projects.
We base our work on passion, skills and technological research
to regenerate soils, water and recoverable resources.
We believe in dialogue and integration with the communities that host us.

Eni's Mission

We are an energy company.
13 15 We concretely support a just energy transition,
with the objective of preserving our planet
7 12 and promoting an efficient and sustainable
access to energy for all.
9 Our work is based on passion and innovation,
on our unique strengths and skills.
5 10 On the equal dignity of each person, recognizing diversity
as a key value for human development,
On the responsibility, integrity and transparency of our actions.
17 We believe in the value of long-term partnerships with the Countries
and communities where we operate, bringing long-lasting prosperity for all.

Global goals for a sustainable development

The 2030 Agenda for Sustainable Development, presented in September 2015, identifies the 17 Sustainable Development Goals (SDGs) which represent the common targets of sustainable development on the current complex social problems. These goals are an important reference for the international community and Eni in managing activities in those Countries in which it operates.

Eni Rewind FOR 2023

A JUST TRANSITION

Message to stakeholders	2
Eni Rewind in summary	4
Eni Rewind's approach to a Just Transition	5
Our story	6
Eni Rewind's solutions for the market	8
The partnership with LabAnalysis	10
Certifications and Attestations	11
Each of Us	12
Safety and Environment	13
Innovation and digitalisation	14
Remediation	18
Water Management	24
Waste Management	28
Eni Rewind in the Eni Value Chain	30
Methodological Note	31

Message to stakeholders

Porto Torres - Minciaredda Area remediation

2023 marked an important anniversary. Seventy years have passed since Eni's foundation and 20 since, in 2003, Enichem was renamed Syndial and transferred its active petrochemical plants to Polimeri Europa (now Versalis). From that time, Eni's environmental company has been focused on the reconversion and reclamation of disused industrial sites.

Over the years, the activities' perimeter was progressively broadened with the incorporation of Saipem's business branch for waste logistics and environmental planning activities, and with the mandate to operate as global contractor for the remediation and waste of all Eni Italian businesses lines.

In November 2019, the company changed its name to Eni Rewind, acronym for REmediation & Waste INto Development, which states the aim of providing remediation and waste management services also to third-party customers, with a focus on both an economic and social development.

Since 2003 the company has spent around 4 billion euros for the remediation of the company's decommissioned sites, over 80% of which has been used on sites conferred by law or acquired through mergers, as part of the historic industrial rescue operations that Eni had to take on when it was a state-owned company in the 1980s and 1990s.

As of 2020, besides ensuring the continuity of its consolidated activities, Eni Rewind has been committed to the development of two other levers:

i) building waste treatment plants, preferentially on the company's remediated areas, to help reduce the national infrastructure gap, as well as, recovery and disposal costs;

ii) progressively acquiring contracts from non captive customers to valorise the experience gained in the environmental field while gradually upskilling and reskilling employees currently engaged in the remediation activities of Eni sites.

We can count on a team of around 1000 employees, professionals with multidisciplinary experiences who carry out their work with commitment and passion, open to engage constructively with all stakeholders and the communities in which we operate. In line with the strategic directions highlighted above, in 2023 Eni Rewind made significant progress, as hereby described:

- on 30th June 2023, we acquired 30% of the share capital of LabAnalysis Environmental Science, a market leader in environmental testing, with the aim of strengthening our integrated offer of environmental services for external clients while consolidating the coverage of a sector which is fundamental to effectively addressing environmental recovery and waste management solutions;
- in July 2023, Eni and Edison signed an agreement to establish the cooperation between the two companies and the sharing of costs for the environmental

remediation projects at all the industrial sites that in 1989 were conferred by Montedison to Enimont;

- for the Porto Torres site, in November we acquired 100% of the Progetto Nuraghe Scarl, a subsidiary in charge of the environmental platform of which we owned 48.55%, incorporating it on the first semester of 2024. Regarding the site's groundwater remediation, the last two treatment plants (GTP) started operations, thus completing the project's treatment system layout;
- at the Crotone site, the "non-Tenorm" Preliminary Deposit structure was completed and, starting from November, discussions with the new government commissioner and the institutions were intensified in order to overcome the constraint placed by the Regional Single Authorisation Provision (PAUR) of 2019. Specifically, the vetoing of the use of landfills in Calabria, as mandated in the provision, does not allow excavation activities to begin. Following the Service Conference held by the Ministry of Environment and Energy Security (MASE) on 3rd May 2024, we hope to be able to overcome this criticality with the approval of the extract of the Operative Remediation Project Phase 2, as requested by the Ministry, regarding the excavations on the former Pertusola landfill and the internal areas, which could thus commence in the last quarter of 2024. At the same time Eni Rewind, as part of its interventions to reduce groundwater contamination, has completed the pilot plants trials for the Enhanced Natural Attenuation (ENA) and Soil Mixing technologies. On 16th April 2024, the company sent to MASE the Feasibility proposal relating to the Variation of the Operative Remediation Project Phase 2 for the application of in situ technologies. The proposal is currently undergoing examination;
- in terms of research and innovation activities, the company is going forward with the development and application of proprietary technologies at remediation sites; examples are the e-hyrec® devices already operational at the Gela site, the e-limina® method for the application and monitoring of biological groundwater remediation technologies, and the passive sampling, to which ISPRA dedicated a Notebook published in February 2024;
- with regards to waste management for the captive market, in 2023 we managed overall 1.5 million tonnes of special waste, 30% of which pertaining to remediation activities and 70% to industrial processes. These waste materials were sent for recovery or disposal to the network of plants qualified and contracted by the company which are located throughout the national and European territory. During 2023, the recovery index, which is the ratio between recovered and recoverable waste, stood at around 75%, in line with the percentages recorded in previous years;
- at Ravenna, as part of the Ponticelle Project, in June the joint PAUR was obtained for the construction of the treatment platforms (Eni Rewind Soil Bio-Recovery Platform - 80 ktonnes/y - and the HEA, a joint venture with Herambiente, multifunctional platform - 60 ktonnes/y) and, once assigned the related tenders, the building sites were opened. The construction of the primary urbanisation works and the structural embankment forthe treatment platforms is underway. In February 2024 Plenitude completed the photovoltaic plant;
- the authorisation process for the "Viggiano Blue Water" project, which will consent to treat up to 1,700 m^3/day of production waters in Val d'Agri, saw the issuance in April 2024 of the PAUR provision;
- with regards to the project for the construction of plant for the drying and single-combustion of urban sludge (with a capacity of 190,000 tonnes/year) in Porto Marghera, in December 2023 Eni Rewind completed the presentation of the supplementary documents prepared in response to around 300 requests of amendments and observations conveyed by the Region. The PAUR approval process is expected to conclude in 2024.

Looking forward, with twenty years of experience in the environmental sector, we aim to become a market leader both in remediation planning and execution, as well as in the treatment and recovery of waste. We want to further strengthen our competitive positioning, prioritising the building and management of new treatment plants and of an order portfolio from customers in Italy and, progressively, abroad too. We intend to pursue these strategic objectives in partnership with other leaders in the environmental sector who have complementary experiences, skills and assets, and by leveraging on technologies and synergies with other Eni business lines.

Paolo Grossi
Chief Executive Officer

Eni Rewind in summary

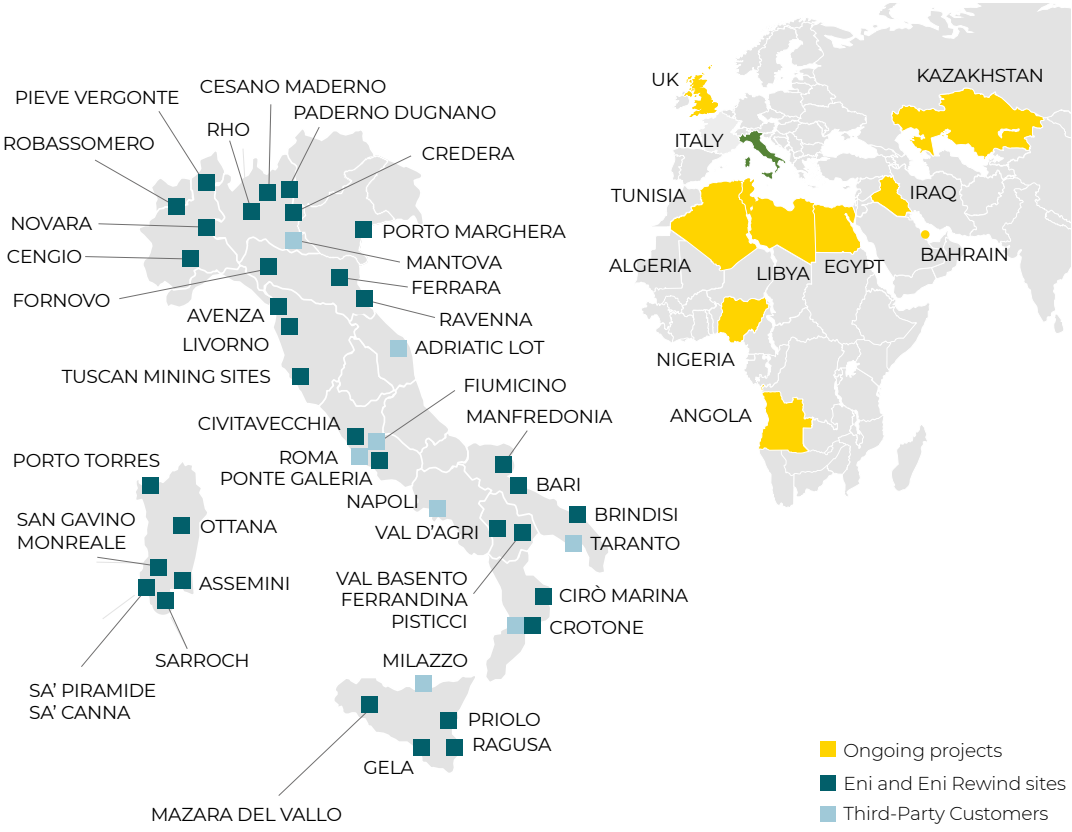
Eni Rewind is Eni's environmental company and has been committed for over twenty years to environmental remediation and the treatment and recovery of water and waste, with specialised services for all of Eni groups as well as for private and public customers. The English word Rewind was chosen as an acronym for REmediation and Waste INto Development, an effective summary of the company mission.

Today, Eni Rewind, with its team of around 1000 resources, oversees every phase of the recovery process, from environmental investigations to planning and engineering, up to the implementation of interventions that apply the best available solutions and focus on promoting the future reuse of disused areas. In June 2023, the company has acquired 30% of LabAnalysis Environmental Science, Italian market leader in the environmental testing sector with a team of over 500 specialists.

The company owns approximately 3,700 hectares of land in Italy, of which about 65% are located in Sites of National Priority. As of 2023, some 60% of Eni Rewind's land is either non-contaminated or remediated, and therefore available for new projects. The remaining 40% has on-going environmental interventions aimed at the reuse of those areas, mainly over the course of the next decade, primarily for developing new plants for renewable energy production and for waste treatment and recovery.

In collaboration with its stakeholders and thanks to a network of partnerships with research institutes and universities, the company supports innovation through trials and implementation of new remediation technologies. With a goal of continued progressive growth as a market operator, Eni Rewind has expanded its customer portfolio to include Q8, Edison, Invitalia, Acciaierie d'Italia and Raffineria di Milazzo.

WHERE ENI REWIND OPERATES



Eni Rewind's approach to a Just Transition

For more information ▶ Eni for 2023 - Just Transition

Through its integrated and circular operating model, Eni Rewind is committed to maximising the benefits of resource recovery and reuse, while focusing on environmental protection and on the necessities of the workers and of the communities in which it operates, in line with Eni's strategy for a just transition. An approach that requires the concrete application of a regenerative systemic vision, in which production and consumption cycles are waste-free and based on the increasing inclusion and participation of the actors involved throughout the supply chain, from institutions and entities to our partners, suppliers and customers. To be truly fair, the Just Transition, for Eni Rewind, must preserve and give new life to natural resources and recover waste and refuse, making the best use of the levers of technological evolution and of economic and social cooperation. Furthermore, implementing a complex and long-term transition cannot overlook the need to prioritise the most effective interventions and synchronise the "phase-out", as the decommissioning and conversion of obsolete plants and infrastructure, with the "phase-in", which will enable new technologies and more sustainable services and products. This path will be all the more equitable the more it will succeed in minimising the negative social and economic impacts generated by the change and in supporting development opportunities consistent with the requirements and ambitions of the territories on the basis of direct and indirect workers' needs.

ENI REWIND IN 2023

~1,000 employees

~3,700 ha owned

€935 mln environmental costs

+100 industrial sites where Eni Rewind operates

~70 active work sites

~400 service stations with environmental activities

~84 km total hydraulic barriers

43 groundwater treatment plants

~35 mln m^3 of water treated

~9 mln m^3 of water recovered for industrial and environmental purposes

~1.5 mln ton of total waste managed

~75% of recovered vs recoverable waste

Eni Rewind site at San Gavino Monreale

Our story

Seventy years after Eni's foundation, 2023 also marks 20 years since Enichem was renamed Syndial and transferred its active petrochemical plants to Polimeri Europa now Versalis). Since then, Eni's environmental company has been engaged in the remediation and reconversion of disused industrial sites, acquiring a skill-set able to support a solid business evolution while offering the market sustainable, cutting-edge environmental solutions of shared value for all.

From 2003 to date Eni Rewind, global environmental contractor for all Eni business lines, has spent around 4 billion euros on environmental interventions, with over 90% of it used on sites conferred by law or acquired through mergers, as part of the historic industrial rescue operations that Eni had to take over when it was a state-owned company in the 1980s and 1990s.

eni 1953 2023 70 YEARS of Eni

eni rewind
remediation & waste into development

2003 2023 20 YEARS of Environmental Services

EVOLUTION AND TRANSFORMATION OVER THE YEARS

1953

THE BIRTH OF ENI
On 10th February 1953, the Parliament establishes the Ente Nazionale Idrocarburi

1982

The chemical plants of the **SIR-Rumianca group**, following a financial crisis, are transferred to Eni by decree-law

1988

Eni and Montedison transfer their chemical activities to **ENIMONT**, of which Eni acquires total control in 1990

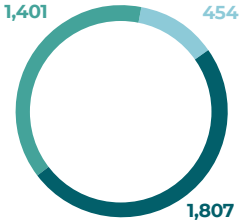
2003

FROM ENICHEM TO SYNDIAL
In 2003, after transferring its active sites to Versalis, Enichem is renamed Syndial and centred on the remediation of decommissioned sites

Avenza site - historical photo

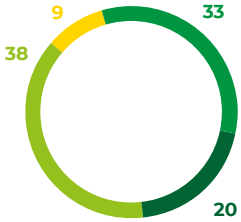
AREAS OWNED AND REMEDIATION COSTS BY SITE ORIGIN

TOTAL AREAS OWNED:
3,662 HECTARES



- Areas with renewables
- Non-contaminated/Remediated
- Undergoing environmental interventions

BREAKDOWN OF AREAS BY ORIGIN (%)



- Sites acquired through Enimont operations (1990)
- Sites acquired by law from other companies

COSTS INCURRED BY SITE ORIGIN (Mln €)
TOTAL: 3,988

ESTIMATED COSTS TO BE INCURRED (Mln €)
TOTAL: 2,236

- Sites acquired by law from the SIR-Rumianca Group (1981)
- Historical Eni sites

2005

Gradual expansion to **GLOBAL CONTRACTOR for Eni**
· 2005
incorporation of the activities of Società Ambiente

2016

· 2011-2015
acquisition from Saipem of the waste logistics and environmental engineering business units
· 2016
Eni R&M entrusts the management of decommissioned sites and service station remediation activities

2018

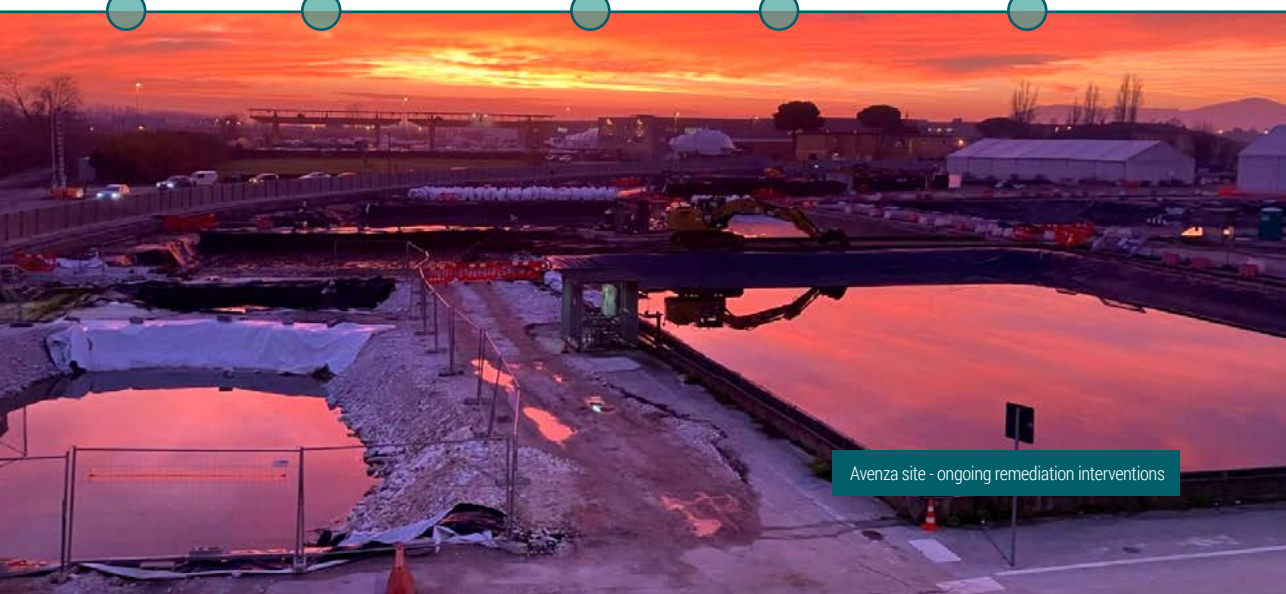
Extension of activities abroad, starting with the water purification project in the Basra area of Iraq

2019

A NEW NAME
Syndial changes name into Eni Rewind, acronym for REmediation and Waste INto Development, and offers its environmental services also to non-Eni customers, both public and private

2023

Acquisition of 30% of LabAnalysis Environmental Science, market leader in the environmental testing sector



Avenza site - ongoing remediation interventions

Eni Rewind's solutions for the market

Eni Rewind has twenty years of experience in the remediation, water and waste management sector, gained at multiple sites with very different industrial and environmental backgrounds, from Eni service stations to Sites of National Priority. Professionalism and expertise have contributed to the progressive portfolio expansion of non-captive initiatives, leading to the acquisition of new customers in the environmental services sector and to the signing of agreements with top market operators for joint participation in new business opportunities. During 2023, the company was awarded and renewed contracts with both public and private third-party customers, including Acciaierie d'Italia, Anas, Edison, Kuwait Refining and Chemistry (Q8 Group), Invitalia and Roma Capitale. To date, the order portfolio amounts to approximately €150 million. In addition, with the aim of strengthening its environmental analysis services, Eni Rewind has acquired shares of LabAnalysis Environmental Science, the Italian sector leader.

REMEDIATION SERVICES

ENVIRONMENTAL PROCUREMENT
STAKEHOLDER ENGAGEMENT AND PERMITTING
PROJECT MANAGEMENT

Characterisation/ preliminary analysis/ emergency safety measures | Risk analysis | Design (environmental engineering) | Execution | Water management | Waste management | Certification monitoring | Land valorisation/ reconversion

Eni Rewind guarantees the supervision of the entire remediation process at every stage, from matrix characterisation to final certification, through innovative and environmentally sound solutions, at clients' and owned sites, to maximise the effectiveness and efficiency of environmental interventions. The company's operational approach is strongly oriented towards the application of on-site and in-situ technologies, including proprietary Eni and Eni Rewind technologies born out of partnerships with universities and research institutions, such as e-hyrec®, e-lorec®, e-limina® and passive sampling on LDPE sheets. While the continuous search for technologies aimed at directly treating the source of contamination has led to the testing and application of remediation systems, such as recirculation wells. The experience gained over the years enables Eni Rewind to design, execute and manage the various types of intervention, relying on in-house units of project managers and field specialists. The multidisciplinary and integrated management of remediation projects includes HSE and procurement services specific to the environmental sector and an in-house ▶ stakeholder engagement unit to involve interested parties from the offset so as to create opportunities for the redevelopment and valorisation of the remediated areas.

Cengio site - capping, laying of the HDPE tarp

WATER MANAGEMENT AND TREATMENT SERVICES

ENVIRONMENTAL PROCUREMENT
AUTOMATION – REMOTISATION

Process Engineering | Construction & Management | Process Monitoring | Discharge or recovery of treated water

Eni Rewind carries out groundwater remediation in multiple industrial sectors through hydraulic barrier systems and in-plant treatment as well as via techniques aimed at removing the source of contamination. All water management assets conform to the Best Available Technology (BAT) and are unique examples at European level for the methodologies and technological solutions adopted. In-house expertise and tools for hydrogeological modelling, automation, remotisation and dynamic control of treatment plants enable optimisation of process reliability throughout the supply chain and operating costs, maximising the recovery of reusable water within sites.

WASTE MANAGEMENT SERVICES

ENVIRONMENTAL PROCUREMENT
TRACEABILITY - DOCUMENT MANAGEMENT - PROCESS DIGITALISATION

Characterisation and management of deposits | Homologation | Logistics planning | Treatment and final disposal/recovery | Monitoring and control

Eni Rewind manages the entire waste cycle resulting from industrial activities, remediation and decommissioning of disused facilities, in line with current regulations and industry best practices. Control over the supply chain includes waste characterisation, selecting the best recovery and disposal options and adopting logistics planning systems that minimise costs and environmental impacts (through dedicated software). Activities are ensured through a selected and qualified network of over 90 plants, specialised by type of waste. At the same time, an in-house team of about 110 specialists oversees the traceability system and legal documentation. The company is committed to building new waste treatment and recovery plants, also through cooperation agreements with leading Italian companies in the sector, in order to optimise the supply chain in the medium and long-term as regards to reliability and quality of service, logistics and competitiveness compared to market alternatives.

The partnership with LabAnalysis

On 30th June 2023, Eni Rewind acquired 30% of the share capital of ▶ LabAnalysis Environmental Science, a market leader in Italy in the environmental testing sector, founded and led by the Maggi family with a team of over 500 specialists and 14 locations in Italy. The company is part of the LabAnalysis group, founded in 1976 by Prof. Luigino Maggi, also a leader in the field of analysis for the pharmaceutical industry. Through this strategic alliance, the two companies intend to strengthen their integrated range of solutions for the sustainable management of environmental resources, promoting innovation and safeguarding the environment and health. The partnership will harness both companies' innovative technologies, advanced methodologies and expertise to provide tailor-made solutions to new environmental challenges in terms of analyses of water, soil and air quality, waste, and gaseous, noise and electromagnetic emissions. The accuracy and timeliness with which the characteristics of environmental matrices and wastes are determined are fundamental for effectively targeting treatment, decontamination and environmental recovery solutions. With this in mind, the partnership consolidates a long-term collaborative relationship between Eni Rewind and LabAnalysis. It also lays the foundations for developing a range of integrated environmental services, even abroad. As a result of the partnership, Eni Rewind will entrust about 50% of Eni's environmental testing needs to its subsidiary LabAnalysis. At the same time, it will continue to use other qualified suppliers and its own laboratories in Ferrara, Priolo and Assemini to meet the remaining needs.

Certifications and attestations

Eni Rewind's commitment to safeguarding the environment, protecting workers' health and safety and providing a quality service to third-party customers is reflected in its rigorous compliance with the relevant legislation in force and in its voluntary participation to an integrated HSEQ management system that has led to the achievement of the certification in accordance with UNI ISO standards. Eni Rewind holds the SOA attestation in its core activities, a certification for participation in tenders for the execution of public works contracts.

Member of CISQ Federation RINA CERTIFIED MANAGEMENT SYSTEM ISO 14001	**UNI EN ISO 14001 of 2015 Environmental management systems - Requirements**	The ISO 14001 standard is an international instrument that outlines the parameters of an Environmental Management System, which demonstrates the adoption of a management system that is adequate to keep the impacts of an organisation's activities on the environment under control and strives for constant improvement in an effective and sustainable manner.
Member of CISQ Federation RINA CERTIFIED MANAGEMENT SYSTEM ISO 9001	**UNI EN ISO 9001 of 2015 Quality Management Systems - Principles and glossary**	The ISO 9001 standard is an international instrument for the certification of Quality Management System requirements, which guarantees an organisation's competence in executing and monitoring corporate processes, improving the effectiveness and efficiency of services to ensure customer satisfaction and creating value and wellbeing for all stakeholders, while improving the company's competitiveness.
Member of CISQ Federation RINA CERTIFIED MANAGEMENT SYSTEM ISO 45001	**UNI ISO 45001 of 2018 Occupational health and safety management systems - Requirements and guidance for use**	The ISO 45001 standard is an international instrument that outlines the requirements for the implementation of the Occupational Health and Safety Management System in order to enable an organisation to provide safe and healthy workplaces by preventing occupational accidents and health problems, as well as continuous and proactive improvement in terms of people's health and safety.
ATTESTAZIONE RILASCIATA DA SOA attesta AI SENSI DEL D.P.R. 207/2010	**SOA OG 12, OS 14 and OS 22 Attestations**	Mandatory certification for participation in public tenders to execute works, with an auction amount higher than € 150,000. Eni Rewind obtained certification on its core activities, in the general category OG 12 - Environmental remediation and protection works and plants, and in the specialist categories OS 14 - Waste disposal and recovery plants and OS 22 - drinking water treatment plants and purifiers.

Gela - decommissioning isola 9 ISAF - on-site remediation solution

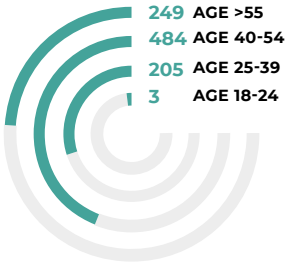
Each of us

36% women in engineering/R&D

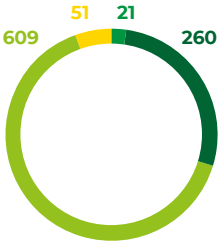
29% women in positions of responsibility

The keys to Eni Rewind's success are its people, their skills, and their energy; they hold a pivotal role within the company culture and are a unique asset in the company's ongoing transformation. The people of Eni Rewind share the company's values, like respect for the environment and the local communities where it operates, as well as its views on dialogue and debate as tools to reach shared goals. The company promotes the valorisation of its human capital through an equitable, inclusive and transparent approach, offering opportunities based on shared merit criteria. Eni Rewind's team consisted of 941 people as at 31st December 2023.

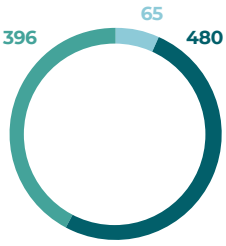
EMPLOYEES BY AGE GROUP IN 2023



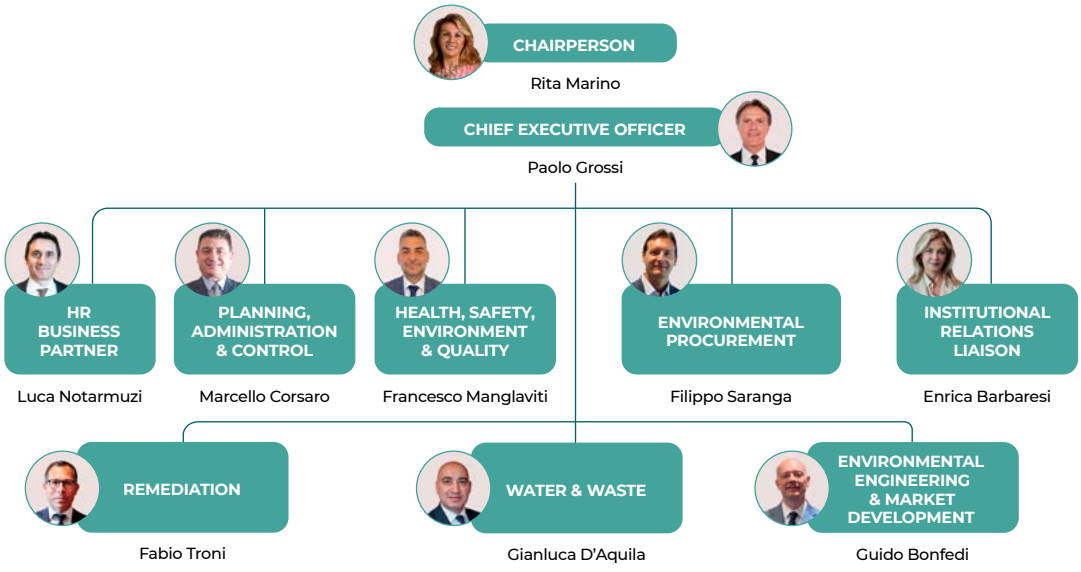
EMPLOYEES BY PROFESSIONAL CATEGORY



EMPLOYEES BY QUALIFICATION



ENI REWIND ORGANISATIONAL STRUCTURE



Safety and Environment

To ensure the protection and safeguarding of the health and safety of its employees and suppliers as well as the environment, Eni Rewind deploys measures aimed at minimising the risk factors associated with its various operating contexts, such as organisational models for managing HSE risks, training and skills development, process safety, and the application of new digital technologies to support safety.

THE CULTURE OF SAFETY AND ENVIRONMENT

At Eni Rewind, the HSE culture is central, shared, and involves management, employees and suppliers. Each person is an example and a leader in carrying out their activities safely while respecting the environment. To this end, the company promotes tools such as Lessons Learned, Safety and Environmental Golden Rules, and promotes initiatives to raise awareness on HSE topics and on the behaviour to adopt while at work.

ASSET INTEGRITY

The asset integrity system ensures that assets are managed effectively and efficiently to protect people, the environment and business continuity. The company has surveyed the assets on its sites, grouping them by HSE risk level, to implement those actions necessary to ensure the highest safety standards.

ENVIRONMENTAL PROTECTION

In line with Eni Rewind's business, environmental protection is promoted as a priority at all organisational levels and is monitored through an accurate analysis of regulatory evolution, which is promptly and rigorously shared, and implemented in the management of activities.

ACCIDENT RATES AND INTERVENTION ACTIONS

As part of preventing and mitigating health and safety risks, Eni Rewind pursues the goal of zero accidents. When incidental events occur, the episode is investigated and analysed in order to identify what caused it as well as the most effective corrective actions to prevent their repetition. In 2023, a frequency rate of 0.75 was recorded, slightly inferior to that registered in 2022. The TRIR rate is expected to be maintained in the four-year period 2024-2027.

PROCESS SAFETY

In line with the diverse nature of the hazards and risks associated with specific operational activities, process safety is promoted and supported by a widespread culture at all levels of the organisation, including by sharing best practices, known as Process Safety Fundamentals (PSF). Process incidents and near incidents are investigated, and outcomes are communicated to all employees by sharing Lessons Learned. Every year, the company conducts dedicated audits to monitor the proper management of process safety.

Innovation and digitalisation

Eni Rewind is committed to the process of digital transformation and technological innovation to optimise the efficiency and quality of its environmental interventions, minimise risks for the safety of people and ensure the integrity of assets. The levers of innovation and digitisation in Eni Rewind:

- research activities: to shorten the gap between the study and development of new solutions and their implementation in the field, in both remediation projects and waste management;
- in-house technology development in cooperation with Eni;
- partnerships with universities: Polytechnic University of Milan, Polytechnic University of Turin, Bicocca University of Milan, Sapienza University of Rome, Ca' Foscari University of Venice, University of Bologna and Tor Vergata University of Rome.

REMEDIATION TECHNOLOGIES BY SITE OF APPLICATION

Matrix	TECHNOLOGIES/SITES	Porto Torres	Crotone	Assemini	Mantova	Priolo	Brindisi	Gela	Manfredonia	Pieve Vergonte	Porto Marghera	Ravenna Ponticelle	Ponte Galeria	Sarroch	Cengio	Ferrara	Service stations
GROUNDWATER	Pump and treat	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
	Reactive barrier					■											
	Absorbent barrier																■
	Recirculation wells								■								■
	ISCO																■
	Surfactant Enhanced Remediation																■
	Dual Pump	■			■								■				■
GROUNDWATER + SOIL	Bioremediation	■	■	■			■	■				■		■		■	■
	Multi-Phase Extraction	■		■	■	■	■	■			■						■
	Air Sparging	■		■	■				■								■
SOIL	Inertisation	■	■														
	Soil Mixing		■														
	Soil Washing	■								■							
	Collection site	■								■							
	Thermal desorption	■															
	Biopile	■										■	■				
	Phytoremediation		■			■											
	Soil Vapour Extraction	■		■	■		■	■	■	■							■

For more information ▶ Vademecum

PASSIVE SAMPLING ON POLYETHYLENE (PE) FILM

At its sites, Eni Rewind continues with the testing of the passive sampling technology using low-density polyethylene (LDPE) sheets in collaboration with Eni, Tor Vergata University of Rome, Union Energy for Mobility (UNEM), the Italian Institute for Environmental Protection and Research (ISPRA) and the National Network for Environmental Protection (SNPA). Its application allows for the assessment of both the leaching of contaminants from soil to groundwater and their volatilisation from soil to surface. Due to the adsorption properties of LDPE, pollutants accumulate on the sampler film. This allows to determine the concentration and distribution more accurately, including on the vertical profile, of organic contaminants in sediments and soils and of volatile ones in soil gas.

The data provided by passive samplers can therefore be applied in the estimate of the actual mobility of contaminants, in addition to traditional characterisation techniques, so as to define the conceptual model of the site more accurately and identify better targeted environmental interventions. Therefore, it is an effective tool that is alternative and supplementary to traditional monitoring systems and with lower costs.

In 2023, as part of the ISPRA-UNEM collaboration, field trials were conducted with the Regional Environmental Protection Agencies (ARPA) of Sicily, Veneto and Emilia-Romagna. The aim was to validate the methodology and contribute to the preparation of an ISPRA booklet on the application of passive sampling for monitoring soil gas in contaminated sites, which was published in February 2024.

For more information ▶ ISPRA booklet 30/2024

SYSTEM ADVANTAGES

ENVIRONMENTAL PROTECTION
no effect on the balance of environmental matrices

AREA COVERING AND EASY INSTALLATION
a number of sampling devices can be installed quickly and easily thus covering large representative areas

SENSITIVITY
achieves results that are less sensitive to interference (e.g. humidity levels)

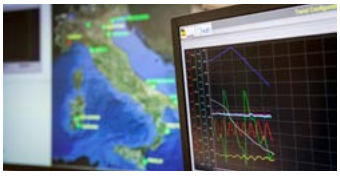
VERTICAL PROFILES
verifies concurrently contamination trend along the vertical at the same time

REPRESENTATIVITY/PRECISION
measures the fraction that is actually mobile/available in the matrix

COST EFFICIENCY
cheaper in comparison to other traditional methodologies

DIGITISATION AND AUTOMATION OF WATER TREATMENT PLANTS

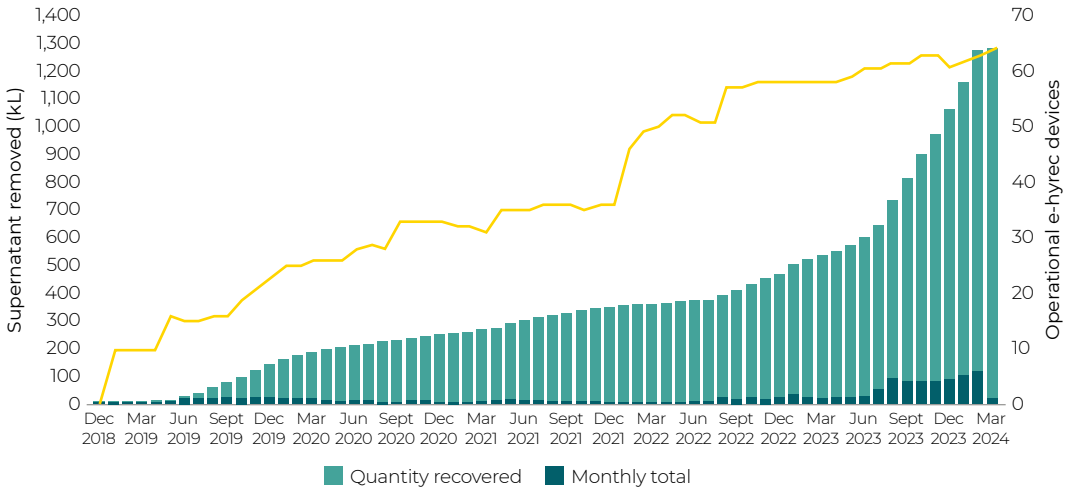
The digitisation and automation of water treatment plants and barriers continues with the aim of increasing competitiveness and business sustainability, work quality and process safety. The 24/7operational control room in San Donato Milanese remotely monitors operational sites and groundwater treatment plants.



E-HYREC® AND E-LOREC®

In the sites where we operate, the implementation of the automatic devices e-hyrec® and e-lorec® for the selective removal of hydrocarbons from contaminated groundwater continues. The e-hyrec® technology consists of a hydrophobic filter (patented by Eni) capable of separating and extracting from the aquifer only the contaminated part (LNAPL - Light Non-Aqueous Phase Liquid), reducing to virtually zero the quantities of water and waste sent for disposal while significantly decreasing the time needed to remove the supernatant from the water table. Over the course of the past years, more than 60 units were installed at national level, both at Eni and third-party customer sites, allowing for the recovery of over 1,000,000 litres[1] of oil and avoiding the disposal of over 4,200 tonnes of water as waste. The field trials at the Bapco refinery in Bahrain continue, as part of the Memorandum of Understanding (MoU) with the National Oil and Gas Authority (NOGA) of the Kingdom of Bahrain, aimed at identifying and promoting joint initiatives for the management, recovery and valorisation of water, soil and industrial waste in the country. The e-lorec® (eni lower-placed hydrocarbon recovery) technology, which is currently being tested, involves the removal of DNAPL (Dense Non-Aqueous Phase Liquid) subnatant from groundwater. During 2023, field validation tests were completed and the constructional engineering for its industrial deployment was launched.

LNAPL RECOVERED AT ENI SITES



1 Equivalent to over 800 tonnes of oil.

E-LIMINA® METHOD

The e-limina® methodology (acronym for eni linking isotopic and microbial investigations aid natural attenuation) is a product of Eni research that combines microbiological, molecular and isotopic monitoring systems to establish the state of biodegradation of contaminants and therefore assess the applicability of bioremediation technologies on sites. The methodology applies to any matrix (aquifers or soils) both during characterisation and monitoring. In the first instance, it determines the natural attenuation effects already present; in the second it verifies, with high accuracy and in real-time, the state of biodegradation of contaminants and remediation progress. Thanks to this high-precision system, it is possible to identify the best solutions for the abatement of contamination directly in the environmental matrix, thus reducing the extraction of soil and water resources. To date, the e-limina® method has been applied at the Assemini, Avenza, Cengio, Ferrara and Priolo Gargallo sites in aquifer remediation projects involving chlorinated organic contaminants. The application of the methodology on the "hydrocarbon" group of contaminants and its related degradation patterns was developed and completed at laboratory scale in the two-year period 2022-2023. The methodology is ready to be applied in the field at pilot level; the identification of a compatible case study is underway both in terms of contamination and environmental procedure.

Ferrara - in situ remediation interventions

ENVIRONMENTAL AND ASSET DATA MANAGEMENT

At Eni Rewind, environmental and asset data are managed using the ELVIS system, a proprietary webGIS (Geographic Information System) platform, designed for the standardised collection and storage of monitoring data from environmental surveys conducted at Eni Rewind sites. The system allows the consultation, export and analysis of the information, as well as sharing it with control bodies. At the beginning of 2024, a hydrochemical data alert system was implemented in order to investigate any anomalous trends. This is based on statistical methodologies and represents a valid support for specialists during data evaluation and analysis.

Remediation

750,000
hours/year of environmental engineering

35,000
hours/year of research and development

€400 million
for remediation interventions in 2023

Remediation activities create regeneration and development opportunities for territories. For this reason, it is essential to plan the future reuse of the areas at the very early stages of the remediation process, in agreement with local institutions and stakeholders. Today, thanks to the expertise gained while managing over 100 sites with very different industrial backgrounds, Eni Rewind oversees every phase of the reclamation process, from characterisation to final certification, offering innovative and eco-compatible solutions to maximise the effectiveness and efficiency of its interventions. The operational approach of the company is geared towards applying on-site and in-situ technologies, including Eni and Eni Rewind proprietary ones, originated within collaborations with universities and research bodies. To design, execute and manage different types of interventions, Eni Rewind leverages on its own teams of engineers, project managers and field specialists with a multidisciplinary and integrated approach for remediation projects, which includes HSE and procurement services specific to the environmental sector and an in-house stakeholder engagement and permitting structure.

Assemini

At the Assemini site, Eni Rewind carries out remediation of the different areas by implementing various in-situ techniques, which are identified according to the type and distribution of contaminants:

- **Enhanced Natural Attenuation (ENA)** - the technology, selected for a total of approximately 55 ha distributed among the Plants and External Areas as well as the Coastal Depot, involves the anaerobic biodegradation of chlorinated hydrocarbons in the aquifer through the injection of easily biodegradable substrates. In 2023, the intervention was executed on the first lots and the executive planning for the following ones was finalised.
- **Air Sparging (AS) and Soil Vapor Extraction (SVE)** - the AS intervention, launched in 2024, includes the injection of air underneath the groundwater using 161 dedicated wells. This generates the stripping of volatile compounds and their transfer into the gaseous phase. The technology is combined with SVE in order to recover the AS-generated vapours, extracted through a separate set of 125 windowed wells positioned in the unsaturated soil. Subsequently, the vapours are treated on active carbon filters. The AS/SVE plants' arrangement in modules will enable their reuse in other sites at the end of the intervention.
- **Multi Phase Extraction (MPE)** - the technology, applied on approximately 30 ha in the Is Campus Area, consists in the simultaneous extraction of pollutants in liquid (submersible pump) and vapour (vacuum pump) phase, removing contamination from groundwater, as well as from the unsaturated and capillary zones. Plant construction, which began in 2023, will be completed in 2024. Here too, the plant can be moved and used in other sites at the end of the intervention.

Ravenna

The Ponticelle project in Ravenna is a concrete example of productive redevelopment of a disused industrial site. On the area, which has undergone environmental interventions for permanent safety measures certified in 2021, following the PAUR (Regional Single Authorising Provision) obtained in June 2023 construction has begun of the HEA (joint venture between Eni Rewind and Herambiente) multifunctional platform for the pre-treatment of industrial waste, and the Eni Rewind platform for the biorecovery of soils from remediation. In addition, Plenitude's photovoltaic was completed in February 2024.

Ravenna Ponticelle - rendering of the redevelopment project

The initiative shows that the synergy with local institutions and businesses can turn remediation into an added value for the territory, both in terms of growth and development. The project also includes urbanisation, renaturalisation and valorisation works on an area of public value in the Classe pine forest ("Ca' Giansanti").

THE PLANTS OF THE PONTICELLE PROJECT

Photovoltaic plant

With an installed capacity of 6 MW, Plenitude's plant covers an area of 11 hectares and is made up of over 10,000 last-generation photovoltaic panels in monocrystalline silicon. The panels are mounted on special structures equipped with a solar tracking system, which are fixed on ballasts placed over the waterproof ▶ **capping** of the permanent safety measures interventions. Its construction was completed in February 2024. The energy storage system will use a new generation of batteries, the so-called flow batteries, which will allow Eni to experiment with innovative solutions. Once fully operational, the photovoltaic plant will produce the energy equivalent to the needs of over 3,000 families.

Soil Biorecovery Platform

Eni Rewind's plant, with a treatment capacity of 80,000 tonnes per year, will be dedicated to the aerobic biodegradation of hydrocarbon-contaminated soils, primarily originating from the remediation of service stations, using indigenous microorganisms. The aim is to recover the soils post-treatment for reuse in service stations undergoing reclamation activities, reducing landfill disposal and the use of virgin resources. The platform, which will cover 3 hectares, also includes a bio-laboratory capable of conducting preventive analytical checks on the conformity of the waste entering the plant and periodic monitoring surveys of bioremediation processes.

Multifunctional platform for the management of industrial waste

The plant, which will be developed by HEA, aims to actively contribute to the structural gap in Italy and to the special waste management in Emilia Romagna, minimising disposal while favouring energy and material recovery from the collected industrial waste. The plant, which will replace the current HASI (Herambiente Servizi Industriali) platform, will manage up to 60,000 tonnes per year of special waste from environmental and production activities, in particular local ones, in line with the European directives of the Circular Economy Package.

Manfredonia


Manfredonia - Ground circulation wells plant

At the Manfredonia site, an aquifer remediation system has been in operation since 2006, which, in accordance with the approved project, foresees the extraction and treatment of groundwater and its subsequent reintroduction in the aquifer. The solution was adopted to manage the karst nature of the subsoil and salt intrusion at the site, as well as to avoid aquifer depletion and reduce waste production. Starting from 2020, Eni Rewind has been engaged in a series of interventions to optimise and accelerate the remediation process. Thanks to the installation of additional wells and piezometers, alongside the improvement of the treatment plant, to date the reinjection into the aquifer is carried out exclusively with the water treated on site, avoiding the use of other sources. Furthermore, the company, in collaboration with the Sapienza University of Rome, has started the application of Groundwater Circulation Wells in the area "Isola 5". Recirculating wells are a groundwater remediation technology consisting of a closed circuit in which the extraction, treatment and reintroduction of water into the subsoil take place at a concentration lower than that of extraction and at a different depth in the same well. Extraction and reintroduction create a circulation cell around the well that acts both vertically and horizontally, promoting contaminants mobilisation even in the fine fractions. The effectiveness of the technology has been confirmed by the trend of progressive decrease in groundwater concentrations over the last four years. Given the results achieved, Eni Rewind, in collaboration with the Sapienza University of Rome and IEG, is evaluating the use of the technology at other sites, in agreement with the authorities.

Crotone

At the Crotone site, between 2019 and 2020, a remediation project divided into two phases was approved by the authorities: the Operative Remediation Project Phase 1 and Phase 2. Phase 1, completed by Eni Rewind in September 2021, consisted in the construction of breakwaters to protect the areas undergoing future excavation activities on the site. The Operative Remediation Project Phase 2, as per the March 2020 Decree, provides for the removal of two former seafront landfills and the completion of remediation in the industrial site's internal areas via two lines of intervention: the first concerns the excavation and disposal activities of the former seafront landfills and part of the internal areas soils; the second aims at reducing groundwater contamination by implementing ▶ Enhanced Natural Attenuation (ENA) and Soil Mixing in situ technologies, subject to approval of a specific Operative Remediation Project Variant. Regarding excavation activities, to date the company has started pre-construction monitoring, created the preliminary deposit for Non TENORM[2] materials and is proceeding with the construction of the preliminary deposit for TENORM materials with its associated treatment plant. The removal of historic landfills with excavation and disposal in authorised landfills could commence as early as the end of 2024. However, considering the lack of final destinations (see ISPRA Special Waste Report 2023), it's necessary to first overcome the constraint placed by the PAUR of 2019 which prohibits the use of the Crotone landfill, the only one in Italy capable of managing, given the type of waste and residual plant capacity, approximately half of the waste resulting from the site's remediation. To this end, at the request of Eni Rewind, the Ministry of the Environment called a Services Conference in May 2024, following which the company presented a project extract to phase 2 in order to start excavations on the former Pertusola landfill and the internal areas. With regards to the application of in situ technologies, following the positive conclusion of the pilot trials (2020-2023), in April 2024 Eni Rewind sent the feasibility study to the Ministry of the Environment. The document proposes a phased operational approach, prioritising the implementation of ENA and capping interventions. In particular, the ENA technology is aimed at removing metals (Cadmium and Zinc) found in solution in groundwater through a process of acquifer sulphates reduction triggered by specialised bacterial biomass, while capping would allow to block potential groundwater leaching of the contaminated substances that are present in saturable soils. Subsequently, soil mixing, which consists of mixing the soil on the spot, may be applied.

2 Technological Enhanced Naturally Occurring Radioactive Materials. .

DECOMMISSIONING

In many cases, the environmental requalification process of an area requires decommissioning intervention on production facilities, already in disuse or at end-of-life, with the remediation of circuits and plant equipment, the demolition of structures and the management of the resulting waste. These interventions are of great importance, both due to their complexity in terms of management and engineering, and because they are preparatory to area recovery and regeneration projects. In this regard Eni Rewind possesses unique know-how, technical skills and knowledge gained in the field at various sites, as well as dedicated design and execution teams. The company, committed to reducing its environmental footprint, ensures the recovery and reuse of materials from demolition activities: in the two-year period 2022/2023, approximately 17,500 tonnes of scrap metal, mainly iron and steel, were sent for recovery in order to find a second life in the civil and industrial sectors.

Decommissioning of disused plants at Gela refinery

At the Gela site, Eni Rewind, within the Memorandum of Understanding signed in 2019 by Eni and the Ministry of Environment, is carrying out the decommissioning project for the disused plants formerly part of the traditional refining process. After the dismantling of the Snox chimney, the G300 boiler, the Coking 1 and 2 drill structures, and the D-D1 torch, in 2023 the second phase of interventions began. In 2024 the company will complete the demolition of the former thermoelectric plant G100 and G200 boilers and start the decomissioning of the Four-stack chimney, the Snox, sulphuric acid, air separation plants, Coking 1 and Vacuum, as well as the Pier and Small Pier. For many interventions, top-down disassembly was necessary to avoid interference with other plant operations and to ensure the future reuse of materials. A complex decommissioning plan which has already changed the skyline of the Gela industrial area.

REMEDIATION AND REDEVELOPMENT OF AREAS

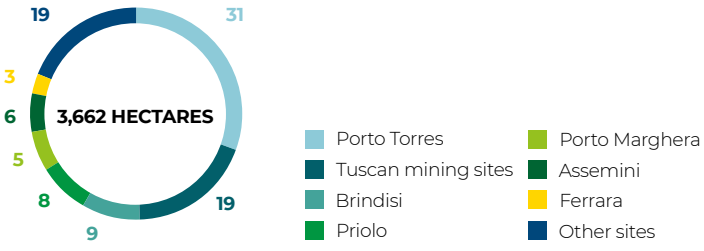
Soil is a limited resource as it is not reproducible. Disused industrial sites are as critical environmentally as they are economically, if not reused. For this reason, Eni Rewind is committed to give a new lease of life to the sites where it operates through remediation projects designed with productive redevelopment in mind. The company's own areas are located in highly anthropised and serviced industrial districts that, once remediated, lend themselves to new development initiatives, avoiding the consumption of new land. An example of this are plants for the production of energy from renewable sources or those for the treatment and recycling of waste.


Porto Torres Site of National Priority

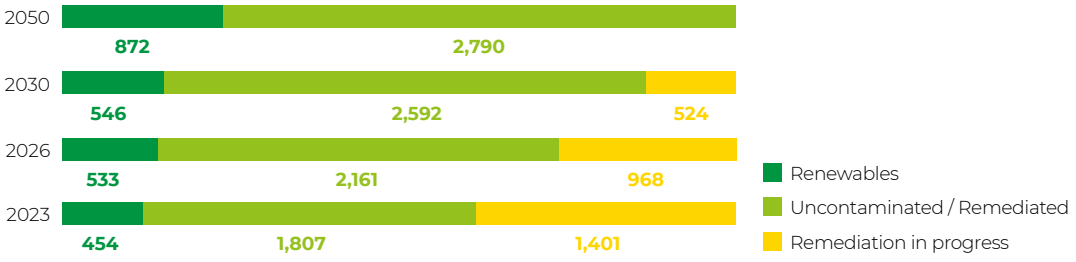
62% proprietary areas available for new projects in 2023

86% proprietary areas available for new development initiatives by 2030

TOTAL ENI REWIND AREAS (%)



STATE OF LAND OWNED BY ENI REWIND (hectares)



ENI REWIND'S CONTRIBUTION TO RENEWABLES

The development of renewable energy is central to Eni's strategy of progressive decarbonisation. Leveraging on the consolidated partnership with Plenitude, Eni Rewind's proprietary areas that have been decommissioned and are no longer productive are used to house renewable electricity production plants. The energy produced is used to meet the needs of Eni's industrial assets, and the remaining part is fed into the grid. Of particular significance in this path is the construction of the photovoltaic plants already installed at the Gela, Assemini, Porto Torres, Ravenna and Porto Marghera Eni Rewind's sites, as well as a further one authorised in Assemini, and those pending authorisation in Porto Torres, Ferrandina, Brindisi and Manfredonia. To further develop this collaboration, around 900 hectares of Eni Rewind property have been identified as suitable, once remediation interventions have been completed, for the installation of photovoltaic and wind power plants.

67 MW total installed photovoltaic capacity to date on **~130** ha

~10 MW total authorised capacity in 2023 on **15** ha

~115 MW total capacity pending authorisation on **285** ha

Ravenna Ponticelle - Plenitude's 6 MW photovoltaic plant

Water Management

43
water treatment plants

1,400
extraction wells

>5,200
monitoring wells

~35 million m³
treated water, of which
26 million returned
to the environment

~9 million m³
recovered water
for industrial and
environmental purposes

Eni Rewind carries out aquifer remediation across the country. The company implements an integrated system consisting of hydraulic barriers, which prevent contaminants from migrating offsite, and groundwater treatment plants (GTP); in addition, it uses state-of-the-art techniques to remove the source of contamination.

At each site, Eni Rewind adopts dedicated solutions, starting with the study of aquifer geology through three-dimensional modelling by a team of in-house specialists. This approach is based on using numerical models to interpret, represent and predict groundwater flow to identify the most appropriate remediation techniques and optimise the flow rates of the barriers. This results in greater effectiveness in removing contaminants and protecting the water table, even from natural phenomena such as salt intrusion, typical of coastal areas.

The in-house tools for the automation, remotisation and dynamic control of the treatment plants ensure the reliability of the processes of the entire supply chain, while simultaneously maximising the recovery of reusable water within the sites. In 2023, the company treated over 35 million cubic metres of water through the 43 plants currently managed, recovering approximately 9 million for industrial purposes within sites and for environmental uses locally, like reinjection into the aquifer or for the protection of surface water bodies.

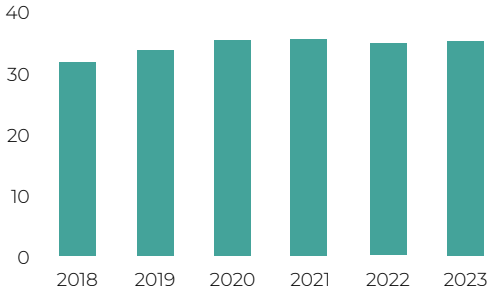
Eni Rewind also manages treatment plants for industrial (in Manfredonia and Gela[1]) and municipal (in Gela and Cengio) wastewater.

At the Priolo, Gela, Porto Torres, Assemini and Brindisi sites, the search for solutions for sustainable and efficient management of water resources has led to the installation and activation in the groundwater treatment plants of dedicated sections for the production of demineralised water for industrial purposes on site. In other cases, for example in Manfredonia, the treated water is reinjected into the aquifer to restore its natural conditions and simultaneously avoid the risk of salt wedge intrusion.

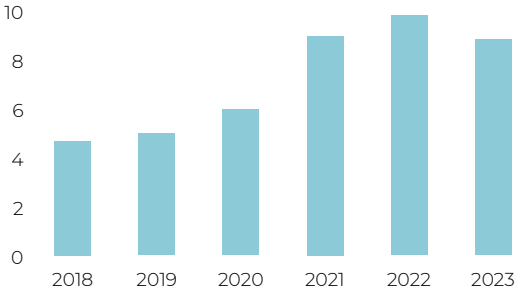
1 Eni Rewind also managed industrial wastewater at the Assemini site, up until the transfer of plant to the company Società Chimica Assemini in December 2023.

Porto Torres - groundwater treatment plants

WATER TREATED (Mm³/y)

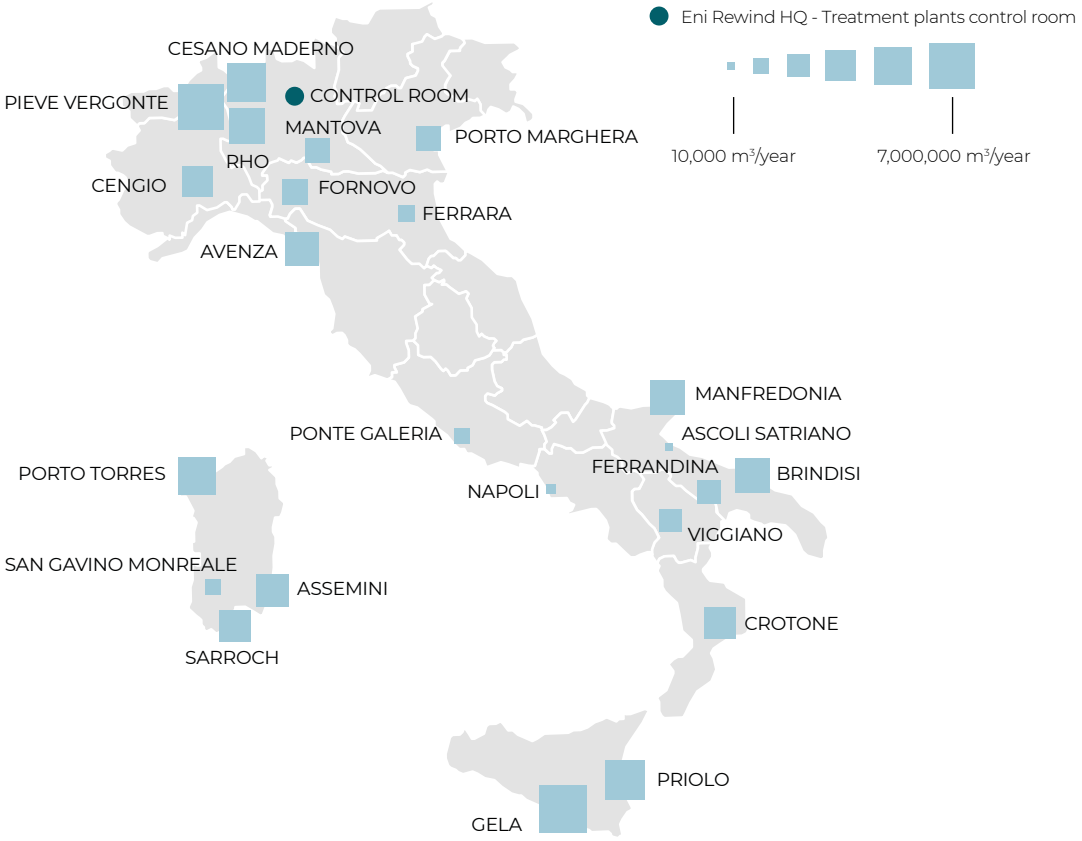


WATER RECOVERED (Mm³/y)



The volumes recovered in 2023 decreased compared to 2022 due to lower volumes extracted in some sites determined by local hydrogeological conditions as well as lower withdrawal of water for industrial uses.

WATER TREATMENT SYSTEMS (2023 volumes)



ASSET INTEGRITY AND PROCESS OPTIMISATION

All groundwater treatment plants are automated and digitalised to effectively oversee process reliability and safety, work quality and business sustainability. The company remotely monitors assets at operating sites through a 24-hour control room in San Donato Milanese. Eni Rewind also promotes research in new technical solutions and continuous plant renewal to optimise water treatment processes and reduce resource consumption. A case in point is the Priolo site, where the Dynamic Control System, borrowed from refining experience, is implemented. The system allows real-time intervention in the control processes of the groundwater treatment plant and therefore minimises the variation of operating parameters such as pressure, flow rate and pH. By adopting the system, the plant can operate under ideal conditions, limiting the environmental footprint in terms of reduced energy consumption and reagents as well as waste produced. At the same time, there is an increase in the osmotised water made available for industrial use within the site.

Reverse osmosis plant

Pieve Vergonte – groundwater treatment plant among the largest in Europe (1,200 cm/h)

MUNICIPAL SLUDGE VALORISATION

At Porto Marghera Eni Rewind has proposed the realisation of a plant for the drying and subsequent mono-combustion of sludge from municipal wastewater treatment, to be built in a remediated area owned by the company in the petrochemical hub. The initiative responds to the necessity of urban sludge disposal in the Veneto region, in line with the goals of the Regional Waste Management Plan.

The plant foresees the use of a mono-waste-to-energy technology already consolidated on an industrial scale in various countries such as Germany, France and Switzerland. In particular, the process consists in the drying of the sludge (made up of approximately 80% water) and its subsequent combustion in a fluid bed furnace. The organic component of the sludge will enable to produce the energy necessary for the plant's operation, making the process thermally self-sufficient. An alternative solution to spreading sludge on agricultural land and to landfill disposal, which will both face increasingly stricter regulatory restrictions at European and national level.

In November 2022, Eni Rewind submitted its application for the plant's Regional Single Authorising Provision (PAUR), which is still undergoing preliminary investigation. The application was integrated in December 2023 following the over 300 observations and requests presented by institutions and associations, with the inclusion of the Health Impact Assessment prepared by Prof. Boffetta, an internationally renowned epidemiologist and researcher in the oncology field. The PAUR process should be completed in 2024.

Municipal sludge plant (rendering)

BLUE WATER TECHNOLOGY: SUSTAINABLE MANAGEMENT OF PRODUCTION WATERS

Eni Rewind's experience in water management contributed to the development of the Blue Water technology, which enables the treatment and recovery of production waters for their reuse in industrial processes. The treatment system is based on two cycles: the first eliminates traces of hydrocarbons while the second, consisting in a process similar to that of sea water desalination, allows to eliminate dissolved salts. The recovered resource consists of industrial as well as demineralised water, both of which can be fully reused within production systems.

In the proximity of Eni's Val d'Agri Oil Centre (COVA) in Basilicata, Eni Rewind has designed the first industrial-scale plant which will treat part of the production water currently sent for disposal via tankers, reusing it to meet the site's water requirements. Consequently, the plant will allow to effectively optimise water supplies and, by reducing production water transportation, cut the carbon footprint (GHG emissions) to approximately -5 thousand tonnes/CO_2/y.

The project obtained the Regional Single Authorising Provision (PAUR) in April 2024 while the procedure to receive the municipal Building Permit is underway.

400,000
m^3/y of water treated and recovered, fully reusable

Viggiano Blue Water plant (rendering)

Waste Management

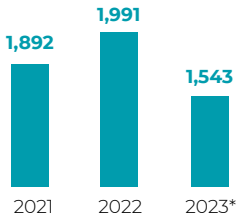
Eni Rewind, as Eni's global contractor, manages the whole waste cycle resulting from the remediation activities and decommissioning of disused structures, or from the Group's industrial activities. The daily control of the supply chain includes waste characterisation, the selection of the industry best recovery and disposal options, as well as the adoption of logistic programming systems – through dedicated softwares – that ensure optimisation in terms of costs and environmental impact. The running of operations is guaranteed through a selected and qualified network of over 90 plants, specialised by waste type, and an internal team of over 110 skilled professionals that oversee the traceability system and regulatory compliance. In addition, the company ensures the environmental sustainability of remediation interventions by using established in situ/on-site technologies, such as ▶ biopiles and ▶ soil washing, maximising soil recovery.
In 2023 Eni Rewind managed an overall of around 1.5 million tonnes of special waste, of which 30% resulting from remediation activities and 70% from industrial processes. Of the total volumes indicated, the part managed on behalf of Eni customers is approximately 80%. The main types handled were liquid waste produced as part of extractive activities (approximately 50%), and excavated soils and rocks produced as part of remediation and demolitions (approximately 30%). The recovery index, which is the ratio between recovered and recoverable waste, stood at around 75%, in line with the percentages recorded in previous years.

~1,5 million tonnes of waste managed

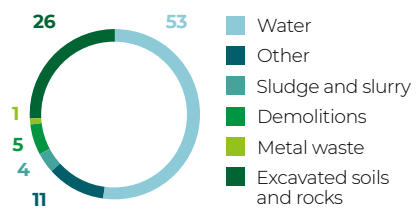
75% of recovered vs. recoverable waste

18% of hazardous waste vs. total waste managed

WASTE MANAGED (Kton)



TYPE OF WASTE MANAGED IN 2023 (%)



* The reduction compared to 2022 is mainly due to the lower volumes of upstream waste managed and the decrease in the volumes of excavated soils and rocks produced by remediation activities.

RECOVERED WASTE

RECOVERED WASTE			MACRO-TYPE OF RECOVERED WASTE			
2021	2022	2023	Demolition waste	Metal waste	Excavated soils and rocks	Sludge
73%	74%	75%	86%	100%	70%	100%

MAIN NEW PLANTS

Eni Rewind is committed to realising new waste treatment and recovery plants in proprietary areas which have already undergone remediation, also by leveraging on cooperation agreements with leading Italian companies in the sector. In a market characterised by infrastructural supply shortages, the construction of new facilities will optimise waste management in terms of service continuity and service, logistical costs, as well as environmental and economic impacts.

PORTO TORRES

Platform for the treatment of around 800,000 m^3 of soil using ▶ bioremediation, ▶ soil washing, ▶ thermal desorption and ▶ inertisation. Launched in 2021 as a zero km remediation project of the former Minciaredda landfill, the platform is equipped with cutting-edge technologies which, subject to authorisation, can also be valorised at the end of the remediation as a solution for other regional waste management requirements.

PORTO MARGHERA

Treatment plant for municipal sludge deriving from civil wastewater treatment. The plant will enable the processing of up to 190,000 tonnes per year of urban sludge and will be located in a remediated area owned by Eni Rewind in Porto Marghera.
Start-up expected in 2027.

RAVENNA

In a reclaimed area owned by Eni Rewind, the construction of two plants is underway: a bioremediation platform for hydrocarbon contaminated soil (capacity: 80,000 ton/y) and an industrial waste pre-treatment plant (capacity: 60,000 ton/y) in partnership with Herambiente.
Start-up expected in 2025.

VIGGIANO

Viggiano Blue Water is a plant that deploys Eni Rewind technology for the treatment and recovery of water associated with the production of hydrocarbons (400,000 m^3/y). This solution enables the reuse of the resource as demineralised water in the industrial cycles of the Viggiano production site, reducing freshwater withdrawals.
Start-up expected in 2026.

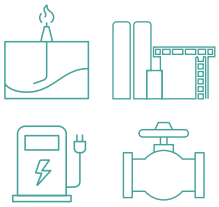
Waste management Soil management Water management

Eni Rewind in the Eni Value Chain

BUSINESS AREAS

REMEDIATION

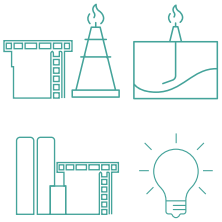
Remediation of contaminated areas to enable new opportunities for sustainable development



- Development and application of remediation technologies
- Management of decommissioning and soil and aquifer remediation activities:
  - at decommissioned and operational industrial sites
  - at sales outlets (service stations)
  - at contaminated areas (e.g. due to pipeline break-ins)
- Planning of remediation interventions for repurposing and future reuse of areas

WATER AND WASTE

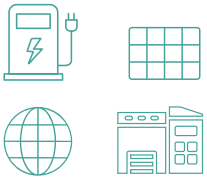
Water and waste treatment to maximise recovery and reuse



- Chemical/physical/biological treatment of groundwater, surface and production water for industrial or irrigation purposes, contributing to the reduction of water withdrawals in nature
- Management of the industrial and remediation waste cycle, from production to final disposal, maximising recovery and minimising waste
- Technology and skills development in partnership with main players

DEVELOPMENT

New business development to support the energy transition



- Realisation of new waste treatment and recovery plants in synergy with the industrial reconversion of Eni sites
- Use of remediated areas for the development, by Eni New Energy, of plants to produce energy from renewable sources
- Development of third party (non-Eni) interventions, leveraging on the skills gained in the field of remediation and waste management

Methodological Note

The Eni Rewind for 2023 Sustainability Report and the data reported therein are part of Eni's sustainability reporting, which includes the Consolidated Non-Financial Statement (DNF 2023) and the Eni for 2023 Sustainability Report – A Just Transition, subject to limited review by the appointed independent company. Unless otherwise specified, performance indicator data refer to the financial year ending 31st December 2023. Some data from the previous two/four years are also given for comparison purposes. The activities and projects included in the document are reported, where relevant, up to the end of the first half of the year of publication to provide the reader with the most up-to-date information possible.

The reporting system is completed by the information provided on the Eni and Eni Rewind websites, to which reference should be made for more in-depth information on the topics covered in this report.
Please consult the ▶ **online glossary** for a guide explaining simply and succinctly the terminology, concepts and acronyms in the Eni Rewind for 2023 Report.

Brindisi Site – phytoremediation intervention

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