RESPONSIBILITY IS OUR ENERGY

2019 SUSTAINABILITY REPORT

Terna

2019 SUSTAINABILITY REPORT
CONSOLIDATED NON-FINANCIAL STATEMENT
prepared in compliance with Legislative Decree 254/2016 as amended

OUR MISSION

Energy is our responsibility.
Responsibility is our energy.

To play a leading role in the coming sustainable energy transition, by leveraging our distinctive innovation capabilities, competencies and technologies for the benefit of all stakeholders.

We are a major operator of grids used to transport energy.

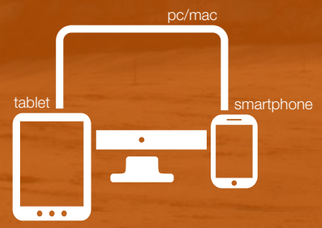
We manage the high-voltage transmission of electricity in Italy, ensuring **security, quality and cost-effectiveness over time.**

We are working hard on **development of the electricity grid**, the achievement of ongoing improvements in operational efficiency and integration with the European grid.

We guarantee **equal access** to all grid users.

We are developing **Non-regulated Activities** and new business opportunities, building on the experience and technical expertise gained in managing complex systems and on our technological excellence.

An interactive version of this Annual Report, including additional multimedia content, is available for various devices on our website at www.terna.it and is compatible with both Apple and Android systems.



Key

access the document

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multimedia content

Table of contents

Statement to stakeholders from the Chairwoman and the Chief Executive Officer

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The **energy transition** represents a major opportunity. Nothing less than an industrial transformation requiring a collective commitment from businesses, government and other stakeholders, called on to work together to devise strategies and implement projects designed to achieve the goals of decarbonisation, energy efficiency and security, and to deliver research, innovation and competitiveness.

In this new scenario, Terna has a crucial role to play as an enabler of the current transformation, requiring us to manage the **growing complexity of the electricity system**, whilst also establishing Italy’s importance as a European energy hub serving the Mediterranean area. As a key player in the “green revolution”, Terna is continuing to invest in order to guarantee an increasingly modern, efficient, secure, flexible and sustainable electricity grid.

The **Strategic Plan 2020-2024** envisages accelerated investment in Italy’s national grid, with the aim of supporting the energy transition and the country’s decarbonisation strategy. This will have a major impact on development, partly through an increase in the induced impact. In this regard, the €7.3 billion we intend to invest in Italy’s electricity infrastructure marks the biggest investment programme ever undertaken.

Innovation and digitalisation are of strategic importance in this process. In 2019, Terna opened three new Innovation Hubs in Turin, Naples and Milan to exploit synergies between the Group’s own skills base and outstanding local expertise, developing ideas and innovative projects.

Terna pays great attention to the relationships between our business activities and the social and environmental context. In the last three years, we have organised over a thousand meetings with local communities, making **participatory design** our chosen approach for reaching shared, sustainable solutions for grid development.

The alignment of Terna’s mission with major international sustainable development goals is strengthened by the integration of **sustainability** into everything we do and the decisions we take: in addition to **innovation**, we are committed to people, above all to their safety at work both within and outside the Company, to **ongoing dialogue with local communities** and to reducing our environmental footprint.

We aim to put Italy at the centre, strengthening our country’s **leading role** in Europe’s energy system, take advantage of new enablers and new technologies and making a major contribution to employment and generational turnover among our personnel.

The **results achieved in 2019** show how Terna has the ability to deliver on our pre-set objectives and remain faithful to the commitments made when signing up to the UN Global Compact, whilst confirming the validity of management’s approach to growing the business. The Group’s strong operating and financial performance will, moreover, enable Terna to continue to work towards providing a system that is increasingly secure, efficient and sustainable for the benefit of everyone.

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Catia Bastioli
Chairwoman

Luigi Ferraris
Chief Executive Officer

1

Summary of the 2019 Report

A summary of sustainability performances, in line with Terna's leading role in the current energy transition.

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About Terna

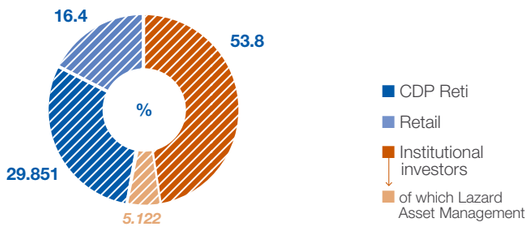
Terna performs the role of TSO (Transmission System Operator) under a government concession: main activities are electricity **transmission** and **dispatching** in Italy. Our headquarters are in Rome.

We are responsible for the planning, construction and maintenance of the National Transmission Grid ("NTG"), as well as management of the electricity that flows through it. Our activities are carried out under a monopoly regime, in accordance with the regulations defined by the Regulatory Authority for Energy, Networks and the Environment ("ARERA") and in implementation of the guidelines established by the Ministry for Economic Development (the "MED").

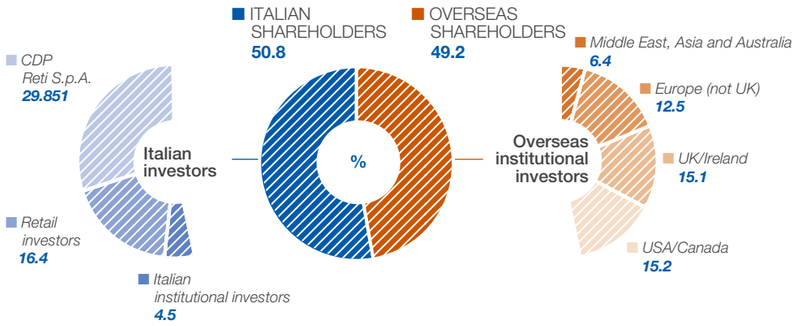
Listed on Borsa Italiana's screen-based trading system (*Mercato Telematico Azionario*) since 2004, at approximately €11.9 billion[1], Terna ranks among Italy's leading companies by market capitalisation.

The controlling shareholder, with a 29.851% interest, is CDP Reti, a subsidiary of CDP-Cassa Depositi e Prestiti.

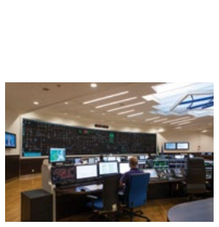
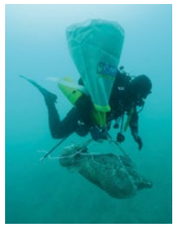
SHAREHOLDERS BY CATEGORY



SHAREHOLDERS BY GEOGRAPHICAL AREA AND CATEGORY



[1] Market capitalisation at the close of trading on 30 December 2019. The market capitalisation, calculated on the basis of the average share price for the year, is €11.3 billion.


Terna shareholders include a large number of institutional investors, including a significant number of SRIs (Socially Responsible Investors), who have invested in Terna's shares in accordance with an approach that takes into account ESG (Environmental, Social, Governance) aspects.

SRIs
(SOCIALLY RESPONSIBLE INVESTORS)
147 in 2019
109 in 2018 and 103 in 2017

PROPORTION OF FREE FLOAT
11.8% in 2019
9.5% in 2018, 8.3% in 2017

Regulated Activities, which coincide with Terna's mission to ensure the quality and cost-effectiveness of electricity transmission service over time, represent the Group's core business, accounting for 88% of revenue. Alongside these activities, the Group also operates in a number of non-regulated sectors, leveraging its distinctive technical expertise and innovation. Overseas, Terna is engaged in the development of transmission infrastructure in countries with stable political and regulatory frameworks, including in collaboration with energy operators that have an established international presence.

2019 TOTAL REVENUE: 2,295.1 €M

New business opportunities

Non-regulated Activities

9.2% of revenue

Development and maintenance of the high-voltage grid

Regulated Activities

Balance between energy supply and demand and investment for development.

89.6% of revenue

International Activities

Leveraging our core competencies overseas

1.2% of revenue

Energy transition and Terna's role

The drive towards decarbonisation of the energy sector is reflected, at international level, in the United Nations SDGs and in European policies.

In Italy, the Integrated National Plan for Energy and Climate (PNIEC) envisages the complete phase-out of coal by 2025, followed, in 2030, by the goal of meeting 55.4% of gross electricity consumption from renewable energy sources (RES).

The electricity system is thus undergoing a period of radical transformation, as is Terna's approach to managing the grid.

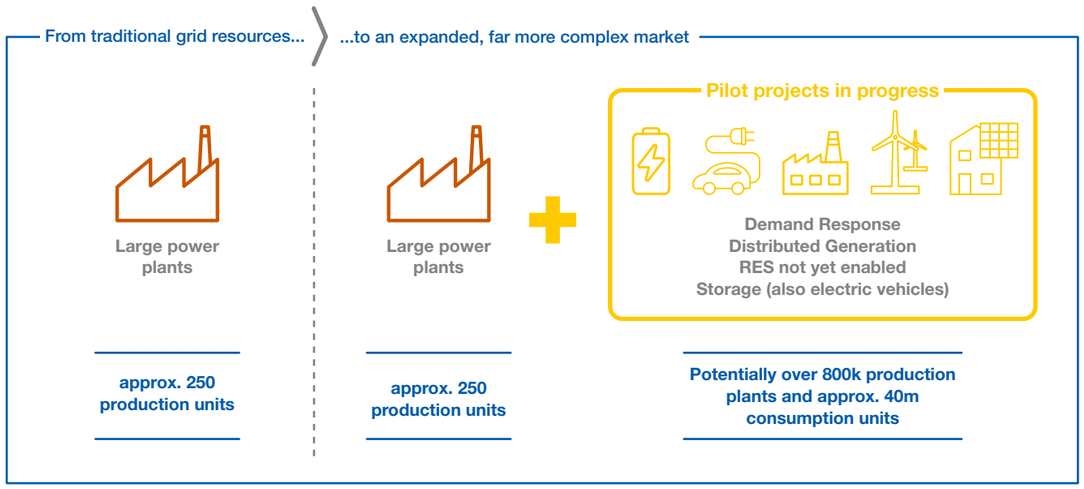
The current transition to a decarbonised energy model means that Terna has a major role to play in this process, in which it is called upon to maintain high standards of service quality and continuity in a rapidly changing, increasingly complex electricity system, marked by the growing importance of non-programmable renewable sources (solar and wind).

This challenge is thus in keeping with a number of the United Nations Sustainable Development Goals (SDGs), which have taken on the role of benchmarks for Terna. Above all, this refers to Goals 7, 9 and 13.

TERNA'S BENCHMARK SDGs

SDGs	7 AFFORDABLE AND CLEAN ENERGY	9 INDUSTRY, INNOVATION AND INFRASTRUCTURE	13 CLIMATE ACTION
Target	Ensure access to affordable, reliable, sustainable and modern energy for all.	Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation.	Take urgent action to combat climate change and its impacts.

DEVELOPMENT OF THE ELECTRICITY SYSTEM AND THE OPENING UP OF THE MARKET FOR SERVICES TO NEW RESOURCES



Source: Terna

A full description of changes in the electricity system, and the challenges that this poses for Terna, is provided in "Context and development of the electricity system"[2], presented in October 2019 during the "States General of the Energy Transition".

Terna again guaranteed a high level of quality of service in 2019.

99.99%

Average System Availability

Further details are provided in the section, "Electricity service and innovation" on page 129.

[2] The full document can be downloaded from Terna's corporate website using the following link: https://www.terna.it/it/sistema-elettrico/ruolo-terna/insight

The instruments that Terna uses to respond to the challenges posed by the energy transition are the infrastructure projects included in the Grid Development Plan[3] and innovation.

The Development Plan marks Terna's response to the community's need for a secure and efficient electricity service, even when demand is being met to a growing extent by production from non-programmable renewable sources. All investment in development of the grid is subject to a prior **cost-benefit analysis** (CBA), comparing the related expenditure with the resulting benefits, expressed in monetary terms. A positive cost-benefit ratio is a necessary condition of the investment's inclusion in the Development Plan.

The **2020 Development Plan entails investment of approximately €14 billion**, with over €4 billion included in the Strategic Plan 2020-2024. The Development Plan will enable the Company to achieve:

Approximately **2.1mln** TONNES of CO_2 Emissions avoided	**300** GWh/year In reduced energy losses	Around **5,000** MW In increased interconnection capacity with other countries	Around **5,500** MW In increased capacity provided by the connection of new renewable plants

Another key enabler of the energy transition is **innovation**, needed to operate an increasingly complex electricity system, requiring the management of a growing quantity of information. Given that the scenario is undergoing radical change, innovation requires an external contribution in the form of open innovation.

THREE INNOVATION HUBS WERE OPENED IN 2019

Turin	Milan	Naples
IoT-Internet of Things	**Analytics & Energy Systems**	**Digital to People**

These hubs are a type of local laboratory, focusing on the main areas of technology identified by Terna and interacting with local businesses, start-ups and the academic world.

Further information on Terna's innovation and the most important projects carried out during the year is provided in the paragraph, "Innovation", on pages 160-167.

[3] Further details are provided in the section, "Electricity service and innovation" on page 129-167.

Climate change: risks and opportunities

In common with a lot of infrastructure, the NTG is exposed to increasingly frequent extreme climate events.

Terna's strategy for mitigating the risks to its grid infrastructure and the electricity service is contained in its **Resilience Plan**, a specific section of the Security Plan.

The Resilience Plan presented as part of the 2020 Security Plan envisages **investment of approximately**

€505 million

over the five-year period 2020-2024

Climate change is also a source of opportunities reflected in Terna's strategy and relating to both the core business and non-regulated activities.

REGULATED ACTIVITIES

The Development Plan and the Electricity System Security Plan point investment towards the **integration of renewable sources** and **NTG resilience**, in keeping with ARERA's shift towards the use of output-based solutions, which could **boost Terna's returns in relation to its ability to generate benefits for the system**.

NON-REGULATED ACTIVITIES

The **Smart Tower** project aims to extract value from the NTG by expanding its use from an infrastructure exclusively designed for transmitting HV power to an **Integrated Monitoring and Environmental Protection System**, exploiting the potential of the IoT (Internet of Things) in relation to "environmental protection services", "NTG services" and "connectivity infrastructure". Trials involving the use of 11 pylons in environmental monitoring were completed in 2019 and smart towers were installed in Veneto and Abruzzo with a view to providing services for the NTG.

HIGHLIGHTS IN 2019

Green Bonds: three issues between July 2018 and April 2019, amounting to €1.5 billion, with the proceeds used entirely to finance grid development projects with positive environmental impacts.

Further details on the "Opportunities and risks connected with climate change" are provided in the specific paragraph on page 64.

Sustainable management

Integrating sustainability into management practices helps to create value over the medium to long term, enabling us to mitigate ESG (Environmental, Social, Governance) risks, equip the Group with the necessary human capital and build positive stakeholder relations.

The principal way in which this can be achieved is by including specific sustainability goals in the Strategic Plan, focusing on four areas (Human resources; Stakeholders and local communities; Integrity, responsibility and transparency; and Environment).

HUMAN RESOURCES

1. Health and safety
2. Skills development
3. People for Performance
4. Welfare and work-life balance

STAKEHOLDERS AND LOCAL COMMUNITIES

5. Local community engagement
6. Systematic stakeholder engagement
7. Social responsibility initiatives

INTEGRITY, RESPONSIBILITY AND TRANSPARENCY

8. Measurement of the impacts
9. Sustainable supply chain
10. Sustainability culture
11. Codes of conduct and sustainability culture

ENVIRONMENT

12. Transmission impacts
13. Reduction in CO_2 emissions
14. Environmental footprint

[Priority goal]

The principal goals are described in the corresponding sections.

Governance aspects

Terna's corporate governance is in line with the principles contained in the Code of Conduct[4] for listed companies. Further details are provided in the specific paragraph on page 48 and in the "Report on Corporate Governance and Ownership Structures", which is available on Terna's corporate website.

Sustainability goals are included in the Long-Term Incentive (LTI) plans for the Chief Executive Officer and the Group's management (further information is available in the "Remuneration Report").

[4] Edition last updated in July 2018 and available on Borsa Italiana S.p.A.'s website at http://www.borsaitaliana.it/comitato-corporate-governance/codice/2018clean.pdf. The Code was drawn up by the Corporate Governance Committee for listed companies established by ABI, Ania, Assonime, Assogestioni, Borsa Italiana and Confindustria).

Integrated Management System

The Integrated Management System is the tool that aligns day-to-day operations with international UNI ISO standards in terms of health and safety, the environment and the prevention of corruption. Terna currently has 8 certifications and 2 accreditations.

HIGHLIGHTS IN 2019

Terna was awarded certification for its Occupational Health and Safety Management System in accordance with the **ISO 45001:2018** standard, in advance of the deadline in 2021.

Human rights

In line with the recommendations from the United Nations "The guiding principles on business and human rights", Terna has adopted guidelines entitled "Respect for human rights within the Terna Group". The guidelines provide for a periodic due diligence process to be overseen by the Audit department[5].

Supply chain

In keeping with this sustainable approach, Terna also extends its attention to its ESG performance to the supply chain which, in 2019, numbered 2,251 suppliers and involved total expenditure on the procurement of services, supplies and works amounted to over €1,1484[6] million. To make its supply chain increasingly sustainable, Terna requires suppliers to meet environmental and social standards in order to qualify during tenders and achieve specific objectives[7].

"SUPPLY CHAIN SUSTAINABILITY" TARGET

KPI	2019 TARGET	2019 RESULT
ESG criteria in tenders		
Use of ESG criteria in "vegetation management" tenders > €1 million (% of tenders)	100%	100%
Use of ESG criteria in hardware procurement tenders* (% of tenders)	50%	66%
Supplier certifications		
% of ISO 14001 and OHSAS 18001 certified suppliers in contract work areas	91%	94%

** PCs, monitors, printers, video-conference systems, routers, switchers and servers.*

[5] See the paragraph "Respect for human rights" on page 90.
[6] The figure refers to the amount ordered during the year. This means the sum of the amounts allocated for all contracts (works, supplies and services) signed during the year.
[7] See the paragraph "Supply chain sustainability" on page 92.

Importance of local stakeholders

In 2019, Terna further strengthened its already significant commitment to local stakeholder engagement in order to combat local opposition to projects involved in development of the NTG, where communities see the impact the work will have on their area but not the benefits for the system.

The overall improvement in the quality of local stakeholder relations was an objective that, thanks to continuous dialogue, led to a result that was ahead of expectations.

"LOCAL COMMUNITY ENGAGEMENT" TARGET

KPI	2019 TARGET	2019 RESULT
Stakeholder engagement		
Stakeholders who changed their opinion* after a meeting with the Company	+15%	+17.9%

** Changes in local stakeholders' opinions of Terna are measured on the basis of a summary indicator that shows the level of satisfaction with Terna, weighted to take into account the significance of the stakeholder.*

HIGHLIGHTS IN 2019

- **469** **meetings** with local Authorities
- **40** **meetings** with the public
- **76** **plots of land returned** to owners following the demolition of obsolete lines

In line with the commitment to minimising the visual impact on the landscape of electricity infrastructure, Terna physically removes power lines that have become obsolete and prefers to use, where possible, underground cables - that are therefore "invisible" - for new works.

HIGHLIGHTS IN 2019

- **179 km** of obsolete lines removed
- **1,268 km** of obsolete lines removed in the ten-year period 2010-2019
- **144 km** of new underground lines

Further details on engagement with local stakeholders and, more generally, on relations with other categories of stakeholder are provided in the specific section on pages 101-127.




People

The peculiarities of Terna's business added to the objectives set out in the Strategic Plan have led to further investment in the Group's people, with the aim of strengthening the **long-standing commitment to occupational safety** and boosting **digital skills**, which are necessary in order to prepare the electricity grid to deal with the complexities of the energy transition.

Alongside this, the process of **generational turnover**, embarked on some years ago, has resulted in a constant increase in the level of education among the workforce and a gradual reduction in the average age, with the recruitment of 208 people under the age of 30 in 2019 out of a total of 287 new hires.

HIGHLIGHTS IN 2019

- **4.9** The injury rate (6.4 in 2018)
- **47 hours** of training per capita
- **98%** Coverage of the workforce (training)

Terna Engagement Survey 2019, an internal climate survey, was carried out in November 2019 to measure the degree of people's engagement based on three components - rational (understanding of corporate objectives and strategies), emotional (sense of belonging and pride) and motivational (availability and willingness to contribute).

HIGHLIGHTS IN 2019

- **85%** Response rate
- **64%** of participants made an additional comment
- **85%** Engagement score

Outperforming the average achieved by companies included in the index, in January 2020, Terna's inclusion in the **Bloomberg Gender Equality Index** (GEI) was confirmed. This is an international index that measures companies' performance regarding gender equality issues and the quality and transparency of their public reporting.

Environment

The commitment to a growing integration of renewable sources into the electricity system represents Terna's most important contribution to the environment.

This strategic goal is being pursued alongside efforts to cut CO_2 emissions linked to Terna's activities, such as, for example, minimising **leakage of the greenhouse gas SF_6** and implementing **energy efficiency programmes** in offices and at electricity substations.

HIGHLIGHTS IN 2019

0.40% an SF_6 leakage rate (as a % of the total installed)

Carbon intensity, measured as the ratio of CO_2 emissions (in tonnes) to revenue (in millions of euros), rose slightly in 2019 (58.2 compared with 57.8 in 2018) within the context of a gradual downward trend (93.9 in 2010).

In terms of environmental impact, Terna's activities regard less the use of natural resources and the emission of pollutants, and rather more the physical presence of power lines and electricity substations and their interaction with the surrounding natural and manmade environment (see page 198).

Waste management

Terna does not use raw materials, but does purchase finished products (electrical equipment, conductors, tools and other components). As part of a circular economy-based approach, at the end of their normal lifecycle, the materials used in electricity infrastructure are recovered for reuse in operations. Only a residual portion is sent to landfill and has an impact on the environment.

The percentage of waste recovered amounted to 94% in 2019 (86% in 2018 and 87% in 2017).

In line with sustainability guidelines, Terna promotes initiatives designed to boost internal awareness and the adoption of responsible behaviours in daily working life, such as, for example, "Terna Plastic Free" - the initiative that is eliminating single-use plastic from offices - and "Terna Recycling".

Sustainability ratings

In keeping with Terna's strategic objectives and the SDGs, combined with our constant commitment to improvement through the introduction of guidelines, policies and monitoring systems, our ESG performance is reflected positively in the sustainability ratings assigned by the leading international agencies.

Terna's inclusion in all the sustainability indices it was already present in was confirmed in 2019 and the Company was, for the second year running, named **Industry Leader** in the Electric Utilities sector of the Dow jones Sustainability Index.

In January 2020, this result led to the inclusion of Terna in the Gold Class of SAM's "Sustainability Yearbook 2020", a leading international publication focusing on corporate sustainability issues and performance.

Since 2017, Terna's ranking in the sectoral index published by SAM for the Dow Jones Sustainability Index is one of the objectives included in the **Long-Term Incentive (LTI) plan** for the Chief Executive Officer and the Group's management (further information is available in the "Remuneration Report").

Other information

This Report deals with issues considered to be material in accordance with the Company's materiality matrix, which was updated at the end of 2019. This reflects topics linked to the energy transition and their sustainable management.

Further information on the method used in the related analysis and on the "Materiality matrix" is provided on page 29.

15 years of sustainability

The Sustainability Report 2019 marks Terna's fifteenth annual report on its non-financial performances, proof of a concrete commitment that is increasingly integrated into the Group's business.

Timeline of Terna's commitment to sustainability

MILESTONES

2005

The "Corporate Social Responsibility and Internal Communication" department is established

Inclusion in the FTSE4Good index

2006

The first Sustainability Report is published (for 2005)

The Board of Directors approves the Code of Ethics

2007

ISO14001 and OHSAS18001 certification (Environmental and Safety Management System)

The first Sustainability Report based on the GRI standards and to be externally assured is published (for 2006)

2008

Agreement with LIPU *(Lega Italiana Protezione Uccelli-Birdlife International)* regarding a scientific study of the interaction between HV power lines and birds

2009

Terna signs up to the United Nations Global Compact

Inclusion for the first time in the Dow Jones Sustainability Index (DJSI) World

First ever inclusion in the Ethibel Sustainability Index

Guidelines on "Corporate Giving"

Strategic partnership agreement with WWF Italia

2010

Inclusion of sustainability goals in the BSC system

Work carried out at the WWF's Oases under the partnership agreement

2011

Inclusion in the STOXX® ESG index

Partnership agreements with Greenpeace and Legambiente

Membership of the IIRC-International Integrated Reporting Council

2012

Inclusion in Vigeo's Euronext index

Multi-stakeholder survey of Terna's social commitment

2013

The first multi-stakeholder panel is carried out

The first materiality analysis is conducted

Terna is a founding member of the "Global Compact Network Foundation Italy"

2014

New stakeholder map created

The first Integrated Report is published

2015

Industry Leader in the Electric Utilities sector of the DJSI

The "Cantieri aperti e trasparenti" (Open and Transparent Contracting) site goes online

Guidelines on the "Stakeholder management model"

2016

The Board Committee "Audit, Risk, Corporate Governance and Sustainability" is established

The first edition of Next Energy, an initiative for young talents and innovators, takes place

"Terna Incontra" events, a new form of stakeholder engagement for citizens, are launched

Guidelines on the "Social and environmental aspects of the supply chain"

"Whistleblowing policy" guidelines

2017

Terna is the first Italian company to receive ISO 37001 certification (Anti-corruption)

The Chief Executive Officer, Luigi Ferraris, takes part in the "Private Sector Forum" at the United Nations

Guidelines on "Respect for human rights in the Terna Group"

The "Supplier Code of Conduct" is published

Creation of the "Avian Team" group to protect biodiversity

2018

Industry Leader in the Electric Utilities sector of the DJSI

The first Green Bond is issued

Integration of SDGs 7, 9 and 13 into the Strategic Plan 2018-2022

The Chief Executive Officer, Luigi Ferraris, takes part in the "Private Sector Forum" at the United Nations

Terna is the first Italian company to receive ISO 55001 certification (Asset Management)

"Local stakeholder engagement and grid development" guidelines

2019

Industry Leader in the Electric Utilities sector of the DJSI

Sustainability goals ("Sustainability actions and KPIs for the Strategic Plan 2019-2023") integrated into the Strategic Plan

Guidelines on the "Consolidated Non-financial statement"

New "Corporate Giving" guidelines

The "Terna Plastic Free" initiative is launched

Since the first edition (the annual reporting period 2005), the Sustainability Report has been submitted for approval by the Board of Directors. From the second year onwards, it has been prepared on the basis of the international reporting standards drawn up by the GRI-Global Reporting Initiative and has been externally assured by the same audit firm responsible for auditing the Company's financial statements.

EVOLUTION OF TERNA SUSTAINABILITY REPORTS*

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Adoption of GRI standards	NO	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Version of standards adopted	=	G3	G3	G3	G3	G3	G3.1	G3.1	G3.1	G4	G4	G4	SRS	SRS	SRS
Level of GRI application	=	B+	B+	B+	A+	A+	A+	A+	A+	CORE	CORE	CORE	CORE	CORE	CORE
Number of indicators	=	35	41	55	56	58	64	65	64	69	83	83	66	63	63
External assurance	NO	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

** From the annual reporting period 2017, the Sustainability Report coincides with the Non-financial Statement.*

From the Report for 2009, the year in which Terna formally signed up to the United Nations Global Compact ("UNGC"), the Sustainability Report also constitutes the Communication on Progress ("CoP"). This is the instrument used by participating enterprises to report annually to stakeholders, via the UNGC's official website[8], on their activities and the related progress made in implementing the 10 Principles and in supporting the adoption of best practices through partnerships.

To make it easier to read the Report from a UNGC perspective, from the document for 2009, alongside the GRI Content Index, Terna also publishes a table linking the GRI indicators published with the matching Global Compact principles[9]. From the Report for 2011, in line with the growing number of indicators published, Terna's CoP[10] has achieved "Advanced" level, the highest level of disclosure and transparency envisaged by the UNGC.

Our commitment to all aspects of sustainability relevant to our business, as translated into policies and procedures, has enabled Terna to make numerous improvements and highlight them through complete, high-quality reporting. The performance of a selection of indicators is shown below, although it should be noted that certain factors, such as changes in the structure of the Group and in the size of our asset base or workforce, may have a partial impact on comparability.

SHARE PRICE PERFORMANCE
2005-2019

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	AVG 2005-2014	AVG 2015-2019	AVG 2005-2019
Share price in €	2.08	2.57	2.76	2.33	3.00	3.16	2.60	3.02	3.63	3.76	4.76	4.35	4.84	4.95	5.95	2.89	**4.97**	3.58

WORKFORCE
2005-2019

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	AVG 2005-2014	AVG 2015-2019	AVG 2005-2019
Total employees	3,388	3,475	3,495	3,524	3,447	3,468	3,493	3,433	3,442	3,437	3,333	3,468	3,508	3,843	3,872	3,460	**3,605**	3,508

[8] https://www.unglobalcompact.org/
[9] See the paragraph "Links between the GRI indicators and the Global Compact principles" on page 238.
[10] https://www.unglobalcompact.org/what-is-gc/participants/11215-Terna-S-p-A-

TRAINING
2005-2019

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	AVG 2005-2014	AVG 2015-2019	AVG 2005-2019
Total hours	124,188	118,123	146,787	186,654	164,416	171,146	178,734	143,418	120,115	148,955	190,807	203,066	178,856	203,556	183,193	150,254	**191,896**	164,134
Avg hours per capita	42	35	43	53	47	49	51	41	35	43	56	61	50	55	47	44	**59**	47

KM OF OBSOLETE LINES DEMOLISHED
2005-2019

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	AVG 2010-2014	AVG 2015-2019	AVG 2010-2019
Km of lines	n/a	n/a	n/a	n/a	n/a	91	130	120	81	93	98	290	98	87	179	103	**150.4**	120.9

SF_6 LEAKAGE
2005-2019

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	AVG 2005-2014	AVG 2015-2019	AVG 2005-2019
Leakage rate	0.59	0.58	0.77	1.07*	0.89	0.73	0.60	0.59	0.49	0.55**	0.44	0.39	0.47	0.38	0.40	0.68	**0.42**	0.59

** This figure includes leaks due to an accident that occurred in 2008.*
*** This figure includes leaks (784 kg) due to an accident that occurred in 2014.*

CARBON INTENSITY - TONNES OF CO_2 EQUIVALENT/ REVENUE (€M)
2005-2019

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	AVG 2006-2014	AVG 2015-2019	AVG 2006-2019
	n/a	104.54	115.2	132.5	111.3	93.9	87.8	77.5	72.7	72.0	65.9	65.0	68.6	57.8	58.2	96.4	**64.3**	84.5

Thanks to our sustainability performance, Terna has been included in a growing number of international stock exchange indices and boasts an increasing number of socially responsible investors (SRIs) among our shareholders, with proportion who are SRIs rising from 1.6% in March 2009[11] to 11.8% at the end of 2019.

INCLUSION OF TERNA'S SHARES IN SUSTAINABILITY INDICES

2005	2006	2007	2008	2009	2010	2011	2013-2015	2016	2017	2018	2019
FTSE4 GOOD	FTSE4 GOOD	FTSE4 GOOD	FTSE4 GOOD	FTSE4 GOOD	FTSE4 GOOD	FTSE4 GOOD	FTSE4 GOOD	FTSE4 GOOD	FTSE4 GOOD	FTSE4 GOOD	FTSE4 GOOD
	ECPI	ECPI	ECPI	ECPI	ECPI	ECPI	ECPI	ECPI	ECPI	ECPI	ECPI
		AXIA	AXIA	AXIA	AXIA	AXIA	AXIA	AXIA	AXIA	AXIA	AXIA
			FTSE KLD	FTSE KLD	MSCI	MSCI	MSCI	MSCI	MSCI	MSCI	MSCI
				ASPI	ASPI	ASPI	ASPI	ASPI	ASPI	ASPI	ASPI
				ETHIBEL	ETHIBEL	ETHIBEL	ETHIBEL	ETHIBEL	ETHIBEL	ETHIBEL	ETHIBEL
				DJSI World	DJSI World	DJSI World	DJSI World	DJSI World	DJSI World	DJSI World	DJSI World
					DJSI Europe	DJSI Europe	DJSI Europe	=	=	DJSI Europe	DJSI Europe
					FTSE ECPI	FTSE ECPI	FTSE ECPI	FTSE ECPI	FTSE ECPI	FTSE ECPI	FTSE ECPI
						STOXX® ESG	STOXX® ESG	STOXX® ESG	STOXX® ESG	STOXX® ESG	STOXX® ESG
							VIGEO Word e Europe	VIGEO Word e Europe	VIGEO Word e Europe	VIGEO Word e Europe	VIGEO Word e Europe
											Bloomberg GEI

[11] The first year the figure was recorded.

2

Methodological note

Structure of the Report, reporting standards, materiality analysis and table linking with the requirements of the “Non-financial Statement”.

>>

Methodological note

Introduction

The 2019 Sustainability Report is Terna's fifteenth annual publication focusing on the Group's environmental, social and governance performance. As in the previous two editions, this Report also has an additional role as the Group's "Non-Financial Statement", thus meaning the non-financial disclosure requirements set forth in Legislative Degree, as amended.

Reporting is based on the GRI Sustainability Reporting Standards published in October 2016 by the GRI - Global Reporting Initiative, applied in accordance with the "core" option.

In addition to information that meets the "Non-Financial Statement" requirements, clearly identified in the table on pages 34-35, the Report also contains additional voluntary disclosures in line with a general principle of maximum transparency.

As in previous years, the report was approved by Terna S.p.A.'s Board of Directors and had undergone specific audit procedures.

The independent limited assurance report on the Non-Financial Statement, prepared by PricewaterhouseCoopers, is included on page 241.

The observation period is 2019 and all data refer to the year ended 31 December 2019. Significant events occurring up to 29 February 2020 are also included.

Finally, any changes to the data published in previous editions are suitably indicated in the document.

Structure of the Report

The 2019 Sustainability Report opens with the "Summary of the 2019 Report", summing up key content and highlights presented throughout the document, and concludes with the section entitled "15 years of sustainability", providing a review of Terna's milestones in that period of time.

In compliance with Non-Financial Statement requirements, the "Profile and Activities" section gives detailed information on the Group's organisational and ownership structure, its business model and activities, whilst the next section entitled "Responsible business management" focuses on the cornerstones underlying the Group's approach to sustainability.

The first part of the Report ends with a new section on "Stakeholder engagement".

The central section, "Electricity service and innovation", deals with the various aspects of Terna's core business - the transmission and dispatching of electricity - placing them within the context of the relevant SDGs, namely 7 ("Affordable and clean energy"), 9 ("Industry, innovation, and infrastructure") and 13 ("Climate action").

The Report continues with two sections on "People" and "Environment".

As usual, in order to aid the reader, information corresponding to specific GRI indicators is denoted by the respective abbreviation in the margins of the text in the relevant passages (an indicator's abbreviation is placed next to the paragraph heading if the entire text is deemed relevant).

The focus on Tamini, a subsidiary operating in sectors different from those in which the rest of the Terna Group operates, reports on the results of the materiality analysis carried out at the beginning of 2019, and on the most significant environmental and social data (page 228).

The Report concludes with the "GRI Content Index", followed by a table linking the GRI indicators with the ten Global Compact principles.

The following are also attached to the Report:

- the "Green Bond Report 2019", a document enabling Terna to comply with the commitment given, when issuing its green bonds in July 2018, January 2019 and April 2019, to report annually on the use made of the related proceeds and the environmental benefits resulting from the projects financed with those proceeds;
- a section that does not fall within the scope of the Non-Financial Statement, consisting of "Key indicator tables", which reproduce the published GRI Standards, supplemented with additional ones.

Scope and indicators

Data and disclosures in the 2019 Sustainability Report refer to the Terna Group, meaning the scope that includes Terna S.p.A. and the companies consolidated on a line-by-line basis in its consolidated financial statements for the year ended 31 December 2019.

Unless otherwise indicated, the following are excluded from the scope:

- Tamini Group companies;
- Avvenia;
- company data referring to subsidiaries operating overseas.

Specifically, data for the Tamini Group are not consistent with data for the Terna Group. Aggregation of the two sets of data would not fully represent the specific nature of Tamini itself and assessment of the performance of the rest of the Group would be influenced by elements that would not permit a clear and realistic reading of the data.

The Tamini Group's environmental and social indicators are useful in helping to understand its activities, performance, results and impact on the Group. They are therefore presented in a specific section on page 225, which also includes the outcomes of the materiality analysis carried out by the Tamini Group in 2018.

Data regarding Avvenia, a subsidiary acquired in 2018 and controlled by Terna Energy Solutions, in its turn a subsidiary of Terna, have not been consolidated (17 staff at 31 December 2019). Environmental impact analyses for Avvenia were completed in 2019 and the results were not material for reporting purposes.

Environmental data regarding subsidiaries operating overseas have been consolidated in a compatible manner based on the type of impact and management model. In contrast, it was deemed preferable to report data on social aspects (e.g. injuries, easements) separately, given the importance of the reference regulatory framework.

In accordance with the materiality principle, data presented in the Sustainability Report cover all companies having a significant impact on sustainability (e.g. in terms of size or personnel, potential impact on the environment and the community or the number of transactions/activities occurring during the year) and over which Terna directly or indirectly exercises control or has the power to govern their financial and operating policies. There are no joint ventures, other subsidiaries or leased assets that might significantly influence the scope or compatibility of the environmental or social data.

In 2019, information on the 306 electricity substations formerly owned by RFI (239 at the end of 2018) was included in the scope of environmental data. Only the substations that, by 31 December 2019, had been integrated into the Terna Group's scope of operations have been consolidated. The remaining 44 electricity substations formerly owned by RFI were operated under an O&M (Operation & Maintenance) contract entered into with the previous owner.

The data have been calculated on the basis of Terna's general accounts and other information systems; where estimates have been used in calculating the indicators, the method utilised has been described.

All the GRI indicators are listed below in the "GRI content index", in which eventual limitations with respect to the relevant requirements are noted (see page 235).

Materiality

Regarding the section on non-financial content to be disclosed, Legislative Decree 254/2016 provides for coverage of *"environmental, social and personnel-related matters, respect for human rights and the fight against active and passive corruption, which are deemed relevant taking into account a company's activities and characteristics". Such matters should be reported "insofar as is necessary to ensure understanding of a company's activities, performance, results and impacts"*, thereby introducing a materiality criterion into the process of determining the topics to be reported and the extent to which they should be dealt with.

The Decree specifies that information should be provided *"in accordance with the methods and principles laid down by the reporting standard used"*. Having decided to adopt the GRI Standards as a reference, Terna opted to follow the recommendations of the GRI 101 - Foundation standard, which contains the basic guiding principles regarding content definition and the quality of reporting. According to this standard, the "material" topics to be potentially included in reporting are those that reflect the significant impacts (positive and negative) of an organisation in the economic, environmental and social spheres, and which influence stakeholders' decisions.

The choice of topics on which this Report is based reflects the updated materiality analysis conducted in 2019. Specifically, said analysis sprang from a revision of the topic tree with respect to the 2016 version, which took account of strategic trends in recent years (e.g. constant reference to energy transition) and advancements in key corporate documents.

A comparison with the materiality categories used by the SASB (Sustainability Accounting Standards Board), including the metrics in the standard for the Electric utilities & Power generation sector, indicates the presence of the applicable SASB categories among Terna's topic tree, bearing in mind the particular nature of Terna's business (e.g. no relations with final consumers, no electricity generation).

In updating the **"significance for Terna"** aspect, a survey of the Company's managers was carried out (on two levels starting from the Group Parent's Chief Executive Officer). Participants were asked to assess the topics in the new topic tree.

This survey results were weighted against the assessments completed in 2018, aimed at evaluating the level of "active management" (existence of policies, procedures, objectives, monitoring activities, etc.) concerning each topic. The overall results were then validated by the Group's senior management.

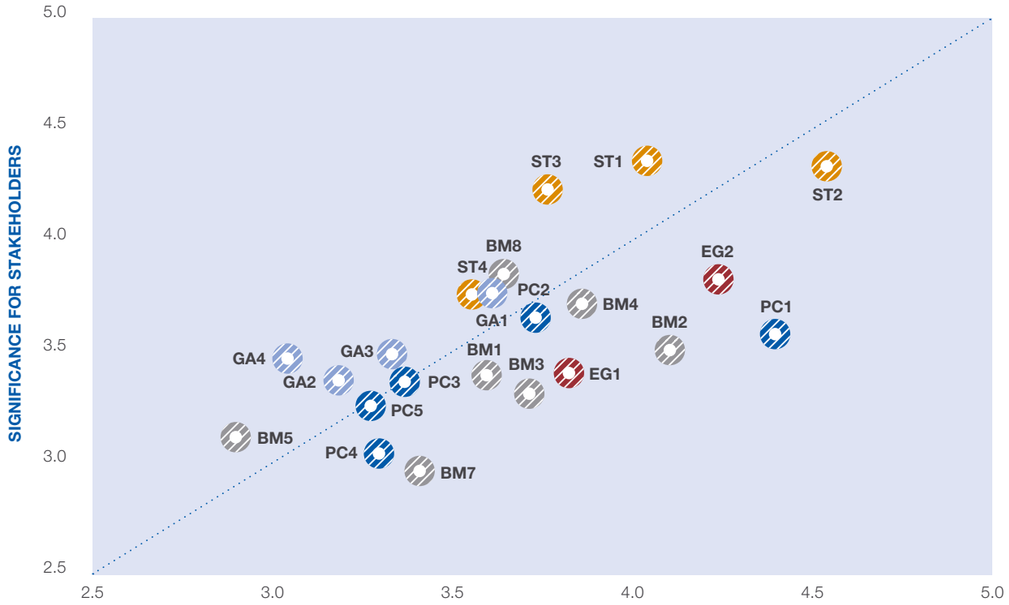
With regard to the **"significance for stakeholders"** aspect, the assessment was carried out via an external survey involving various subgroups of key stakeholders (institutional shareholders, distributors, national and local media, national and international opinion groups, non-regulated customers, core suppliers and representatives of local interest groups).

Moreover, numerous documentary sources revealing the perception of stakeholders not included in 2018 were examined, thereby enhancing and enriching the analyses completed in 2018:

- direct engagement, namely the outcomes of initiatives carried out directly by Terna and aimed at its stakeholders to understand their perception of significance with regard to topics (e.g. for staff, local communities, public decision-makers and authorities);
- general sources, namely standards, publications, position papers, stakeholders' assessment tools that reflect their perception of significance in relation to topics.

The score that summarises the significance of a topic for the majority of stakeholders was obtained by combining the assessments relating to each stakeholder category with the weighting of this category in terms of influence and mutual dependence in their relationship with the Group.

MATERIALITY MATRIX



Ethics and Governance Model

EG1: Governance model effectiveness

EG2: Business integrity

Transmission service

ST1: Delivering the energy transition

ST2: Ensuring the quality, security and continuity of the electricity service

ST3: Grid resilience

ST4: Economic impacts on the community

Management of environmental impacts

GA1: Mitigating the impact of infrastructure

GA2: Protecting biodiversity

GA3: Reducing the Group's CO_2 emissions

GA4: Reuse and recycling of materials

Business Management

BM1: Strategic approach to stakeholder management

BM2: Delivering on financial and performance goals

BM3: Information security

BM4: Optimal management of relations with local stakeholders

BM5: Growing and diversifying the business

BM7: Sustainable supply chain

BM8: Innovation and digitalisation

Our people and the community

PC1: Workplace health and safety and correct working practices

PC2: HR development

PC3: Promoting wellbeing within the workforce

PC4: Promoting diversity and equal opportunities

PC5: Social responsibility and positive impact on local areas

A summary of the Company's and stakeholders' points of view is expressed in the **Materiality Matrix**, which makes it possible to identify the "material" topics, namely those deemed most important by Terna and stakeholders. It also highlights any differences in viewpoints on topics between stakeholders and the Company.

In the matrix, the most significant topics are those furthest from the origin; the most important topics in absolute terms are the ones furthest from the origin and, at the same time, closer to the bisector.

Terna's Sustainability Report has always aimed to provide transparent and full disclosure. This same approach has also been adopted in this document, which serves to meet the requirements of Legislative Decree 254/2016. Nonetheless, given the emphasis placed by the standard on materiality, it should be pointed out that some of the topics shown in the matrix are not among those that are strictly necessary "*to ensure understanding of a company's activities, performance results and impact*".

This particularly regards the advancement of well-being in the Company, the protection of biodiversity, the reuse and recycling of materials and business development and diversity. These topics have been identified as falling below a minimum materiality threshold based on a distribution of values of overall relevance - provided by adding up the significance scores for stakeholders and Terna - and by the distribution of significance for Terna. These - like all significant topics - are also included in the Sustainability Report, but by virtue of the Company having opted for "voluntary disclosure" and not due to regulatory requirements of Legislative Decree 254/2016.

Risks and impacts

The significance of the various topics for Terna and its stakeholders is based on the impacts, both positive and negative, connected to them. In line with the requirement in Legislative Decree 254/2016 to explain "*the main risks, generated or incurred, in connection with*" the significant topics in terms of materiality, for each of the topics identified, the table below shows an example of the risk involved and the type of impact for Terna and for the specific categories of stakeholder affected. In the classification of impacts for Terna, the categories used in the Company's application of the Enterprise Risk Management model have been adopted, whilst the impacts for stakeholders are broken down into:

- Service quality
- Economic
- Health and safety
- Human rights
- Quality of life, wellbeing

TOPIC	EXAMPLE OF RISK MANIFESTATION	POTENTIAL IMPACT ON TERNA	STAKEHOLDERS POTENTIALLY IMPACTED	POTENTIAL IMPACT ON STAKEHOLDERS
Ensuring the quality, security and continuity of the electricity service	Increase in malfunctions, grid inadequacy	- Strategic/operational - Reputational - Economic/financial	Community	*Service quality, economic*
Delivery of the energy transition	Increased service disruption, grid inadequacy, growth in renewable energy production below expectations	- Strategic/operational - Reputational - Economic/financial	Community, electricity sector'operators, public decision-makers and regulators	*Service quality, economic, decarbonisation targets*
Business integrity	Behaviours in breach of statutory requirements	- Compliance - Reputational - Economic/financial	Shareholders, other stakeholders who are damaged by Terna's conduct	*Shareholders: economic. Other stakeholders: human rights, health and safety, economic*
Grid resilience	Increased service disruption, grid inadequacy	- Strategic/operational - Reputational - Economic/financial	Community, local communities affected by the presence of Terna's infrastructure	*Quality and continuity of service, economic*
Workers' health and safety and workers' rights	Occupational injuries	- Reputational - Economic/financial - Compliance	Personnel, suppliers	*Health and safety, human rights*
Delivering on financial and performance goals	Economic and financial performance below expectations	- Strategic/operational - Economic/financial	Shareholders, lenders, suppliers, business partners, personnel, community	*Economic*
Optimal management of relations with local stakeholders	Tensions with local communities affected by grid development	- Reputational - Economic/financial - Strategic/operational	Local communities	*Quality of life, wellbeing*
Innovation and digitalisation	Insufficient innovation capacity for the energy transition and business growth	- Strategic/operational - Economic/financial in the medium-term - Reputational	Community, shareholders, suppliers	*Community: service quality. Shareholders and suppliers: economic in the medium-long-term*
HR development	Inadequate human capital	- Strategic/operational - Reputational - Economic/financial	Shareholders, personnel	*Personnel: quality of life, economic. Shareholders: economic*

TOPIC	EXAMPLE OF RISK MANIFESTATION	POTENTIAL IMPACT ON TERNA	STAKEHOLDERS POTENTIALLY IMPACTED	POTENTIAL IMPACT ON STAKEHOLDERS
Mitigation of impact of infrastructure	Insufficient consideration given to and containment of negative externalities (excluding CO_2 emissions) resulting from Terna's operations	- Reputational	Local communities affected by the presence of Terna's infrastructure	*Quality of life, wellbeing*
Economic impact on the community	Increased cost of the service (caused by Terna)	- Reputational - Economic/financial in the medium-term - Strategic/operational	Community	*Economic*
Effectiveness of governance model	Below par governance	- Strategic/operational - Reputational	Shareholders, lenders, suppliers, business partners, personnel	*Economic (indirect)*
Information security	Increased disruption to services, loss of confidential data, breach of privacy of grid users, grid inadequacy	-Strategic/operational - Reputational - Economic/financial	Community, electricity sector operators, personnel	*Quality of service, economic, right to privacy*
Strategic approach to stakeholder management	Failure to consider stakeholders' expectations	- Reputational - Strategic/operational	All	*Quality of life, wellbeing*
Reduction in the Group's CO_2 emissions	Insufficient consideration given to and containment of greenhouse gas emissions resulting from Terna's operations	- Reputational	Community	*Quality of life, wellbeing*
Sustainable supply chain	Conduct of suppliers not in line with Terna's sustainability policies	- Reputational - Economic/financial	Suppliers	*Human rights, health and safety*
Advancement of diversity and equal opportunities	Unjustified differences in treatment linked to aspects of diversity; inadequate human capital	- Reputational - Economic (productivity)	Personnel, potential candidates for employment	*Human rights and economic*
Social responsibility initiatives	Terna's social responsibility unclear and poorly perceived	- Reputational	Community, personnel	*Quality of life, wellbeing. Personnel: sense of pride*

The following table links Legislative Decree 254/2016 ("Non-Financial Statement") topics to the topics deemed to be material during Terna's materiality analysis and by the adopted reporting standard. In line with the changes to said Decree introduced by Law 145/2018, the following table includes a new column showing exact references to how the Group manages the various risks generated or incurred.

LEGISLATIVE DECREE 254/2016 TOPIC	TERNA MATERIAL TOPIC	RISKS IDENTIFIED	POLICIES ADOPTED AND HOW THE RISKS GENERATED OR INCURRED ARE MANAGED	TOPIC SPECIFIC STANDARD	TOPIC SPECIFIC DISCLOSURE	NOTE
Environmental	Mitigation of impact of infrastructure	See materiality risks table (page 32)	**"Environment" section:** **Power lines and local communities** (Km of lines demolished, Power lines with reduced visual impact, Use of underground lines, Mitigation and natural engineering): page 198-202. **Management and monitoring of electromagnetic fields:** page 207. **Reports and complaints regarding environmental concerns:** page 207. **"Transmission impacts" target - KPIs and targets in the Strategic Plan 2020-2024:** page 199. **Reports and complaints regarding environmental concerns:** page 207. **"Electricity service and innovation" section:** **State of progress in implementing previous Development Plans:** pages 145-146. **"Responsible business management" section:** **Compliance with legislation:** page 83.	304; 413	304-1; 413-2 EU13	
	Reduction of the Group's CO_2 emissions	See materiality risks table (page 33)	**"Environment" section:** **Direct and indirect CO_2 emissions** (Containment of direct emissions: SF_6, leakage): pages 212-215. **"Transmission impacts" target - KPIs and targets in the Strategic Plan 2020-2024:** page 214. **Consumption and cuts in emissions: energy efficiency** (Energy management system, energy efficiency in substations and offices, vehicle fleet): pages 215-218. **Other indirect CO_2 emissions** (Grid losses): page 219.	305; 201 302	305-1; 305-2 305-4; 201-2 302-1; 302-3	
	Delivery of the energy transition	See materiality risk table (page 32)	**"Electricity service and innovation" section:** **Investment and innovation for the SDGs:** pages 140-141. **Grid development** (2020 Development Plan, Reduction of CO_2 emissions in the electricity system; State of progress in implementing previous Development Plans; Connecting new plants; Overseas interconnections; Private interconnectors pursuant to Law 99/2009): pages 142-151. **"Profile and activities" section:** **Opportunities and risks connected with climate change:** pages 64-67.	201	201-2	
Social	Quality, security and service continuity	See materiality risks table (page 32)	**"Profile and activities" section:** **Electricity transmission:** pages 52-55. **Dispatching of electricity:** page 56. **"Electricity service and innovation" section:** **Continuity and quality of service:** pages 136-137. **Grid development** (2020 Development Plan, Reduction of CO_2 emissions in the electricity system; State of progress in implementing previous Development Plans; Connecting new plants; Overseas interconnections; Private interconnectors pursuant to Law 99/2009): pages 142-151. **Asset management** (Infrastructure maintenance; Renewal Plan; Security and resilience of the electricity system): pages 152-158. **Innovation** (Open Innovation; Terna Innovation Hubs; Factories; Innovation, research and development initiatives): pages 160-167.	203	203-1; EU28 EU29	
	Optimal management of engagement with local stakeholders	See materiality risks tables (page 32)	**"Responsible business management" section:** **Sustainability objectives and targets:** pages 77-78. **"Stakeholder engagement" section:** **Dialogue with local communities** (Local communities; The most difficult cases and shared solutions): pages 105-111. **"Local community engagement" target - KPIs and targets in the Strategic Plan 2020-2024:** page 107. **"Environment" section:** **Power lines and local communities** (Planning and consultation): pages 198-200.	413	413-1; 413-2	
Pertaining to personnel	Workers' health and safety and correct working practices	See materiality risks tables (page 32)	**"Responsible business management" section:** **Respect for human rights:** pages 90-91. **"People" section:** **Protecting employees' safety:** pages 185-187. **"Health and safety" target - KPIs and targets in the Strategic Plan 2020-2024:** page 189.	403	403-1; 403-2 403-4	
	Development of human resources	See materiality risks table (page 32)	**"People" section:** **Development:** page 181. **"Application of performance evaluation" - KPIs and targets in the Strategic Plan 2020-2024:** page 181.	401; 404	401-1; 404-1 EU15	
	Advancement of diversity and equal opportunities	See materiality risks tables (page 33)	**"People" section:** **Diversity and equal opportunities:** page 192.	405	405-1; 405-2	
Respect for human rights	Sustainable supply chain	See materiality risks tables (page 33)	**"People" section:** **Safety, the environment and human rights at contractors' construction sites:** pages 190-191. **Procurement and supplies:** pages 92-94. **"Sustainable supply chain" target - KPIs and targets in the Strategic Plan 2020-2024:** page 94.	406; 407 412; 414	406-1; 407-1 412-1; 414-1 414-2	
Fighting corruption	Business integrity	See materiality risks tables (page 32)	**"Responsible business management" section:** **Compliance, integrity and the prevention of corruption** (Compliance with legislation; Prevention of corruption): pages 83-87.	205; 206	205-1; 205-3 206-1	

3

Profile and activities

Presentation of Terna: key SDGs, the Group's structure and governance, its activities and business model, the new Strategic Plan and the main economic impacts.

>>

In brief

This is an introductive section presenting Terna: changes in the Group's structure with respect to 2018, the Parent Company's ownership structure, its governance, business model, core activities, new Strategic Plan 2020-2024 and, above all, the values underpinning its approach to doing business, consisting of the UN Sustainable Development Goals (SDGs), primarily Goals 7, 9 and 13.

The business model, designed to deliver the current energy transition, identifies a number of essential enablers ("People"[12] and "Innovation"[13]), starting from Terna's mission, which corresponds with our two core activities and the related roles in the electricity system: transmission (TSO-Transmission System Operator) and dispatching (SO-System Operator). These activities represent the Company's core business[14] ("Regulated Activities" or "Regulated Activities in Italy"), whilst our other activities are classified as non-regulated ("Non-regulated Activities") and international ("International Activities").

Information on the Strategic Plan 2020-2024 is followed by a paragraph on "Opportunities and risks connected with climate change"[15], focusing on the principal reason for the need to implement a new energy model based on the integration of renewable sources.

The section closes with a brief description of revenue in 2019, broken down by type ("Regulated Activities", "Non-regulated Activities" and "International Activities"), and the main economic impacts during the year, starting with the value added generated.

HIGHLIGHTS:

SRIs	Capital expenditure	Procurement
(Socially Responsible Investors)		
11.8%	€1,264.1mln	€1,484mln
of the free float	(up 15.6% on 2018)	(up 25.5% on 2018)
(9.5% in 2018)		

[12] See the specific section on page 169.
[13] See the specific paragraph on page 160.
[14] Transmission and dispatching activities are described in a specific section, "Electricity service and innovation" on page 129.
[15] See page 64.

Introduction

The Terna Group's main activities are electricity transmission and dispatching in Italy, where, under a government concession, it performs the role of TSO (Transmission System Operator).

Terna is thus responsible for the planning, construction and maintenance of the National Transmission Grid ("NTG"), as well as management of the electricity that flows through it, with the aim of ensuring the continuity and quality of the service.

During the current transition to a decarbonised economy, Terna has a key role to play in enabling the growing integration of non-programmable renewable sources.

Based in Rome, the Terna Group owns almost the entire NTG, which is among the most modern and technologically advanced transmission grids in Europe. We are the largest independent electricity transmission network operator in Europe and one of the world's leading operators in terms of the number of kilometres of overhead line managed, with over 74,000 kilometres of high-voltage lines.

The Group is responsible for the long-term security, quality and cost-effectiveness of the national electricity system, pursuing its development and integration with the European system. We ensure that all network users have equal access. Our activities are carried out under a monopoly regime, in accordance with the regulations defined by the Regulatory Authority for Energy, Networks and the Environment ("ARERA") and in implementation of the guidelines established by the Ministry for Economic Development (the "MED").

Alongside these activities ("Regulated Activities in Italy"), the Group also operates in a number of non-regulated sectors in Italy, leveraging the technical expertise acquired in managing its core business and as a result of innovation ("Non-regulated Activities").

Finally, the Group offers its expertise and services to overseas customers ("International Activities"), including in collaboration with energy operators that have an established international presence. These initiatives focus on countries that require investment in their transmission systems, and which also have stable political and regulatory frameworks and a risk-return profile in line with that of the Company.

In managing all its businesses, Terna pays great attention to the possible economic, social and environmental impacts, and adopt a sustainable approach to business in order to establish, maintain and consolidate relationships with its stakeholders that are based on mutual trust, with a view to creating shared value.

The Parent Company, Terna S.p.A., is listed on Borsa Italiana's screen-based trading system (*Mercato Telematico Azionario*) and, at approximately €11.9 billion[16], ranks among Italy's leading companies by market capitalisation.

[16] Market capitalisation at the close of trading on 30 December 2019. The market capitalisation, calculated on the basis of the average share price for the year, is €11.3 billion.

Terna and the SDGs

Terna's activities and mission coincide almost entirely with a number of the United Nations SDGs.

Specifically, the relevant SDGs are 7 ("Affordable and clean energy"), 9 ("Industry, innovation and infrastructure") and 13 ("Climate action"), whose implementation depends primarily on delivery of the energy transition towards a decarbonised economic model and of the NTG Development Plan.

For this reason, the section on the "Electricity service and innovation" is structured in such a way as to highlight Terna's activities that contribute to implementation of the relevant SDGs, starting with preparation of the 2020 Development Plan and the description of the progress made with respect to the previous Plans.

The SDGs are at the same time a benchmark for the approach Terna adopts in managing its activities. This is founded on objectives such as the efficient use of natural resources, respect for the environment, cuts in emissions, waste reduction and recycling, respect for human rights, efforts to foster innovation, partnerships to combat corruption, and transparent reporting.

In this sense, Terna makes reference to Goals 8 ("Decent work and economic growth"), 12 ("Responsible consumption and production"), 15 ("Life on land"), 16 ("Peace, justice and strong institutions") and 17 ("Partnership for the Goals").

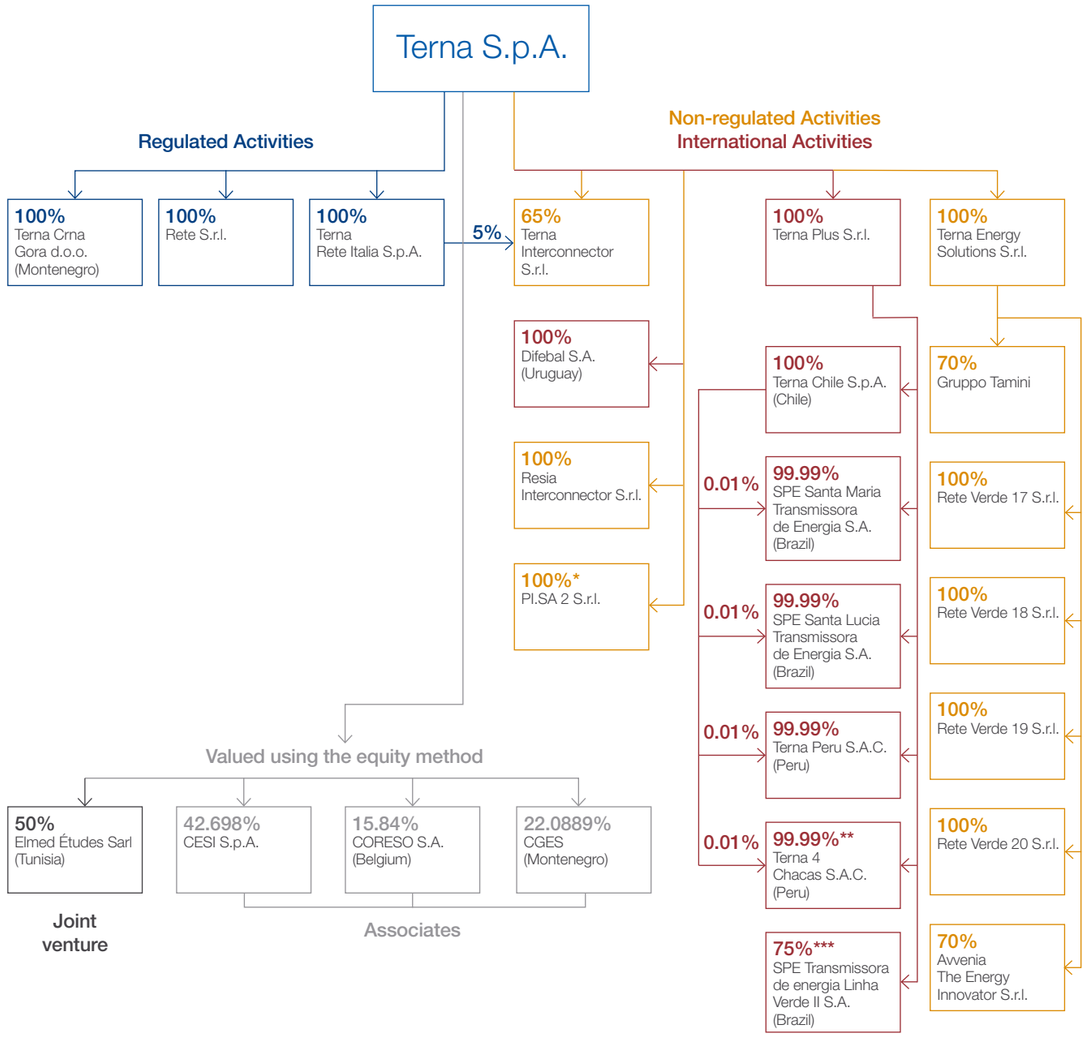
TERNA'S BENCHMARK SDGs

			SDGs
Ensure access to affordable, reliable, sustainable and modern energy for all.	Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation.	Take urgent action to combat climate change and its impacts.	Target

BENCHMARK SDGs FOR THE MANAGEMENT OF TERNA'S ACTIVITIES

					SDGs
Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.	Ensure sustainable consumption and production patterns.	Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.	Promote peaceful and more inclusive societies for sustainable development; provide access to justice for all and build effective, accountable and inclusive institutions at all levels.	Strengthen the means of implementation and revitalize the global partnership for sustainable development.	Target

Structure of the Group



Compared with 31 December 2018:

* PI.SA.2 S.r.l., a wholly owned subsidiary of Terna S.p.A., was established on **15 February 2019**, following a restructuring of the regulated activities relating to the Italy-France interconnector.

** Terna 4 Chacas S.A.C. was established on **6 August 2019**, following the agreement signed in 2016 to start work on the construction of a new 16-km power line. The company is 99.99999% owned by Terna Plus S.r.l, with the remaining interest held by Terna Chile S.p.A..

*** On **11 November 2019**, Terna S.p.A., acting through its subsidiary, Terna Plus S.r.l., closed the transaction with Construtora Quebec resulting in the acquisition of a 75% interest in the Brazilian-registered joint-stock company, SPE Transmissione de energia Linha Verde II S.A..

The sale of Monita Interconnector S.r.l. to Interconnector Energy Italia s.c.p.a. was completed on **17 December 2019**.

SUBSIDIARIES WITH REGULATED ACTIVITIES

Company	Business		Revenue
Terna Rete Italia S.p.A.	All regulated activities related to operation, routine and extraordinary maintenance, management and development of the NTG.	3.170	465.9 €m
Rete S.r.l.	Acquired in 2015 from Ferrovie dello Stato Italiane (Italian State Railways) group, the company owns 8.3% of the NTG infrastructure.	0	143.7 €m
Terna Crna Gora d.o.o. *Company incorporated under Montenegrin law*	Management of construction of the Italy-Montenegro interconnector, on the Montenegrin side.	10	0 €m

SUBSIDIARIES WITH NON-REGULATED ACTIVITIES IN ITALY

Company	Business		Revenue
Terna Energy Solutions S.r.l.	Development of new activities and business opportunities in the Italian Non-regulated market.	52	12.9 €m
Tamini Trasformatori S.r.l.	Production and marketing of industrial and power transformers via six production plants located in Italy in Legnano (MI), Melegnano (MI), Novara, Valdagno (VI), Ospitaletto (BS) and Rodengo (BZ).	351	140.5 €m
Rete Verde 17 S.r.l.	Development of renewable energy initiatives.	0	0 €m
Rete Verde 18 S.r.l.	Development of renewable energy initiatives.	0	0 €m
Rete Verde 19 S.r.l.	Development of renewable energy initiatives.	0	0 €m
Rete Verde 20 S.r.l.	Development of renewable energy initiatives.	0	0 €m
Avvenia The Energy Innovator S.r.l.	Implementation of energy efficiency projects, including via EPC (Energy Performance Contract) solutions.	17	4.7 €m
Terna Interconnector S.r.l.	Development and construction of private infrastructure for interconnections with other countries.	0	86.2 €m
Resia Interconnector S.r.l.	Construction and operation of the Italy-Austria interconnector as part of the Interconnector project.	0	0 €m
PI.SA 2 S.r.l.	Construction of the Italy-France interconnector following a restructuring of the related activities.	0	0.2 €m

Acquisition of Brugg Kabel AG, a leading manufacturer of terrestrial cables

As part of the growth strategy for Non-regulated Activities, on 29 February 2020, Terna, acting through its subsidiary, Terna Energy Solutions S.r.l., completed the acquisition of a 90% interest in Brugg Kabel AG (a Brugg group company), one of Europe's leading manufacturers of terrestrial cables. The acquired company designs, develops, produces, installs and maintains electric cables for all voltages and accessories for high-voltage cables.

SUBSIDIARIES WITH NON-REGULATED INTERNATIONAL ACTIVITIES

Business		Revenue	Company
Development of new activities and business opportunities in the non-regulated international market, in particular in South America.	43	0.7 €m	**Terna Plus S.r.l.**
Management of activities involved in the design, construction and maintenance of electricity infrastructure.	0	0 €m	**Terna Chile S.p.A.** *Company incorporated under Chilean law*
Management of activities involved in the design, construction and maintenance of electricity infrastructure.	2	5.1 €m	**SPE Santa Maria Trasmissora de Energia S.A.** *Company incorporated under Brazilian law*
Management of activities involved in the design, construction and maintenance of electricity infrastructure.	16	24.1 €m	**SPE Santa Lucia Trasmissora de Energia S.A.** *Company incorporated under Brazilian law*
Management of activities involved in the design, construction and maintenance of electricity infrastructure.	8	4.4 €m	**Terna Perù S.A.C.** *Company incorporated under Peruvian law*
Management of activities involved in the design, construction and maintenance of electricity infrastructure.	7	39.3 €m	**Difebal S.A.** *Company incorporated under Uruguayan law*
Construction, for the Parish of San Martàn Papa de Chacas in Peru, of a power line in the city of San Luis and the supply of a number of components to be used in the construction of a substation.	0	0€m	**Terna 4 Chacas S.A.C.** *Company incorporated under Peruvian law*
Management of activities involved in the design, construction and maintenance of electricity infrastructure.	7	4.7 €m	**Linha Verde II S.A.** *Company incorporated under Brazilian law*

ASSOCIATES OR JOINT VENTURES

Business		Revenue	Company
Pure and applied scientific research aimed at making advances in the electro technical, energy, electronic and IT sectors.	693	124.2 €m	**CESI S.p.A.**[17]
Management of daily forecasting and real-time analysis of energy flows in central and western Europe, identifying possible critical issues and promptly informing the TSOs concerned.	45	10.5 €m	**CORESO S.A.**[18 19] *Company incorporated under Belgian law*
TSO for Montenegro's electricity market. Investment acquired as part of the Italy-Balkans interconnector project.	312	33.7 €m	**CGES**[20 21]
Jointly controlled by Terna and the Tunisian company, STEG, the company is engaged in carrying out preparatory studies for construction of the infrastructure required to connect the Tunisian and Italian electricity systems.	2	0 €m	**Elmed Études Sarl**

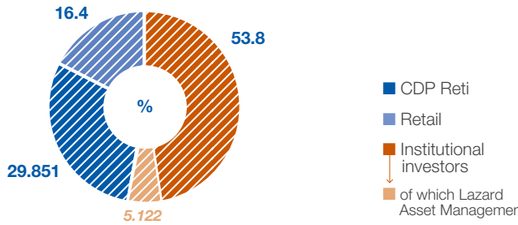
[17] Data refer to 2018.
[18] Although the stake is less than 20%, the investment remains relevant based on the assumption that the Parent Company exerts significant influence. The shareholders include Terna and the operators in France (RTE), Belgium (Elia) and the UK (National Grid), each with 15.84% interests, in addition to the German operator, 50 Hertz Transmission, with 7.90%.
[19] Data refer to 2018.
[20] In full, "Crnogorsk Elektroprenosmi Sistem Ad".
[21] Data refer to 2018.

Ownership structure

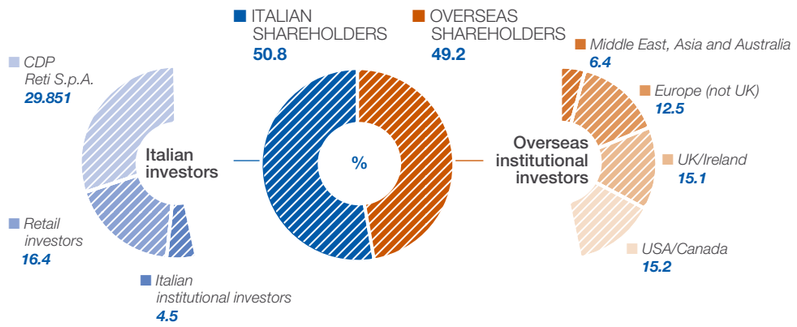
Terna S.p.A.'s share capital amounts to €442,198,240, comprising 2,009,992,000 fully paid-up ordinary shares with a par value of €0.22 each.

Based on information from the shareholders' register and other available data in February 2020, Terna's shareholder structure breaks down as follows:

SHAREHOLDERS BY CATEGORY



SHAREHOLDERS BY GEOGRAPHICAL AREA AND CATEGORY



Socially responsible investors

At the end of 2019, 147 socially responsible investors (SRIs), compared with 109 in 2018 and 103 in 2017, had invested in Terna's shares using an approach that takes into account ESG (Environmental, Social, Governance) aspects. Overall, at the end of 2019, SRIs represented 11.8% of Terna's free float (9.5% in 2018 and 8.3% in 2017) and 15.4% of the capital held by identifiable institutional investors (12.9% at the end of 2018 and approximately 11% in 2017).

Terna has adopted a policy that envisages payment of dividends twice a year.

The interim dividend for 2019 was 8.42 euro cents (paid on 20 November 2019), while the final dividend to be proposed to shareholders by the Board of Directors at the Annual General Meeting on 27 April 2020* is 16.53 euro cents. Further information on the dividend history may be found at www.terna.it.

The Annual General Meeting of 8 May 2019 was attended by 1,804 shareholders (of which 6 in person and 1,798 by proxy), holding a total of 1,321,848,328 shares, equal to 65.763860% of the share capital, all of which bearing voting rights.

Information on the ownership structure, restrictions on the transfer of shares, securities that grant special rights, and restrictions on voting rights, as well as on shareholder agreements, is provided in the "Report on Corporate Governance and Ownership Structures" for 2019, published together with the Annual Report of Terna and the Terna Group. This is available in the "Investor Relations" section of Terna's website.

Eleven requests for information were received by e-mail from non-institutional shareholders (14 in 2018 and 12 in 2017), regarding information on the dividend policy, the share price performance, information on the dates and availability of Terna's corporate documents and/or documents relating to General Meetings and/or other information material on the Company.

** After the date of approval of this Report, and in view of the current health emergency linked to the covid-19 epidemic and the legislation introduced in order to contain the outbreak, the Company has announced a new date for Terna S.p.A.'s Annual General Meeting, which is now scheduled for 18 May 2020.*

Corporate governance

The governance system is substantially in line with the principles contained in the Code of Conduct[22] for listed companies adopted by Terna, with the related recommendations made by the CONSOB and, more generally, with the international best practices the Company uses as a benchmark.

The current structure of the Board of Directors requires the presence of one Chief Executive Officer, to whom the Board granted the necessary authority via a resolution approved on 27 April 2017, in which the Board defined the scope, limitations and means by which to exercise such authority.
The activities of the Board of Directors are coordinated by the Chairman. The Board of Directors consists of nine members, whose terms of office will end with approval of the financial statements for the year ended 31 December 2019.

On 10 August 2018, the Director Stefano Saglia, resigned and, on 15 February 2019, Terna S.p.A.'s Board of Directors co-opted a new non-executive Director, Paolo Calcagnini, on to the Board as his replacement.
The Director, Luca Dal Fabbro, tendered his resignation on 22 March 2019.
Following the above resignations, the Annual General Meeting of 8 May 2019 elected Paolo Calcagnini, following his earlier co-option, and Prof. Marco Giorgino as Directors of the Company. Both the new Directors were nominated by a group of funds and institutional investors.

At a meeting on 19 June 2019, Terna S.p.A.'s Board of Directors approved the new compositions of the "Audit, Risk, Corporate Governance and Sustainability Committee" and "Related Party Transactions Committee", as required following the Annual General Meeting's election of the above Directors.

405-1 >

COMPOSITION OF THE BOARD OF DIRECTORS AS AT 10 MARCH 2020

	UNIT	
Men	%	55.6
Women	%	44.4
Under 30	%	-
Between 30 and 50	%	22.2
Over 50	%	77.8

[22] Edition last updated in July 2018 and available on Borsa Italiana S.p.A.'s website at http://www.borsaitaliana.it/comitato-corporate-governance/codice/2018clean.pdf. The Code was drawn up by the Corporate Governance Committee for listed companies established by ABI, Ania, Assonime, Assogestioni, Borsa Italiana and Confindustria).

Board of directors

Chairwoman
Catia Bastioli

Chief Executive Officer
Luigi Ferraris

Directors
Paolo Calcagnini (from 15/2/2019)
Fabio Corsico
Paola Giannotti
Marco Giorgino (from 8/5/2019)
Yunpeng He
Gabriella Porcelli
Elena Vasco

Board of statutory auditors

Chairman
Riccardo Enrico Maria Schioppo

Standing Auditors
Vincenzo Simone
Maria Alessandra Zunino de Pignier

Alternates
Cesare Felice Mantegazza
Renata Maria Ricotti
Davide Attilio Rossetti

Independent Auditors

PricewaterhouseCoopers S.p.A.

Board committees

Audit, Risk, Corporate Governance and Sustainability Committee
Paola Giannotti (Chairwoman, indipendent)
Marco Giorgino (indipendent)
Gabriella Porcelli (indipendent)

Remuneration Committee
Fabio Corsico (Chairman, indipendent)
Gabriella Porcelli (indipendent)
Elena Vasco (indipendent)

Nominations Committee
Gabriella Porcelli (Chairwoman, indipendent)
Fabio Corsico (indipendent)
Yunpeng He

Related Party Transactions Committee
Elena Vasco (Coordinator indipendent)
Paola Giannotti (indipendent)
Marco Giorgino (indipendent)

Aspects worthy of note include:

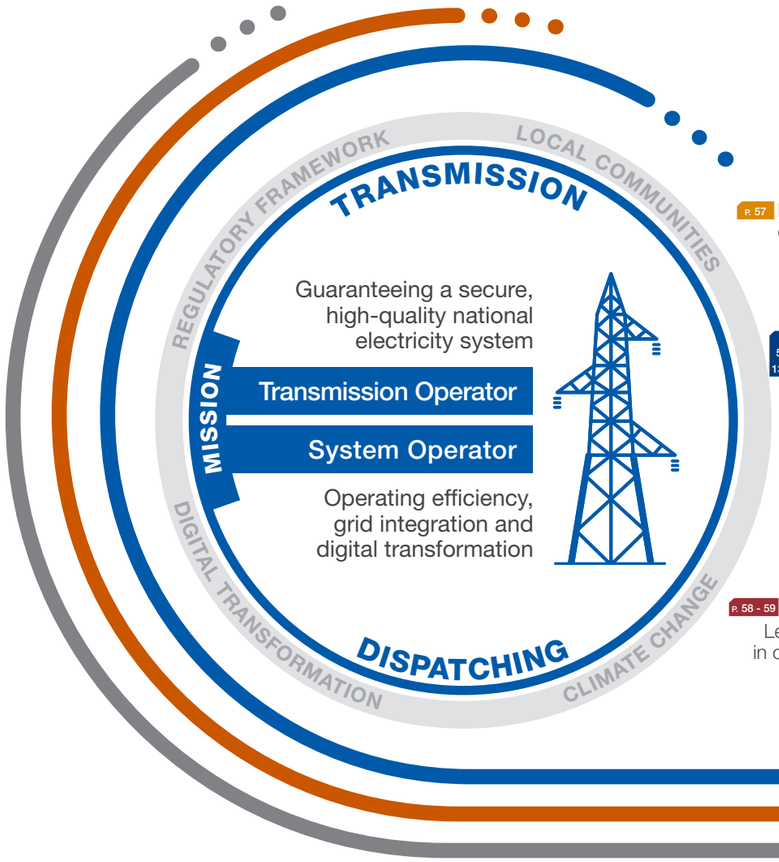
- the high level of attendance of Directors;
- the presence of sustainability goals in the remuneration packages of the Chief Executive Officer and management.

Further information on Terna's corporate governance may be found in the "Report on Corporate Governance and Ownership Structures", which was approved by the Board of Directors on 10 March 2020, and is available in the "Investor Relations" section of Terna's website, and in the "Remuneration Report", also available on Terna's website.

Business model and activities

Terna plays a central role in the energy transition process underway: in a context of radical change with decarbonisation emerging as a global objective, the electricity grid is one of the main enabling factors.

ROLE · ACTIVITIES · ENABLERS · VALUE CREATION · SYSTEM EFFECTS



P. 57 New business opportunities

Non-regulated Activities — 9.2% of revenue

P. 52-56; 130-158 Development and maintenance of the HV grid

Regulated Activities — 89.6% of revenue

Balancing supply and demand and investment in development

International Activities — 1.2% of revenue

P. 58 - 59 Leveraging competencies in overseas markets

P. 170 - 192 **PEOPLE** at the centre of our business

- Competencies
- Integrity and values
- Safety

P. 160 - 167 **INNOVATION** in response to the growing complexity of the system

- Digital solutions
- New technologies
- Open innovation

Shareholder value P. 62-63; 74-98

Security P. 130 - 167

Adequacy P. 130 - 167

Quality of service P. 136 - 137

Resilience P. 154 - 156

Efficiency P. 136-137; 152-158

PROGRESSIVE DECARBONISATION P. 142 - 150

GROWING INTEGRATION OF RENEWABLES P. 131 - 134

CONTRIBUTION TO ACHIEVING THE UN'S SDGs P. 140 - 141

BUSINESS
SUSTAINABILITY
STRATEGY

A key role in the **ENERGY TRANSITION**

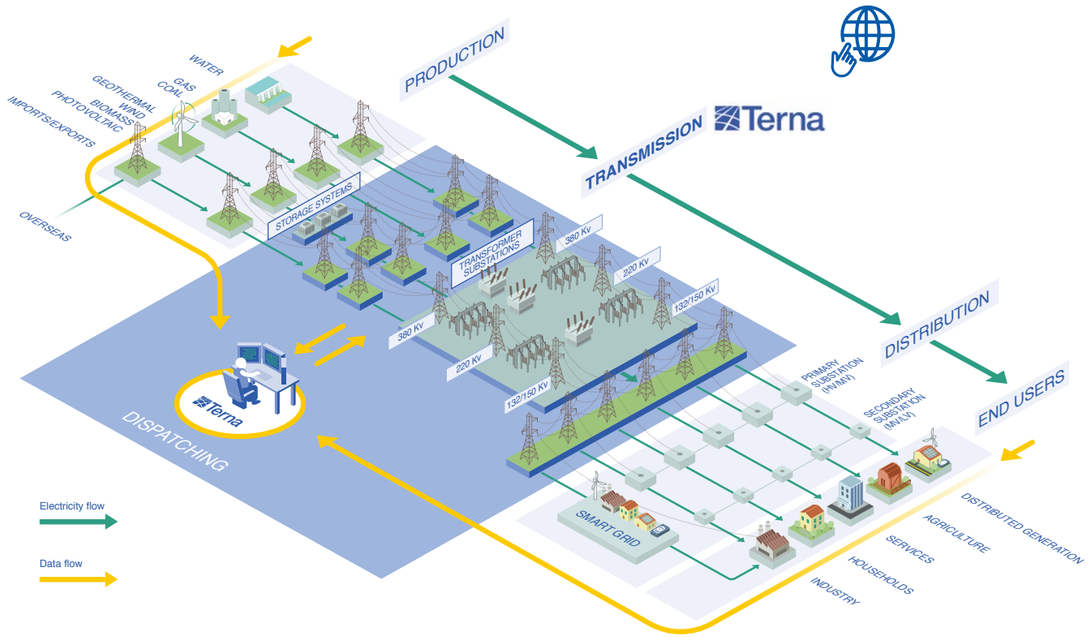
Electricity transmission

The Italian electricity system chain consists of four segments: production, transmission, distribution and the sale of electricity.

This chart illustrates the two main activities carried out by Terna and that make up its core business (Regulated Activities in Italy): transmission, to which most of this Report is dedicated, and dispatching (see page 56).

These activities constitute a vital segment of the electricity service which, while not perceived as such by end users or the customers of companies that distribute and sell electricity, makes Terna ethically responsible towards the whole community. For Terna, this means adopting a sustainable approach to its business, primarily expressed through responsible management of the NTG.

ITALIAN ELECTRICITY SYSTEM CHAIN



TERNA'S INFRASTRUCTURE

888
ELECTRICITY SUBSTATIONS

74,669
KM OF CIRCUITS

67,907
KM OF LINES
95% overhead

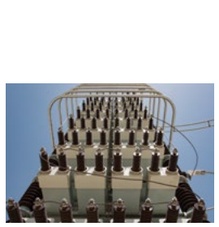
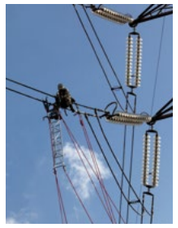
Nº 4
CONTROL CENTRES

736
TRANSFORMERS

5
STORAGE SITES

6,379
BAYS

235,569
LINE SPANS


Electricity transmission depends on the following assets:

Planning

The grid planning process identifies the structural changes needed so that the transmission system can best carry out its role of guaranteeing the secure, cost-effective transport of the power generated by existing and future production centres to the distribution system and load centres.

Planning and development of the NTG takes into account the objectives set out in the Concession Arrangement and the needs emerging as a result of European scenarios and/or national energy policy.

Development of the NTG reflects the need to:

- overcome problems that have come to light during operation of the grid;
- prevent the occurrence of problems linked to the evolution of the related energy scenario, in terms of increased demand for electricity and changes in the mix of generation assets (the phase-out of coal and growing use of renewable energy sources);
- guarantee the integration of European grids so as to drive the process of integrating European markets.

The new works to be carried out are included in the NTG Development Plan, presented to the Ministry for Economic Development for approval, also taking into account the consultation process carried out by ARERA. Terna follows the complex authorisation process.

Implementation of development initiatives

Responsibility for the design and construction of the works included in the Development Plan has been assigned to Terna Rete Italia S.p.A., which decides on the need for external resources and establishes the related solutions and the technical specifications for the components and materials to be used, in compliance with the technical regulations in force.

Terna Rete Italia also defines the engineering standards for plants connected to the grid, above all standards of construction and the performance standards for equipment, machinery and substation and power line components. The construction of new plants is usually outsourced, whilst maintaining strict control over contractors' approaches to environmental and social concerns (see page 190). Development initiatives also include the construction of interconnectors with other countries (see page 149).

>>

Dispatching

Dispatching ensures a balance between the quantity of electricity injected into and withdrawn from the system, between energy supply and demand, round the clock, 365 days a year.

This activity has become more complex over time, partly due to significant growth in non-programmable renewable sources ("NPRS"), requiring greater flexibility, especially in situations where the supply from renewable sources is very high and demand for energy is low.

Infrastructure maintenance and renewal

The maintenance of power lines, electricity substations and storage systems is carried out by Terna Rete Italia, which is also responsible for defining the technical criteria and standards for the maintenance and the renewal of assets (see page 152).

As the TSO, Terna is also responsible for managing producers' registers, handling the data on injections and withdrawals for use in determining the related revenues and costs, and for processing statistics on the Italian electricity industry. This entails having access to confidential data regarding operators in the system, especially electricity producers. To protect this data, Terna has adopted the best data protection practices in order to prevent the information it holds from being accessible or disclosed to unentitled third parties.

Dispatching of electricity

As the Italian System Operator, Terna is responsible for the dispatching service forming part of the National Electricity System.

Dispatching is the set of activities necessary to ensure that there is always a balance between demand for electricity throughout the country (manufacturers, service providers, agriculture and households) and the energy produced by power plants.

The high degree of complexity and coordination necessary to guarantee the correct operation of the system require the presence of a central coordinator, the provider of the dispatching service. This coordinator has control over a high number of both supply-side and demand-side players, and in the last few years also over production from non-programmable renewable sources.

Terna has the key and delicate role of guaranteeing this balance through a high-technology system, using a specific market (the dispatching services market or "MSD"), in which it makes daily purchases of the "services" necessary to constantly ensure the continuity and security of electricity supply.

Dispatching includes planning for the unavailability of the grid and of production plants over different time-scales, forecasting national demand for electricity, comparing demand for consistency with planned production in the free energy market (the Power Exchange and over-the-counter contracts), the acquisition of resources for dispatching and monitoring power transported for all the power lines that make up the grid.

In particular, "real-time" control of the National Electricity System is ensured by the National Control Centre, the nerve centre for Italy's National Electricity System, which coordinates the other centres around the country, monitors the system and dispatches electricity. The Centre intervenes, by issuing instructions to producers and Remote Centres, in order to modify supply and capacity on the grid. To avoid the risk of prolonged power outages, it may also intervene in an emergency to reduce demand.

In 2019, dispatching activities were affected by a number of important events that have had an impact on efficient operation of the grid. Further details are provided on page 138.

Other activities in Italy

The Terna Group pursues business opportunities that go beyond its Regulated Activities and that provide a source of the Group's revenue diversification.

The Italian activities are the responsibility fo Terna Energy Solutions S.r.l., a wholly owned subsidiary of Terna S.p.A. This company's goal is to identify and carry out **projects generated by technological discontinuities and trends in the energy sector**, such as growth in renewable sources, the development of Smart Grids, energy efficiency and le telecommunications. The range of projects is described below[23].

Connectivity

The core Connectivity business involves making Terna's infrastructure available to meet the rapidly increasing need for fast, reliable digital connections.

The offering relates to:

- **The lease of dark fibre** - The use of fibre-optic pairs already installed along Terna's power lines, with connections over shorter distances and offering lower rates of attenuation compared with traditional cables (underground).
- **The lease of power lines** - Thanks to their height and widespread presence throughout the country, pylons are ideal for installing telecommunications antennae in order to expand and strengthen mobile networks and Wi-Fi devices, as well as monitoring systems and sensors.
- **Housing and facilities** - The installation of telecommunications equipment at Terna sites already in operation (cabinets, technology hubs for telecoms networks, data centres), with major benefits in terms of security and the guaranteed redundancy and reliability of connection, both electrical and in fibre optic.

Energy Solutions

The Energy Solutions offering regards:

- **Grid Infrastructure** - The construction and renewal of transmission infrastructure (lines and substations), providing turnkey solutions to meet the needs of both industrial customers and those of new plants using renewable fuels.

Support during the design, construction and operation of assets, if required assuming ownership and responsibility for operation over a defined period (BOOT - Build, Own, Operate, Transfer).

- **Smart Grids:**
  - **Energy efficiency** - Support for businesses in delivering energy efficiency, designing and developing innovative solutions to cut energy costs, optimise production processes and obtain Energy Efficiency Certificates (white certificates).
  - **Microgrids** - Turnkey solutions for businesses looking at the potential to design and integrate renewable plants (photovoltaic and wind) into their production cycles, storage systems (batteries), co-and tri-generation solutions, electricity charging systems (charging hubs) and the related advanced control systems capable of optimising performance.
  - **Services** - Solutions for maintaining and monitoring the solutions designed and implemented (renewable energy plants, storage systems, CHP, etc.) with the aim of preventing, reducing and minimizing the risk of malfunctions and service disruptions.
- **Digital Services** - The operation of plant surveillance and remote grid management systems. Other value added services, some provided over software platforms.

Non-regulated Activities also include the activities of the Tamini Group (see the specific section on page 225) and private interconnector projects (see page 151).

[23] Further information on Non-regulated Activities is provided in the Integrated Report for 2019.

International Activities

The Terna Group's overseas investments are directed towards countries with a stable political and regulatory framework that need to build electricity infrastructure. The aim is to diversify with respect to the activities carried out in Italy, potentially in collaboration with energy operators that have an established overseas presence.

International markets offer opportunities to participate in the development of transmission infrastructure, driven by growing demand for electricity and the opening up of markets to external operators.

Terna's strategic priorities with regard to its International Activities regard:

- **Europe** - To strengthen the Group's presence, monitoring M&A opportunities and developing merchant interconnector projects;
- **Latin America** - To complete ongoing projects in Brazil and Peru and operate the infrastructure built in Brazil and Uruguay, consolidating its position in the countries of interest;
- **Other geographies** - To develop advanced services that take advantage of the technical expertise Terna has acquired in Italy. These initiatives are low-risk and capital-light.

Overseas initiatives of interest to the Terna Group are:

- **Concessions**: this model envisages the acquisition and operation of transmission systems abroad by taking part in international concession and/or secondary market awards, leveraging the core competencies and experience developed in the international arena;
- **Energy solutions**: this includes all high value-added non-traditional activities aimed at exporting the experience Terna has in Italy in the fields of Energy Storage and Smart Solutions;
- **Technical assistance**: this involves the provision of consulting and technical assistance services regarding a TSO's core activities, as well as the definition and implementation of regulatory and market frameworks in the local energy context, with a view to exporting and taking advantage of the distinctive expertise acquired in Italy;
- **Project Management**: Project Management (EPCM) activities enable the Group to leverage its expertise in carrying out projects overseas and managing infrastructure.

Work in progress in South America

Uruguay

Construction of the 213 km Melo-Tacuarembò 500kV transmission line has been completed and the line has been in operation since 24 October 2019.

The line is of major importance for the Uruguayan electricity transmission system, above all as it marks completion of the 500kV ring and will help to increase the production of electricity from renewable sources.

Brazil

Operation and maintenance of the Santa Maria Transmissora de Energia (SMTE) power line in the State of Rio Grande do Sul continued. 77% of the line, which has been in commercial service since 2018, was built using single-pole cable-stayed pylons with a low environmental impact.

The power line located in the Santa Lucia Transmissora de Energia (SLTE) concession in the State of Mato Grosso entered commercial service on 30 April 2019 and the Group is responsible for operation and maintenance. 75% of the line was built using single-pole cable-stayed pylons with a low environmental impact.

In April 2019, the Group signed a preliminary agreement with Construtora Quebec for the acquisition of two new concessions for the construction of power lines in Brazil. This will involve construction of electricity infrastructure in the State of Minas Gerais, with the aim of boosting the efficiency, security and sustainability of local grids and facilitate the full integration of renewable sources.

Acquisition of one of the concessions was completed on 11 November, with the acquisition of the second concession expected to complete in the first quarter of 2020.

Peru

Work, which began in 2017, on construction of 132 km of new 138kV lines between Aguaytìa and Pucallpa is continuing.

The process of acquiring the related easements was substantially completed in 2019 (see page 108) and construction work and the assembly of pylons have begun. The procurement of transmission line materials has been completed.

The project is expected to be completed by the end of 2020.

Revenue

Revenue from Regulated Activities of €2,055.0 million represents approximately 90% of Terna's total revenue. It is determined on the basis of ARERA resolutions establishing the structure and criteria to be used, which the regulator revises each year, if necessary.

Main types of allowed cost

To cover the return on capital (RAB)

Determined on the basis of the Regulated Asset Base (RAB) and the Weighted Average Cost of Capital (WACC). The RAB represents net invested capital for regulatory purposes. It is revalued annually on the basis of data from ISTAT (Italy's Office of National Statistics) on the change in the deflator applied to gross fixed investment and revised on the basis of the performance of investment and disposals. The WACC represents the weighted average cost of equity and debt. The methods of determining and revising the WACC are established by ARERA.

To cover depreciation

Allowed depreciation (calculated on the basis of an asset's useful life for regulatory purposes) is revalued annually based on the change in the deflator applied to gross fixed investment.

To cover operating costs

Allowed costs are determined by ARERA at the beginning of the regulatory period, based on operating costs recognised during the relevant year (which, in the case of the first regulatory sub-period 2016-2019 - NPR1 - was 2014) and increased by any remaining portions of additional efficiencies achieved in the previous two regulatory periods. The resulting amount is revalued annually on the basis of inflation and reduced by an efficiency factor designed to ensure that additional efficiencies are, over time, passed back to end users in full.

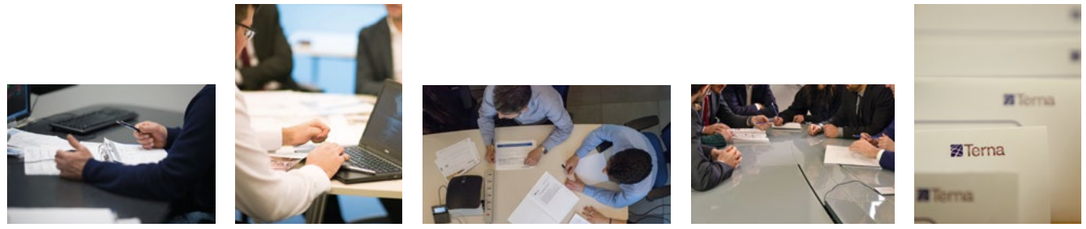
For further details regarding the main types of costs recognised and the fees for transmission and dispatching services, reference should be made to the "Annual Report 2019".

In 2019, the Ministry for Economic Development ("MED") paid Terna €7,342,518 as an advance on grants for projects financed from the National Operational Programme *(Programma Operativo Nazionale* or PON). Terna also received government grants of €5,272,640 to fund required modifications to its infrastructure.

201-4 >

GOVERNMENT GRANTS	2019	2018	2017
Grants related to assets received from the Public Sector*	5,272,640	19,126,545	6,699,644
MED-funded projects*	7,342,518	47,053,291	11,311,452
EU-funded projects*	0	0	76,996,616

** These grants are deducted directly from the carrying amount of the related assets.*



Pass-through items

As part of its dispatching operations, Terna manages the cost and revenue items relating to the purchase and sale of energy from and to operators in the electricity market. These are the so-called "pass-through" items that do not affect the Terna Group's profitability, as the revenues equal the costs.

In 2019, the Terna Group's pass-through revenues and expenses amounted to a total of €5,320.1 million. For further details, reference should be made to the "Annual Report 2019".

Incentive mechanisms

Terna monitors continuity of the service provided through a range of indicators, as defined by ARERA (Resolution 250/04) and in Terna's Grid Code. These continuity indicators are important to the system, as they record the frequency and impact of events on the electricity network and linked to faults or external factors, such as weather events. All of the indicators are shown over a four-year period, in which there were no significant changes, providing confirmation of the high level of quality achieved (see also page 136).

The principal continuity indicators are Regulated Energy Not Supplied (RENS) and Average Service Availability (ASA).

In 2019, the other activities carried out by the Group generated revenue of €211.7 million from Non-regulated Activities (including €110.2 million generated by the Tamini Group) and €28.4 million from International Activities (directly including the margin earned on overseas concessions), which primarily reflect the results generated by assets operated under concession in Brazil, which are now fully operational.

Strategic Plan 2020-2024

The current energy transition[24] is radically changing the electricity system; in response, Terna has to focus on five key dimensions of the system: Security, Adequacy, Quality of service, Resilience and Efficiency. In this regard, the Company has confirmed the strategy set out in the Plan for the period 2019-2023, further stepping up infrastructure investment to meet the new requirements of the electricity system, as part of an integrated approach based on sustainability values, community engagement, skills development and the promotion of innovation.

Consequently, the strategic guidelines for the various areas of the Group have been identified:

- **Regulated Activities**: to give top priority to all the activities that enable Italy to tackle its energy challenges in a safe, efficient and sustainable way by leveraging the specific characteristics of local areas;
- **Non-regulated Activities**: to launch new services to support the energy transition, taking advantage of opportunities beyond our core activities, to be pursued in line with Terna's mission, and if distinctive and/or of high added value;
- **International Activities**: to leverage the core competencies developed in Italy as a TSO through growth opportunities overseas.

Strategy

TO PLAY A LEADING ROLE IN THE SUSTAINABLE ENERGY TRANSITION, BY LEVERAGING OUR DISTINCTIVE INNOVATION CAPABILITIES, COMPETENCIES AND TECHNOLOGIES FOR THE BENEFIT OF ALL STAKEHOLDERS

Pillars

- Stronger core business in Italy
- New services to support the transition
- Overseas use of core competencies

Enablers

- Digital transformation and innovation leadership
- Insourcing of key competencies and flexibility in operations

A key driver of this strategy will be investment in the innovation and digital solutions needed to manage an increasingly complex, integrated and distributed system. Attention will also be paid to the development and insourcing of the strategic skills required to cope with projects of growing size and complexity.

[24] See the paragraph "Opportunities and risks connected with climate change" on page 64 and the section "Electricity service and innovation" on page 129.

The guidelines identified for the Group's various strategic business areas have been divided into appropriate priority actions to be carried out over the life of the Plan.

With reference to **Regulated Activities**, the system needs a new investment drive to respond to developing needs, with a focus on maximising long-term use and sustainability. The role of proactive system operator in defining the grid's structure and in digitally managing assets should also be strengthened by combining Terna's specialist expertise with the experience gained in the most advanced markets. In this regard, Terna is to invest €7.3 billion over the five-year period 2020-2024, making the Company's largest ever investment programme.

Non-regulated Activities will be geared towards supporting the energy transition, with competency-based initiatives focusing on the development of services for corporate customers and on taking advantage of value added market opportunities for traditional and renewable customers.

Asset-based initiatives will, on the other hand, aim to pursue opportunities based on connectivity and computing linked to the Group's infrastructure.

International Activities will focus on the execution of projects in progress and the management of projects in operation, taking advantage of the Group's specialist expertise. Among the priority actions, the main focus will be on selecting international growth opportunities with a high technological content (a key aspect for Terna) and involving potential agreements/partnerships, including the management of assets without the need to tie up large amounts of capital.

Maintenance of a strong capital structure through robust cash generation will also help to support an attractive dividend policy.

	Plan 2020-2024	Plan 2019-2023
Net capex	€7.3 bn	6.2 bn €
RAB (end of Plan)	€19.7 bn	18.5 bn €
CAGR RAB[1]	5%	> 4%
EBITDA	€~ 450 m	> 400 m €
Capex	€[2]~ 150 m	350 m €
EBITDA[3]	€~ 200 m	150 m €
Capex[4]	€~ 900 m	700 m €
CAGR EBITDA	> 4%	> 4%
CAGR EPS	5%	> 3%

- Regulated Activities
- Non-regulated Activities
- International Activities
- Digitalisation and innovation
- Efficiency and value creation

1. Calendar RAB, including work in progress;
2. Capex in execution + to be identified;
3. Includes financial income from Uruguay project;
4. Already included in investment plan for Regulated Activities.

Opportunities and risks connected with climate change

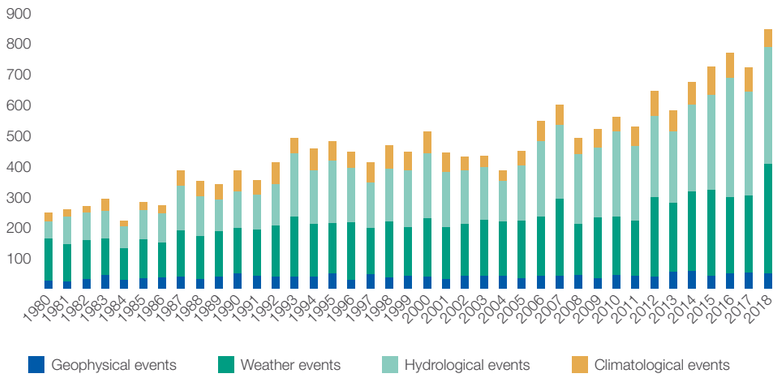
201-2 >

Greenhouse gas emissions represent the most significant impact of human activity on the environment.

It is by now widely accepted among the scientific community that there is a direct link between the growing concentration of greenhouse gases in the atmosphere and progressive changes in the planet's climatic balance. This is resulting in significant rises in temperature, prolonged periods of drought and increasingly frequent and serious extreme climatic events.

These events are capable of having a growing impact on human activity.

MAJOR CLIMATIC EVENTS RECORDED ACROSS THE WORLD BETWEEN 1980 AND 2018



There is therefore a clear need to take action in the sectors that have the greatest impact on the related dynamics, above all the energy sector, which even today remains highly dependent on the exploitation of fossil fuels.

In this context, given the European drive towards decarbonisation and the significant penetration of renewable forms of energy, high-voltage grids have a major role to play in enabling growth in renewable generation capacity.

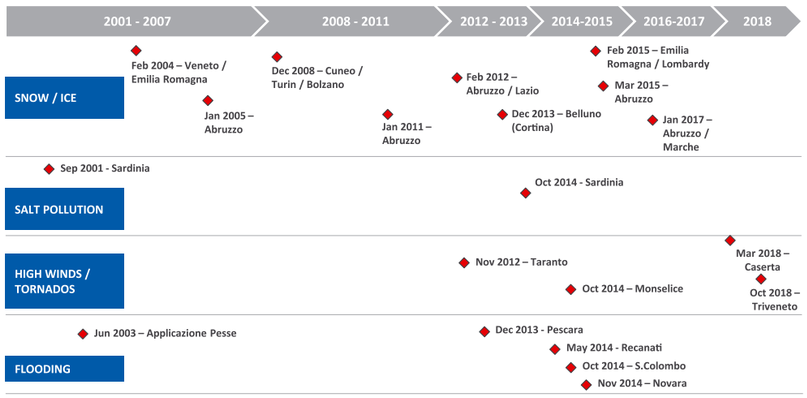
Development of the electricity grid is therefore crucial in accommodating the growing amount of power injected into the grid by renewable energy plants, above all those that use intermittent sources such as wind and photovoltaic.

Moreover, an enabling factor common to all efforts to reduce CO_2 emissions is the progressive electrification of end uses, where the energy carrier assumes a growing importance in meeting our energy needs. This trend will have a particularly significant impact in areas where the effects have so far been minimal, such as the residential sector (e.g. heat pumps, induction cooking), transport (electric and/or hybrid vehicles) and in certain high-temperature industrial processes. The use of electricity, compared with the other types of fuel such as liquid and solid fuels and gas, has major advantages as a means to achieving decarbonisation. It does not produce climate-changing emissions and by its nature is used to transport energy produced from renewable sources.

Terna must respond to the current transformation, whilst continuing to provide a reliable, high-quality service for the community.

The progressive electrification of end uses brings with it a growing exposure to the risks resulting from potential interruptions to the supply of electricity to grid users due to extreme climatic events. The electricity grid is a strategic infrastructure asset that is by its very nature exposed to such events. In Italy, the greatest risks are linked to hydrogeological instability caused by exceptional rainfall, as well as to major ice and snow events and high winds that can cause damage to overhead power lines. In addition, the progressive increase in unusual and extreme heat events brings further problems relating to reduced grid efficiency (closely linked to temperature) and an increase in the risk of fires, which can seriously damage grid infrastructure.

HISTORICAL RECORD OF SEVERE METEOROLOGICAL EVENTS IN ITALY



The extreme meteorological events of recent years and, in particular, the variable and extensive nature of such events, makes it necessary to plan for a grid that is capable of coping with these changes.

The following description of the opportunities and risks connected with climate change is presented in accordance with the recommendations for companies published by the Task Force on Climate-related Financial Disclosures.

Opportunities

The opportunities linked to climate change affect Terna's strategy, with potential economic effects in the medium term, regarding both Regulated and Non-regulated Activities in Italy and overseas. Possible sources of opportunity include:

Products and services

As regards Regulated Activities, both the Development Plan and the Electricity System Security Plan include investments that have assumed greater importance in relation to climate change. In the 2020 Development Plan, components designed to drive the integration of renewable sources and grid resilience form a significant part of the overall Plan. This approach is in line with a regulatory framework that is moving increasingly towards the use of output-based solutions, which could boost Terna's returns in relation to its ability to generate benefits for the system.

Terna's Non-regulated Activities will, in the future, also benefit from new possibilities, relating above all to the identification and development of new energy solutions.

Markets

The scenarios and trends that encourage the development of new opportunities in Italy are of global significance, and therefore also open up new opportunities overseas. See, for example, Terna's international activities in Brazil, Uruguay and Peru[25].

Risks

Transition risks

Political and legal

There are no specific risks with regard to the introduction of a carbon tax as Terna is not subject to legal obligations regarding cuts in emissions and registers low greenhouse gas emissions. The same applies to a likely increase in the carbon price, which would in fact improve the ratio between benefits for the system and Terna's investment costs. An increase in reporting obligations would also not pose any problems for Terna, which has been providing full disclosure on its emissions for some time.

As far as the regulation of service quality is concerned, an incentive-based scheme linked to service continuity, including rewards and penalties, is already in place and this may be affected by extreme weather events. The scheme has generated different outcomes from year to year, ranging from penalties of approximately €15 million to bonuses of around €21 million in the period from 2010 to 2018. Terna's response to this risk is its Resilience Plan, which sets out all the actions taken and the measures adopted by Terna in order to more promptly and effectively respond to adverse events.

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[25] See the paragraph "International Activities" on page 58.

Technological

The growing use of renewable sources and the progressive electrification expected over the coming years mean that investment in the transmission gird is of primary importance, given the role that the grid will play in helping to achieve decarbonisation targets. There are no specific risks linked to the replacement of technology.

Given the new complexities to be dealt with, the drive for constant innovation remains a priority, with continued attention to the most promising technology streams on which to focus both investment and R&D efforts. Terna identifies these technology streams in its Innovation Plan.

Market

No current risks have been noted relating to cost increases deriving from the rise in the price of raw materials due to climate change, which in any case would not to any great extent form part of the risks to which Terna is exposed.

The future performance of electricity consumption in Italy is uncertain, reflecting two contrasting factors: on the one hand, energy efficiency, which is driving down consumption, and, on the other, the progressive switch to electricity in sectors that have typically been tied to the use of fossil fuels, above all transport and heating.

However, even if the amount of electricity transported over the transmission grid were to decline, the regulatory approach to grid assets would normally mitigate the impact volume risk on operators by guaranteeing stable revenues and the recovery of investment costs.

Reputational

The growing complexity of the electricity system and the increased frequency and seriousness of adverse climatic events requires constant monitoring of the system's adequacy and resilience. The occurrence of malfunctions, potentially of a widespread nature, could increase Terna's reputational exposure to public authorities and stakeholders in general.

Physical risks

Acute

In addition to quality of service, the occurrence of extreme climatic events poses a considerable risk to grid infrastructure. Terna has set out its strategy in its Resilience Plan and, with a view to future readiness, its Innovation Plan.

Chronic

Rising temperatures directly interfere with grid operation, as higher temperatures limit the possible amounts of electricity transmission. Other systemic phenomena, such as rising sea levels, do not have a direct impact.

Main economic impacts

201-1 >

Value added[26]

Value added measures the value created by an enterprise, but also by an entire economy, over a certain period, usually a year. In corporate accounting terms, value added is calculated by subtracting the costs of purchasing the intermediate goods and services used in operations from the value of production (revenue attributable to the goods and services produced during the year). These costs do not include personnel expenses, which instead form part of the value added by the enterprise to the intermediate goods and services as a result of its operations. The difference between revenue generated by the sale of the final product and the cost of the raw materials (and the related support services) is the value added, which, in addition to personnel expenses, also includes any profit and the share of income used to pay the interest on any debt and income taxes.

DETERMINATION AND REDISTRIBUTION OF VALUE ADDED [(1)]

	UNIT	2019	2018	2017	CHANGE 19-18	CHANGE % 19-18
A - Remuneration of employees	€	334,976,124	313,038,619	322,058,429	21,937,505	7
B - Payments to the government	€	310,119,263	302,842,820	301,533,096	7,276,443	2
C - Payments to credit providers	€	96,611,961	104,044,756	97,746,883	-7,432,795	-7
D - Payments to providers of risk capital [(3)]	€	501,493,004	468,730,134	442,198,240	32,762,870	7
E - Retained by the Company	€	262,448,402	242,888,183	252,011,601	19,560,219	8
TOTAL NET VALUE ADDED	€	**1,505,648,753**	**1,431,544,513**	**1,415,548,249**	**74,104,240**	**5**

* *Amounts relating to the creation and distribution of value added have been taken from the consolidated financial statements prepared in accordance with IFRS/IAS. In particular, the Terna Group has used IFRS/IAS since 2005.*

** *Payments to the providers of risk capital in 2019 regard the interim dividend paid in November 2019 (€169.2 million) and the final dividend that the Board of Directors decided on 10 March 2020 to propose to shareholders at the Annual General Meeting (€332.3 million).*

[26] This section, including the table, shows the values regarding Terna Crna Gora and the Tamini Group.

Taxes paid overseas

With regard to taxes paid overseas by the Group's subsidiaries in 2019, the following should be noted:

Terna

With reference to the activities relating to the Italy-Greece interconnector[27], income taxes totalling €1,922,665 paid in Greece.

Terna Crna Gora

In 2019, the company invested a total of €6,466,283 in Montenegro, linked to supplies and work on construction of the power line, as provided for in the related contracts. Commissioning of the infrastructure (Pole 1 and Pole 2 of the converter station, cable and electrode) was completed and, in December 2019, the interconnector entered commercial service. In terms of operating performance in 2019, the company did not generate revenue and recorded a loss of €591,200; as a result, no income tax was paid to the State of Montenegro on Montenegrin territory. As regards other forms of taxation, in 2019 the company paid property taxes totalling €29,531 (including €26,201 on land it owns in the municipality of Kotor and the remainder on the property used as its registered office, located in the municipality of Podgorica).

Tamini Group

Approximately €744,151 was paid, primarily including taxes on services and withholding tax.

Terna Chile

The Group's Chilean subsidiary paid municipal tax of 4,253,444 Chilean pesos.

Difebal S.A.

The company paid 9,801,702 Uruguayan pesos in tax, primarily in the form of value added tax of 838,013 Uruguayan pesos, income tax on non-residents of 5,843,461 Uruguayan pesos and personal income tax of 3,099,121 Uruguayan pesos.

Terna Peru

The company paid value added tax of US$1,536,017 and income tax on non-residents of US$5,712.

Brazil

The Brazilian subsidiaries, Santa Maria Transmissora de Energia (SMTE), in the state of Rio Grande do Sul, and Santa Lucia Transmissora de Energia (SLTE), in the state of Mato Grosso, paid total income tax of 9,735,725 Brazilian reals in 2019, in addition to financial transaction tax totalling 2,110,381 Brazilian reals.

[27] Terna's presence in Greece consists of a series of plants and infrastructure assets that provide the DC interconnection between the Italian and Greek electricity systems (the section of submarine cable in Greek territorial waters, as well as the terrestrial connection from the terminal for the Greek cable to the Arachtos substation, which is also owned by Terna). As there is a production facility in Greece, a permanent company (or branch) has been established in that country.

Procurement

As well as providing a service of general importance, Terna's activities help to generate downstream supply chain activity, creating significant economic value and social benefits.

In 2019, total expenditure on the procurement of services, supplies and works amounted to over €1,484[28] million, spread across 2,251 suppliers contracted during the year. In terms of a breakdown of procurement by origin, 88% of the Group's suppliers are Italian and the remaining 12% are overseas.

Economic impact on the community

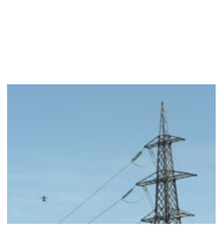
By developing the electricity network, Terna provides a strategic service that contributes towards Italy's economic growth.

The development of interconnections between grids in neighbouring countries facilitates the importation of electricity at competitive prices compared with domestic production, enables additional power reserves, and ensures greater energy market competition. Reducing grid congestion improves the exploitation of power generation resources to meet demand and enables the use of more competitive plants, with positive impacts on competition in the power generation segment and on final prices.

In accordance with the legislative and regulatory framework, all Terna's grid development investments are assessed from a technical and economic point of view by comparing the estimated cost of implementing a project with the related benefits in order to maximise the cost/benefit ratio. As a result, every euro invested by Terna generates, on average, multiple savings for grid uses, as ultimately reflected in the bills paid by the end customer. It is therefore significant that 2018 saw strong growth in Terna's capital expenditure, most of which was earmarked for grid development.

The Terna Group's total investment in 2019 amounted to €1,264.1 million, compared with €1,091.1 million in the previous year, an increase of 15.9% and ahead of target.

[28] The figure refers to the amount ordered during the year. This means the sum of the amounts allocated for all contracts (works, supplies and services) signed during the year, net of options (amounting to approximately €694 million). An option is a provision added to supply contracts, clearly, precisely and unequivocally granting the contracting entity the right to increase the value of the contract in return for an increase in the contracted quantity or volume, subject to the same terms and conditions. Once introduced into the contract, such an option, though not constituting the assumption of an obligation on the part of the contracting entity, is included in the calculation of the overall amount.





INVESTMENT - TERNA GROUP

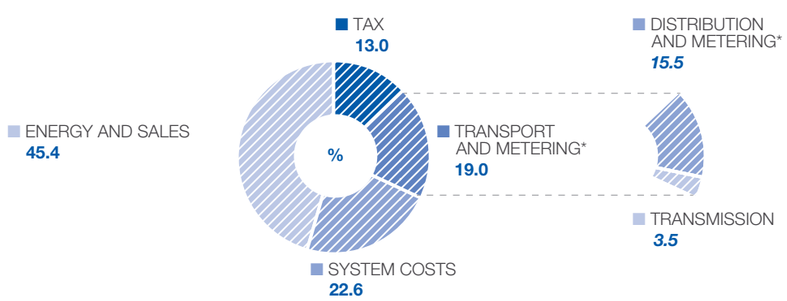
(€M)	2019	2018	2017
Total investment	**1,264.1**	**1,091.1**	**1,033.9**

Transmission costs in end users' bills

On the basis of data published by ARERA, the estimated portion of a typical electricity bill for domestic use[29], covering the cost of the transmission service in 2019 is approximately 3.5%.

Compared with the annual average cost to the typical domestic user, estimated at approximately €560 in 2019, the portion of the cost per household that pays for the transmission service is approximately €20 a year.

COMPOSITION OF A TYPICAL DOMESTIC USER'S BILL - AVERAGE % IN 2019



** Source: Terna, based on ARERA data.*

[29] Household with 3 kW of subscribed demand and annual consumption of 2,700 kWh.

Sustainability is a growth lever that facilitates the achievement of strategic goals by carefully managing the environmental and social aspects of the business.

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4

Responsible business management

In brief

A sustainable approach to business coincides with the knowledge that we not only have an obligation to our shareholders, but also to all our other stakeholders and the wider community.

This commitment cuts across all Terna's activities and has led to the adoption of management policies and systems designed to ensure that our businesses are managed in a responsible manner[30].

Constant attention to these aspects (ESG - Environmental, Social, Governance), the conduct of audits and the definition of targets have resulted in performances that have been acknowledged by the leading sustainability rating agencies, who include Terna in the main stock exchange sustainability indices[31].

This section deals with the main sustainability governance tools used by Terna and the related objectives and targets, divided into four areas: human resources; stakeholders and local communities; integrity, responsibility and transparency; and environment. These have then been taken into account in drawing up the Strategic Plan 2020-2024[32]. This section also provides information on the actions taken and the results achieved with regard to compliance, integrity and efforts to combat corruption[33], respect for human rights[34] and management of the supply chain[35].

HIGHLIGHTS:

For the second year running, **Terna** has been named **Industry Leader** in the "Sector Utilities" of the **Dow Jones Sustainability Index**

Terna is included in the **BIT-Business Index** on **Transparency** published by **Transparency International Italy**

94% of suppliers that carry out contract work are ISO 14001 and OHSAS 18001 certified

[30] See the paragraph "Sustainability governance" on page 75.
[31] See the paragraph "Sustainability indices" on page 79.
[32] See the paragraph "Sustainability objectives and targets" on page 77.
[33] See the paragraph "Compliance, integrity and the prevention of corruption" on page 83.
[34] See the paragraph "Respect for human rights" on page 90.
[35] See the paragraph "Supply chain sustainability" on page 92.

Sustainability governance

By adopting a sustainability approach to business, Terna is able to leverage the creation of value in the medium to long term, in line with the objectives of the Strategic Plan, and by monitoring environmental and social risks associated with the Group's activities, it helps the business to grow.

Terna's sustainability topics and policies are managed in accordance with a well-organised governance system that includes:

Audit, Risk, Corporate Governance and Sustainability Committee

This Committee is composed of independent members of the Board of Directors tasked to support the Board in assessing and making decisions on the Internal Audit and Risk Management System (IARMS). Since January 2016, the Committee's tasks have also included sustainability topics such as policies, objectives, the Sustainability Report (which, from the 2017 reporting year, coincides with the Non-Financial Statement), and the monitoring of sustainability indicators.

"Sustainability" unit

This unit, which is part of the External Relations and Sustainability department, in collaboration with all the departments concerned, helps to define and disseminate the Group's sustainability objectives in ethical, social, environmental and governance areas.

Preparation of the Sustainability Report is also assisted by the SDM (Sustainability Data Manager), a dedicated non-financial data management software application.

With regard to the prevention of reputational risk, the unit monitors the risks relating to sustainability topics through analysis by the leading rating agencies (for example, SAM, Vigeo Eiris), which periodically assess the Group's ESG performance.

In 2019, Terna's presence was confirmed in all the leading international sustainability indices (details provided on page 79).

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Integrated Management System

The Integrated Management System is the tool that - via certified management systems - optimises coordination of all the departments responsible for governing business processes. It is also an important risk management tool because it ensures the effectiveness and efficiency of systems and highlights potential risks in the areas under observation.

The Integrated Management System covers all the Italian and international activities of Terna S.p.A., and its subsidiaries, Terna Plus S.r.l., Terna Rete Italia S.p.A., Terna Energy Solutions S.r.l. and Terna Crna Gora d.o.o. It does not include Tamini Group companies, which have their own quality, environmental and safety certifications, and the companies operating in South America.

In 2019, the Terna Group obtained certification of its Occupational Health and Safety Management System in accordance with the new ISO 45001:2018 standard, ahead of the deadline scheduled for 2021[36].

In addition to maintaining the two accreditations and eight certifications previously obtained for nine Management Systems, the Terna Group has extended the scope of ISO 14001:2015, BS OHSAS 18001:2007, ISO 45001:2018, ISO 50001:2011 and ISO 37001:2016 certification to include Terna Energy Solutions S.r.l..

TERNA GROUP CERTIFICATIONS AND ACCREDITATIONS

TYPE	SCOPE	YEAR OF 1ST ISSUE	YEAR OF RELEASE	YEAR OF EXPIRY
ISO 9001:2015	Terna Group (*) (**)	2001	2019	2022
ISO 14001:2015	Terna Group (*)	2007	2019	2022
BS OHSAS 18001:2007	Terna Group (*)	2007	2019	2022
UNI CEI EN ISO 50001:2011	Terna Group (*) (**)	2015	2018	2021
ISO 55001:2015	Terna S.p.A., Terna Rete Italia S.p.A.	2018	2018	2021
ISO 9001:2015	Tamini Group	1993	2018	2021
ISO 14001:2015	Tamini Group plants at Legnano (MI), Valdagno (VI) and Ospitaletto (BS)	2015	2018	2021
BS OHSAS 18001:2007	Tamini Group	2015	2018	2021
ISO 27001:2013	Terna S.p.A. only for Market Monitoring Code applications	2011	2018	2020
ISO/IEC 17025:2005	Terna Rete Italia S.p.A. for multi-site test laboratories in Viverone (BI), Civitavecchia (RM) and Frattamaggiore (NA)	2014	2017	2022
ISO/IEC 17025:2005	Terna Rete Italia S.p.A. for calibration laboratories in Florence, Turin and Cagliari	2017	2017	2021
ISO 37001:2016	Terna Group (*)	2017	2019	2022
ISO 45001:2018	Terna Group (*) (**)	2019	2019	2022

(*) Applies to the companies Terna S.p.A., Terna Plus S.r.l. and Terna Rete Italia S.p.A.
(**) Also applied to Terna Energy Solutions S.r.l.

Terna Rete Italia S.p.A. has also implemented a “Management System for the Prevention of Major Accidents” in accordance with the provisions of Legislative Decree 105/15 (the “Seveso Directive”).

[36] This certification will coexist with BS OHSAS18001 due to the exemptions it provides with respect to art. 30 of Legislative Decree 81/08.

Sustainability objectives and targets

During 2019, the state of progress of the 120 sustainability initiatives included in the Strategic Plan 2019-2023 was monitored.

The results relating to the 2019 targets included in the Strategic Plan 2019-2023 are shown in the table below.

TARGETS AND RESULTS 2019

PILLAR	KPI	2019 TARGET	2019 RESULT
HUMAN RESOURCES	Zero fatal accidents (Terna staff)	0	0
	Safety indicator*	≤ 1	1.17
	Infrastructure Unit personnel involved in the "Zero Accident" Training Plan (%) - From 2019	50%	87%
	Number of people trained in digital skills (cumulative)	450	882
	Staff with performance evaluation (%)	70%	75%
STAKEHOLDERS AND LOCAL COMMUNITIES	Change in the level of local stakeholders' satisfaction (%)	+15%	+17.9%
INTEGRITY, RESPONSIBILITY AND TRANSPARENCY	ISO 14001 and OHSAS 18001 certified suppliers in contract work areas (%)	91%	94%
ENVIRONMENT	Km of overhead lines removed/year	125	179
	Km of new underground and submarine lines	46	144
	SF_6 leakage rate (%)	0.47	0.40

** The Safety Indicator is the ratio between the weighted injury rate (weighting: 30%) and lost day rate (weighting: 70%) for the target year and that for previous three-year period.*

During the last quarter of 2019, the sustainability objectives were updated for the strategic timeframe 2020-2024, whilst maintaining, in line with the previous edition, the approach based on four areas: Human resources; Stakeholders and local communities; Integrity, responsibility and transparency; and Environment. They have been broken down into 14 objectives.

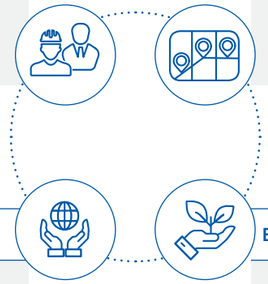
SUSTAINABILITY OBJECTIVES IN THE STRATEGIC PLAN 2020-2024

HUMAN RESOURCES

1. Health and safety
2. Skills development
3. People for Performance
4. Welfare and work-life balance

STAKEHOLDERS AND LOCAL COMMUNITIES

5. Local community engagement
6. Systematic stakeholder engagement
7. Social responsibility initiatives



INTEGRITY, RESPONSIBILITY AND TRANSPARENCY

8. Measurement of the impacts
9. Sustainable supply chain
10. Sustainability culture
11. Codes of conduct and sustainability culture

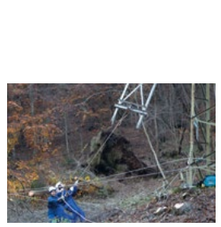
ENVIRONMENT

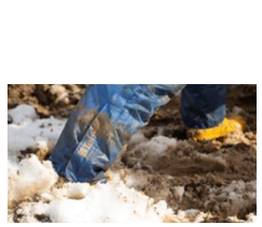
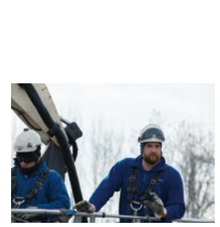
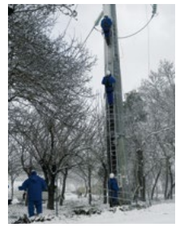
12. Transmission impacts
13. Reduction in CO_2 emissions
14. Environmental footprint

[Priority goal]

The main objectives for the period 2020-2024 and for 2020 are set out in the sections on “Responsible business management” (page 73), “Stakeholder engagement” (page 101), “People” (page 169) and “Environment” (page 195), which also show the results achieved in 2019 measured against previous objectives.

Finally, it should be noted that Terna’s ranking in the sectoral classification drawn up by SAM for the Dow Jones Sustainability Index, which comprises a brief external assessment of the Group’s sustainability performance, has constituted a target included in the Long-Term Incentive (LTI) plan for the Chief Executive Officer and other Group managers (see the “Remuneration Report”) since 2016.



Sustainability indices

Terna’s commitment to improving its ESG (Environmental, Social and Governance) performance is reflected positively in the sustainability ratings assigned by specialist agencies, in the Company’s inclusion in the leading stock exchange sustainability indices and in the appreciation shown by socially responsible investors.

Terna continued to be included in all the leading international stock exchange sustainability indices where it was already present.

Terna’s inclusion in sustainability indices (at 31 december 2019)

	DATE OF FIRST INCLUSION
Bloomberg Gender Equality Index An international index that measures companies’ performance regarding gender equality issues and the quality and transparency of their public reporting.	2019
Dow Jones Sustainability Index The DJSI indices select the companies with the best sustainability performances from among those with the highest capitalisation (the top 300 out of 2,500 companies around the world for the World Index) based on assessments carried out by the Swiss agency, SAM.	2009
ECPI This index was created by ECPI - an Italian agency founded in 1997 which specialises in ratings, sustainability indices and research to incorporate non-financial information into investment processes - based on its own analysis of European companies’ sustainability performances.	2007
Ethibel Sustainability Index-ESI The indices are calculated on the basis of ratings produced by Vigeo Eiris, which, as an initial population, include the approximately 10,000 ratings that are contained in the Russell Global Index. Inclusion is subject to the positive opinion of the Ethibel Forum, a panel of independent experts on the various aspects of sustainability.	2009
Euronext Vigeo Developed by the Vigeo Eiris rating agency, these indices are based on a population of companies listed in North American, Asian and European markets and included in the STOXX® 1800 list. Vigeo Eiris’s ESG indices are drawn up on the basis of a methodology including over 330 indicators and 38 sustainability criteria.	2012

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	FTSE ECPI
2010	Introduced in 2010, these are the sole sustainability indices comprising a selection of companies listed only on the Italian Stock Exchange, based on analysis by the company, ECPI.
	FTSE4Good
2005	The FTSE4Good indices group together the best companies in terms of sustainability performance based on analyses carried out by Evalueserve. The index is reviewed twice a year, in March and September.
	MSCI Global Sustainability
2007	MSCI has integrated the original KLD indices - among the first to track companies' non-financial performance, and which are still one of the most accredited benchmarks in the United States - with other sustainability indices.
	STOXX® ESG
2011	Launched in 2011, these indices are based on assessments made by the Sustainalytics rating agency and select the best shares in terms of ESG performance (around 350) from the 1,800 in the STOXX® Global general index. Admission to the Global ESG Leaders Index, requires inclusion in at least one of the three specialist indices (Global Environmental Leaders, Global Social Leaders and Global Governance Leaders). Terna is the only Italian utility company to be included in all three of them.
	STOXX® Low Carbon
2016	Launched in February 2016, the STOXX® Low Carbon Indices aim to provide a selection of companies with low CO_2 emissions. The selection of companies is based on data gathered by the CDP (Carbon Disclosure Project). The components of the indices are selected from the STOXX® Global 1800 list based on their carbon intensity (Scope 1 and Scope 2 of the GHG Protocol), based on the ratio of emissions to revenue.
	United Nations Global Compact - "GC100"
2013	Established in 2013 by the United Nations Global Compact in collaboration with the research company, Sustainalytics, this index encompasses the 100 companies that have distinguished themselves at global level, in terms of both their attention to sustainability issues and their financial performance.

In September, on the occasion of the annual review conducted by the Swiss sustainability rating agency SAM, Terna's presence in the Dow Jones Sustainability Index (World and Europe) was confirmed and, for the second consecutive year, the Company was named **Industry Leader in the Electric Utilities sector.**

In January 2020, this result led to the inclusion of Terna - the only electric utility in the world to receive such an honour - in the Gold Class of SAM's "Sustainability Yearbook 2020", a leading international publication focusing on corporate sustainability issues and performance.

Terna is the world's Electric Utilities "Industry Leader" in the Dow Jones Sustainability Index

Based on assessments carried out by SAM, which each year decides on inclusion in the Dow Jones Sustainability Index, Terna was, for the second consecutive year, ranked number one in the world ("Industry Leader") in the Electric Utilities sector for its sustainability performance.

Confirmed for the 11th consecutive year in the index, Terna achieved an overall score of 90/100 (sector average: 45/100), ranking ahead of all the 77 companies assessed in the Electric Utilities sector.

The first place was confirmed by 9 of the 24 assessment criteria applicable to the Company. Terna came first in the economic criteria for Materiality, Code of Business Conduct, and Innovation Management and Privacy Protection (new criterion included this year; in the environmental criteria for Environmental Reporting, Biodiversity, and Transmission and Distribution; and in the social criteria for Social Reporting, Corporate Citizenship and Philanthropy.

In the last five years, no company in the sector has ever ranked first for two consecutive years.

Finally, Terna was selected in a number of "investment registers" (e.g. the Ethibel Register) that are developed using selective sustainability criteria, which - especially when public - are a reference point for investors who pay attention to ESG performance.

Terna takes out a second line of credit linked to sustainability indices

Terna has confirmed its strong commitment to pursuing a model aimed at consolidating sustainability as a strategic lever for the creation of value for all its stakeholders.

After the first transaction in September 2018 (see page 64 of the Sustainability Report for 2018), Terna took out a second line of credit (ESG linked back-up Revolving Credit Facility), totalling €1.5 billion, with a pool of banks consisting of Banca IMI, BNP Paribas and UniCredit as Bookrunner and Joint Mandated Lead Arranger, and Santander and SMBC as Joint Mandated Lead Arranger. BNP Paribas worked in partnership with Terna in the role of Sustainability Coordinator.

At the same time, the Company cancelled two back-up lines of credit totalling €1.3 billion, falling due on 18 December 2020 and 26 July 2021.

With this new 5-year revolving credit facility, Terna is strengthening the integration of sustainability objectives into the Company's business strategy via an incentive-based mechanism linked to the achievement of specific environmental, social and governance objectives. The amount available will be used for ordinary corporate requirements. The interest rate is indexed to EURIBOR, plus an initial margin of 0.65% (ranging between a minimum of 0.60% and a maximum of 1.45% depending on Terna's ESG results).

Networking activities

Terna is present and active, sometimes in positions of leadership, in the principal national and international trade associations that focus on sustainability issues.

Anima per il sociale nei valori dell'impresa

A non-profit association that brings together managers and companies who share the desire to spread an entrepreneurial culture in their local areas, combining profit with the creation of wellbeing for the community. Terna has been a member of the association since 2010.

CSR Manager Network

A key association for professionals who deal with sustainability and corporate social responsibility issues, including company managers, consultants and researchers.

Sustainable Development Foundation

An organisation whose primary activity is investigating sustainable development issues - from a cultural and technical point of view - via research, seminars and meetings. Terna has been a member of the organisation since 2011.

GEO - The Green Economy Observatory

The Observatory set up by IEFE - Bocconi University which, via research and study, aims to explore key topics for debate in relation to the green economy through dialogue, discussion and collaboration with institutions and businesses.

Global Compact

Terna's membership of the Global Compact involves a presence at both international and local level. Terna has had a place on the Italian network's Steering Committee since 2011 and is a founding member of the Global Compact Network Italy, which was established in 2013.

Kyoto Club

A non-profit organisation made up of companies, bodies, associations and local government authorities that are committed to achieving the targets for reducing greenhouse gas emissions set by the Kyoto Protocol and to promoting awareness-raising, information and training initiatives in the fields of energy efficiency, use of renewables, and sustainable mobility.

Transparency International Italy

The Italian branch of the international organisation whose aim is to combat corruption (also see page 84).

Compliance, integrity
and prevention of corruption

Legality and honesty are two of the general principles on which Terna's Code of Ethics and the conduct of its business are based.

Compliance with legislation

< 419-1

Compliance with the law is the starting point for any voluntary improvement initiative. A summary of administrative or judicial sanctions and any significant court judgements regarding Terna is provided below. Also taking into account the indicators contained in the GRI Standards, Terna's compliance performance is illustrated below:

- No significant procedures of an administrative or judicial nature, resulting in final judgements or in fines or court injunctions (e.g. prohibitions), were registered in 2019 or in the previous two years, nor did any of its employees receive criminal convictions (full compliance with regard to both environmental and socio-economic matters).
- In particular, the accounting records for 2019 do not reveal any pecuniary sanctions of an administrative nature, fines or penalties in excess of €10,000 relating to environmental matters. With reference to the previous two-year period, it should be noted that in 2018 Terna Rete Italia S.p.A. registered a payment of €12,091. This amount is connected with the penalty issued by the Municipality of Pegognaga (MN) for violation of the municipal regulations regarding the protection of urban and suburban green spaces.

< 307-1

- There were no legal proceedings pending against Terna in relation to corruption, antitrust or monopoly practices, nor were any court judgements handed down against Terna regarding these matters in 2019 or in the previous two-year period.

< 205-3
< 206-1

- There were no pending criminal proceedings for injuries caused to third parties by any of Terna's assets. There were 2 accidents in 2019 (6 in 2018 and 11 in 2017).

< EU25

- No accidents affecting contractors' employees whilst carrying out work commissioned by Terna were registered, where such accidents gave rise to final court judgements ordering Terna to pay damages or resulted in criminal convictions for Terna's employees.
- There is no record of charges brought, in 2019 or in the previous two-year period, in relation to harassment or occupational injuries affecting employees or former employees, in which Terna's liability was definitively established.

205-1 >

Prevention of corruption

The values underpinning Terna's fight against corruption are contained in the Code of Ethics and the tenth principle[37] of the Global Compact.

In 2019, Terna actively participated in initiatives promoted by Transparency International, the world's largest organisation focused on preventing and combating corruption. This has included helping to spread awareness and engaging in communication campaigns, and the adoption of initiatives designed to combat the phenomenon.

Terna listed in the Business Index on Transparency (BIT) of Transparency International Italy

Terna has been included in the Business Index on Transparency (BIT), the index promoted by Transparency International Italy, which assesses the level of transparency of Italy's largest companies regarding issues relating to anti-corruption, integrity and the influence of the private sector on politics.

Transparency International Italy examined 100 large Italian companies and carried out an assessment in descending order from "A" to "E" regarding the Financing of Politics, Lobbying and Revolving Door categories.

The award highlights the attention Terna pays to this issue and confirms the Company's due commitment to sustainability and to maintaining ISO 37001 (anti-corruption management system) certification.

Since 2015, Terna has published "Transparent and Open Construction Sites", a web space that can be accessed from any device. Since the beginning of the year, this has handled a total of 535 construction sites, 283 projects, 866 contracts and 628 suppliers (201 contractors and 427 subcontractors).

In January 2017, Terna was the first Italian company to obtain 37001 certification for its anti-bribery management system, which covers the Parent Company as well as Terna Rete Italia and Terna Plus for all the Italian operations. As part of this system, 33% of business processes were subject to Risk Assessment in 2019; the cumulative figure for 2018/2019 is more than 57%.

[37] "Businesses should work against corruption in all its forms, including extortion and bribery."

In November 2017, the Board of Directors approved the Global Compliance Programme[38] and the Anti-corruption Guidelines, which are applicable to all the Group's Italian and overseas companies subject to prior approval from their respective Boards of Directors, in line with international best practices that promote a "top-down" approach. The Guidelines contain standards of conduct that all recipients are required to observe concerning, for example, the provision of gifts and donations and the related records, sponsorship and charitable activities, the prohibition of facilitating payments, political contributions and compliance with the Company's obligations regarding training, information and information flows.

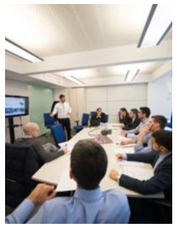
Overall, the Terna Group has adopted three approaches to preventing corruption: its 231 Organisational Model, Fraud Management and Awareness-raising.

In 2016, Terna adopted a Whistleblowing Policy[39] to manage reports, by employees, of violations of the Terna Group's internal control and risk management system. The Guidelines set out the organisational arrangements for handling such reports and establishes the various responsibilities at each stage of the process. The policy also covers all aspects of security, above all regarding protection of the anonymity of the whistleblower, but also that of the accused.

In addition, in line with best national and international practices and existing legislation, Terna has put in place specific communication channels, including the web portal, "The whistleblowing procedure", which may be used by all Group companies, and also enables management of anonymous reports and/or reports received from other offline channels.

[38] The Global Compliance Program is a monitoring tool for the Group's overseas companies aimed at preventing the commission of crimes under foreign law (accounting offences, terrorist financing, money laundering, copyright infringement offences, workplace health and safety offences), and to protect the individual subsidiaries and the holding company from the possible attribution of liability for criminal conduct perpetrated by employees or persons acting in their name and/or on their behalf. The GCP was last updated in December 2019, in order to enable the introduction of more monitoring tools at overseas subsidiaries.

[39] The policy was subsequently updated, in line with the provisions of Law 179 of 30 November 2017.



231 Organisational Model

The 231 Organisational Model - which takes its name from Legislative Decree 231 of 8 June 2001 and was adopted by Terna in 2002 - defines rules of conduct and of internal organisation designed to ensure that the Company conducts its business and activities in a fair and transparent manner, with the aim of protecting the Company's position and image and meeting its stakeholders' expectations. In particular, the Model sets out rules to prevent various types of offence from being committed, some related to corruption and some to other concerns such as the environment and human rights.

In its current form, the Model (latest revision: 29 January 2019) breaks down into 11 sections, 1 general and 10 special sections, subdivided by category of offence. The first section regards the prevention of corruption and is supplemented by compliance rules relating to market abuse.

As provided for in the Model itself, responsibility for ensuring compliance with the Model's provisions, its effectiveness and its revision lies with the Supervisory Board, whose members are appointed by the Board of Directors. Reports of any infringements of the 231 Model may be sent directly to the website at www.terna.it, or the email address OdV_Terna@terna.it, or by ordinary mail.

Training initiatives continued in 2019, as described in the section "Raising staff awareness". Further information regarding Terna's Organisational Model and those of other Group companies may be found in the "Report on Corporate Governance and Ownership Structures".

During 2019, three infringements of the 231 Model were reported.

Fraud management

The Fraud Management team guarantees protection of the Company's assets (tangible and intangible resources, direct and induced benefits) against all illegal acts that may compromise the assets, and protects the Company's reputation and image via fraud prevention and management activities.

In order to identify potential vulnerabilities and eliminate them, Terna uses a method based on systematic analysis of the pre-conditions that may lead to fraudulent events, identifying the critical areas in which such acts are likely to occur, and tracing their causes back to any organisational and operational issues affecting its processes. Alongside this approach, the correct application and revision of existing internal guidelines, procedures and rules is also monitored, with a view to assessing and improving the efficiency of the internal control and risk management system in respect of fraud prevention.

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Raising staff awareness

< 205-2

All new hires attend training courses which, among other things, aim to ensure awareness and dissemination of the rules of conduct and procedures established in order to prevent unlawful behaviour, and to train and inform staff about areas of risk and potential crimes associated with the Company's activities.

In 2019, the long-term Training Plan regarding matters relating to the 231 Organisational Model and efforts to combat corruption, which involved 461 staff (equal to 12% of the total workforce), was completed.

Clarifications regarding the Code of Ethics and the reporting of violations

With regard to compliance with the Code of Ethics, in addition to the Whistleblowing portal, Terna staff who seek clarifications or wish to report an issue may also contact the Ethics Committee or the Audit department.

The Ethics Committee was established to provide internal and external stakeholders with a specific communication channel for matters dealt with in the Code of Ethics. This Committee consists of five members - appointed by the Chief Executive Officer - who are tasked with replying to requests for clarification regarding the Code of Ethics, receiving and examining reports of any violations and, finally, deciding whether or not to instigate an investigation following a report, and providing an appropriate answer.

The Audit department, which is Terna's internal audit unit, is responsible for investigating any reports of violations of the Code of Ethics. The reports gathered by the Ethics Committee and the Audit department are published on page 265).

Risk management

The Terna Group's main business is operated as a legal monopoly, subject to the terms of the government concession and the regulations defined by the Regulatory Authority for Energy, Networks and the Environment (ARERA). This means that regulatory risks and risks that may have an impact not so much on Terna, as on the entire electricity system (for example, power outages), are particularly significant. In this regard, risks that may also have long-term effects, such as those deriving from climate change, are relevant to Terna (see page 64).

Terna has identified the main risks associated with its activities and prepared organisational measures, controls and specific instruments with the aim of reducing them and keeping any effects within acceptable limits.

From an organisational point of view, the Group is structured in such a way as to guarantee management and supervision of all its operations and the risks associated with them, as well as a clear allocation of roles and responsibilities. In particular, in line with the provisions of the Corporate Governance Code for listed companies, which the Group has voluntarily adopted, the Audit and Risk, Corporate Governance and Sustainability Committee (the "Committee"), consisting of independent directors, supports the Board of Directors in making its assessments and taking decisions relating to the Internal Audit and Risk Management System ("IARMS").

The Committee has a direct relationship with the Chief Risk Officer (CRO), who is appointed by the Director that heads the IARMS, with the task of supporting senior management in the definition of risk analysis, management and monitoring policies, and in the effective coordination of the actors involved in the IARMS, in order to maximize its efficiency and reduce duplication of activities. The CRO reports periodically to the Committee on risk management in the Company.

Under the Internal Audit and Risk Management System, the Audit department has the task of verifying that the IARMS is operating smoothly. Audit activities extend to all business processes (including Risk Management), with particular attention paid to the most important processes due to their impact on the Company's value, the degree of risk they pose in respect of achievement of the Company's objectives, or their influence on aspects of broad interest to the Company.

For details of the different types of risk to which the Terna Group is potentially exposed and the related management systems, reference should be made to the section, "Risk management", on page 68 of the Integrated Report for 2019.

Data protection compliance

In 2019, Terna drew up and implemented a structured plan of action, in line with the Company's Privacy Management Model and with the Terna Group's Privacy Regulation Guidelines, in order to ensure compliance with personal data protection legislation, (e.g. European Regulation 679/2016 - GDPR[40], and Legislative Decree 101 of 2018 "Privacy Code").

The main activities carried out by the Data Protection and Privacy department in 2019 include:

- the appointment of external data processors;
- the preparation and update of information on personal data processing;
- the preparation and update of the register of the processing activities carried out in each of the departments within the Terna Group's organisation, via interviews with the Privacy Focal Points, internal personnel who support Terna's Data Protection and Privacy department in meeting the requirements of the GDPR;
- the handling of applications received from individuals who have exercised their right to be forgotten;
- the preparation of joint ownership agreements between Terna S.p.A., Terna Rete Italia S.p.A., Terna Energy Solutions S.r.l. and Terna Plus S.r.l.;
- the launch of assessments of external data transfers to non-EU countries;
- the assessment of video surveillance activities, including fulfilment of the necessary obligations in order to ensure compliance with personal data protection legislation;
- the preparation and update of Guidelines, Operating Instructions and other components of the documentation framework regarding personal data protection and the confidentiality of documents (e.g. the Operating Instructions regarding system administrators, etc.).

In May 2019, Terna appointed a new Data Protection Officer, chosen on the basis of their professional qualities - in particular, specialist knowledge of data protection regulations and practices - and notified the Data Protection Authority of the appointment.

[40] The EU General Data Protection Regulation 2016/679, better known as GDPR, is a European Union regulation regarding the processing of personal data and privacy. It was adopted on 27 April 2016, published in the EU Official Gazette on 4 May 2016, came into force on 24 May of the same year and has been in operation since 25 May 2018.

Respect for human rights

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408-1 >
412-1 >
412-3 >

The Terna Group operates mainly in Italy, where the regulatory framework and the level of civil development largely guarantee respect for human rights, freedom of association and collective bargaining, and therefore it is not crucial for the Company to take specific actions on these issues. Despite this, Terna pays constant attention to respect for human rights[41].

In April 2017, Terna adopted guidelines entitled "Respect for human rights within the Terna Group" in order to implement the recommendations of the guidelines on business and human rights set out in the aforementioned UN Guiding Principles. The guidelines provide for a periodic due diligence process regarding the Group's respect for human rights, taking into account its interaction with all its stakeholders. Particular attention is paid to vulnerable groups and the human rights most pertinent to Terna's activities, such as labour rights (e.g. discrimination, forced and child labour, freedom of labour union association, health and safety). The first due diligence assessment, carried out in 2017, included the phases provided for in the guidelines and described in the following table.

Respect for human rights - due diligence objectives

> Identification of the areas of the Group's activities, including relations with suppliers, joint ventures and business partners, that are potentially exposed to the risk of violating stakeholders' human rights.

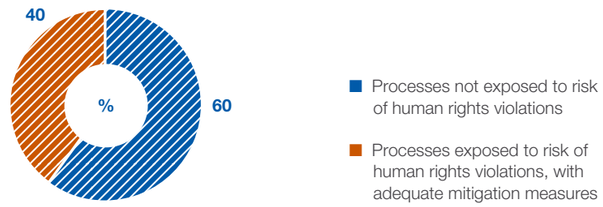
> Identification of existing risk mitigation measures in these areas (e.g. certified management systems, guidelines, operating instructions, contract terms, training and awareness-raising activities).

> Preparation of action plans if such measures are found to be lacking or inadequate.

> Monitoring of the implementation of action plans.

[41] In February 2017, the French rating and sustainability research agency, Vigeo Eiris, announced the results of its study, "The human rights responsibilities of business in a changing world", conducted in over 3,000 companies in 35 countries and 38 sectors, in which Terna was ranked 14th overall, and first in the group of the best 30 Italian companies at global level.

The first due diligence assessment revealed that approximately 60% of the Group's processes are not exposed to the risk of human rights violations; for the remaining 40%, the existing mitigation measures and reporting systems were found to be adequate. In the interests of greater security, an additional investigation was provided for in a very few cases. Finally, the risk of violations was also found to be adequately monitored for suppliers, joint ventures and business partners.



At the end of 2018, the Audit department carried out an assessment to update the map of the business areas exposed to risk, evaluate the design of the planned controls, and verify their actual implementation. During this due diligence procedure, the operational mechanisms for conducting periodic audits were refined. The assessment of the Internal Control System (ICS) and the verification of its effectiveness, widely covered major processes as well as stakeholders and human rights. The analysis carried out showed that the system for monitoring respect for human rights within the map of business areas exposed to risk is satisfactory.

In principle, management responsibility for the Group's human rights rests primarily with the departments responsible for human resources, procurement and security and services, which are tasked with ensuring that contractors and subcontractors respect human rights and labour protections. The Audit department is responsible for overseeing correct application of the rules in the Code of Ethics, while the Sustainability unit monitors developments in external benchmarks (e.g. international conventions).

The Audit Plan for the 2019/2020 period provides for an assessment (scheduled for March 2020) to update the map of the areas of activity exposed to risk, assess the design of the controls envisaged and verify their actual implementation.

In 2014 and 2016, the Audit department carried out two surveys, structured on the basis of the recommendations from the United Nations ("The guiding principles on business and human rights", also known as the "Ruggie Report") to gauge employees' perceptions regarding the application of human rights within the Company and with respect to suppliers.

Supply chain sustainability

204-1 >
308-1 >
308-2 >
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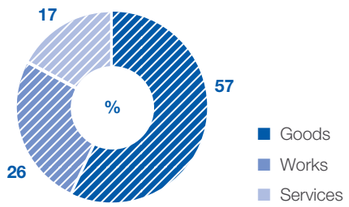
414-2 >

Procurement and suppliers

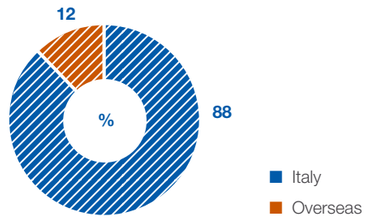
As well as providing a service of general importance, Terna's activities help to generate downstream supply chain activity, creating significant economic value and social benefits.

In 2019, total expenditure on the procurement of services, supplies and works amounted to over €1,484[42] million, spread across 2,251 suppliers contracted during the year.

PROCUREMENT BY CATEGORY



PROCUREMENT BY ORIGIN



The prevalence of national and local suppliers is determined by the specific nature of the business, especially by the need to carry out maintenance operations very swiftly in order to ensure the utmost safety of the system and greater competitiveness in terms of transport costs for heavy and bulky supplies. This also helps to cut the related environmental impacts.

Terna requires suppliers to conduct themselves in a lawful and ethical manner, protecting human and labour rights, health and safety, information security and the environment. These behaviours have been formalised in the "Supplier Code of Conduct"[43] in which each principle is linked to the requirements contained in the qualification process and in Terna's tender and contract documentation. All suppliers are required to contractually commit themselves to comply with the provisions of Terna's Code of Ethics and 231 Model; any non-compliance encountered will result in penalties. Terna's tender procedures include several requirements relating to social (human rights, working conditions) and environmental matters which, for some categories relevant for ESG purposes, must be met from the qualification phase on.

Procurement, which regards activities carried out in relation to Terna's core business - so-called "key supplies" -, and which mainly includes supplies of materials and electrical equipment, contracts for the provision of works and services in the electricity transmission, telecommunications and IT sectors, is governed by the new Procurement Code. This has introduced aspects relating to sustainability in tenders drawn up in accordance with the most economically advantageous tender criterion.

[42] The figure refers to the amount ordered during the year. This means the sum of the amounts allocated for all contracts (works, supplies and services) signed during the year, net of options (amounting to approximately €694 million). An option is a provision added to supply contracts, clearly, precisely and unequivocally granting the contracting entity the right to increase the value of the contract in return for an increase in the contracted quantity or volume, subject to the same terms and conditions. Once introduced into the contract, such an option, though not constituting the assumption of an obligation on the part of the contracting entity, is included in the calculation of the overall amount.

[43] The document is available for download at: http://download.terna.it/terna/0000/0930/50.PDF

The following table shows the suppliers active during year, broken down by type of environmental and social requirements, according to their characteristics.

SUPPLIERS ACTIVE IN 2019 AND APPLICATION OF ENVIRONMENTAL AND SOCIAL REQUIREMENTS

	SUPPLIERS ACTIVE IN 2019				AMOUNT PROCURED FROM SUPPLIERS SUBJECT TO SPECIFIC REQUIREMENTS (% OF RESPECTIVE TOTAL AMOUNT PROCURED)			
	N.	% OF TOTAL	AMOUNT PROCURED (€M)	% OF TOTAL	BASIC REQUIREMENTS [1]	ADDITIONAL SOCIAL AND ENVIRONMENTAL REQUIREMENTS [2]	SOCIAL [3] AND ENVIRONMENTAL QUALIFICATION REQUIREMENTS [4]	COUNTRY RISK ASSESSMENT [5]
Total active suppliers	2,251	100	1,484.5	100	100	94.8	20.8	100
Key suppliers	1,920	85.3	1,408.0	94.8	100	100	21.9	100
Suppliers in categories relevant for ESG purposes	129	5.7	720.3	48.5	100	99.8	41.4	100

[1] *Compliance with the principles and behaviours provided for in Terna's Code of Ethics and 231 Model.*

[2] *Integrity pact (text verified by Transparency Italy), anti-mafia certification, which checks: the application of collective labour agreements, payment of tax and social security contributions, the absence of environmental offences, the absence of serious breaches of labour safety regulations, regularity of employment of legally protected categories, certificate of medical fitness for specific roles issued by the relevant doctor (for works contracts), and the absence of any impediment to the award of public contracts.*

[3] *OHSAS 18001 certified occupational safety management system or similar (required only from the suppliers of specific product categories at the time of qualification).*

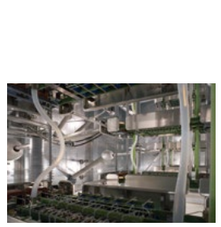
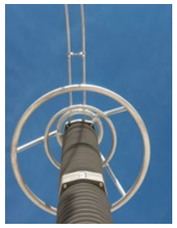
[4] *ISO 14001 certified environmental management system or similar (required only from the suppliers of specific product categories at the time of qualification).*

[5] *Assessment of the risks of corruption and respect for human rights in connection with a supplier's premises.*

The table illustrates the coverage guaranteed by the various initiatives, in terms of percentage of procurement, for significant groups of suppliers active in 2019.

Coverage is 100% or just under for the majority of the social and environmental requirements. Regarding the most stringent social and environmental qualification requirements, the coverage is higher for suppliers included in categories that are relevant for ESG purposes. Such suppliers are periodically identified[44] on the basis of the product categories whose relevance to the business is assessed (the amount supplied, problems for the core business), as well as social aspects (health and safety and working conditions) and environmental aspects (significant environmental impacts in the production chain, relating to use by Terna, at the end of the asset's useful life). Inclusion in this category leads to particular attention being paid during the qualification phase and in the development of technical specifications, as well as a commitment to adopt special precautions regarding categories not subject to qualification. Finally, additional health and safety measures have been introduced for works contracts (see the section "Guaranteeing safety, the environment and human rights at contractors' construction sites" on page 190). The following table refers to new suppliers in 2019.

[44] The matrix for identifying the relevant product categories for ESG purposes was updated in 2017 on the basis of the latest available purchasing data and certain references made public by key stakeholders, such as rating agencies.


NEWLY CONTRACTED SUPPLIERS

	2019
% of new suppliers - checked for basic requirements*	100
% of new suppliers - checked for additional social and environmental requirements**	79

* *Compliance with the principles and behaviours provided for in Terna's Code of Ethics and 231 Model.*

** *Integrity pact (text verified by Transparency Italy), anti-mafia certification, which checks: application of collective labour agreement, payment of tax and social security contributions, absence of environmental offences, absence of serious breaches of labour safety regulations, regularity of employment of legally protected categories, and absence of impediment for undertaking public contracts.*

"SUPPLY CHAIN SUSTAINABILITY" TARGET
KPIS AND TARGETS IN THE STRATEGIC PLAN 2020-2024

KPI	2019 TARGET	2019 RESULT	TARGET 2020	TARGET 2021
ESG CRITERIA IN TENDERS				
Use of ESG criteria in "vegetation management" tenders > €1 million (% of tenders)	100%	100%	100%	100%
Use of ESG criteria in hardware procurement tenders* (% of tenders)	50%	66%	75%	100%

** PCs, monitors, printers, video-conference systems, routers, switchers and servers.*

Procurement portal and supplier qualification portal

The initial encounter between Terna and suppliers (potential or otherwise) takes place on the "Procurement Portal", a dedicated section of the website, www.terna.it, where it is possible to find information about calls for tenders, participate in online tenders and complete the qualification procedure in order to be included in the list of approved suppliers.

In 2019, approximately 1,502 requests for online assistance were received from suppliers, all of which were dealt with within the deadlines set out in the Company's procedures.

With a view to expanding the supplier base, the Procurement and Contracts department carries out scouting activities in the market, including meetings with potential Italian and overseas suppliers. In the case of suppliers who have already been contracted - above all those deemed to be of critical importance to the business[45] - Terna maintains direct contacts in order to manage and acquire greater knowledge of specific issues during the procurement process. In this regard, meetings are periodically organised with qualified companies or trade associations to notify them of any updates to requirements or key issues relating to the ethical conduct expected of them when doing business with Terna.

[45] These are suppliers whose contracts are of high value and who are not replaceable or who provide strategic supplies or works that are specific to the electricity system.

Qualification of suppliers

< 407-1
< 408-1
< 409-1

The majority of the most relevant product groups for the core business are subject to a qualification procedure. This allows the qualified supplier to be included in the list of approved suppliers, having met the regulatory compliance requirements, in line with those set out in the Procurement Code, being in possession of the necessary high-quality technical and organisational expertise and being financially sound.

The entire process is managed via the "Supplier Qualification Portal", thus ensuring an efficient, traceable and transparent process.

In the sectors at greatest risk in terms of sustainability, an adequate level of environmental management and the ability to protect workers' health and safety are also required, both represented by corporate procedures focused on key elements of the international UNI EN ISO14001 and BS OHSAS 18001 standards. In particular, the obligation to obtain certification for "Vegetation management", "Pylon painting" and "HV glass insulators" was introduced, with the aim of extending the obligation to all areas relating to works contracted out by 2020.

"SUPPLY CHAIN SUSTAINABILITY" TARGET
KPIS AND TARGETS IN THE STRATEGIC PLAN 2020-2024

KPI	2019 TARGET	2019 RESULT	TARGET 2020	TARGET 2021	TARGET 2022	TARGET 2023	TARGET 2024
SUPPLIER CERTIFICATIONS							
% of ISO 14001 and OHSAS 18001 certified suppliers in contract work areas	91%	94%	100%	100%	100%	100%	100%

As far as overseas suppliers are concerned, Terna assesses the country risk, namely the possibility of incurring damages if incidents or events occur that may be linked to the economic, social and political environment of the country in which the supplier normally operates. This risk is, for the time being, very limited, given the prevalence of domestic suppliers. However, it could become more significant in view of the expansion of procurement markets and, more generally, Terna's international growth strategy.

Objective elements are used in the analysis and assessment of the most relevant risk factors, which relate to economic and political governance issues in the various countries, and with respect to internationally agreed human rights protocols, including the ratification of UN and ILO conventions, together with the assessments made by the main international non-governmental organisations and the leading rating agencies actively concerned with these issues. As these assessments are regularly updated, they enable the Company to constantly monitor developments in the related environment. In addition to these assessments, restrictive measures are also issued by Italian and European authorities, entailing limitations on the free movement of goods (trade embargoes) or rules of conduct in the case of transactions with countries that have preferential tax treatment (tax havens).

Of the total number of qualified suppliers, 82% have or are acquiring BS OHSAS 18001:2007 safety certification, and 84% have or are acquiring ISO 14001:2004 environmental certification.

ACTIVE QUALIFICATIONS

	2019
Number of active qualifications	508
- of which new qualifications during the year	*68*
Number of qualifications requiring an Environmental and Safety management system	244

Cybersecurity: Terna sets up a specific product category for qualification

The gradual trend towards the digital transformation of business processes is widely referred to in Terna's Strategic Plan, within a context of innovation and development of high-performance technological solutions and projects to cope with the growing complexity of the system. This is accompanied by greater attention to cybersecurity and data protection issues, due to an increase in risks associated with the widespread use of such tools.

Terna is one of the first contracting entities in Italy to have set up a specific cybersecurity product category for qualification, with the aim of ensuring the selection of top-quality providers in a crucial sector for the security of Italy's economic system.

The requirements include high-quality standards in terms of corporate and professional certifications, as well as prior willingness to sign non-disclosure agreements to protect information and highly critical projects. In particular, in addition to ISO 9001 certification, all operators are also required to have ISO/IEC 27001 certification[46]. Finally, Terna requires the adoption of information risk management systems, including in other product categories with a high level of cyber risk (e.g. Industrial IoT).

[46] SO/IEC 27001 is an international standard that defines the requirements for governing an information security management system (SGSI or ISMS-Information Security Management System), including aspects relating to logical, physical and organisational security, with the aim of establishing a complete system to ensure management of the security of information and information systems.

Supplier audits

During the three-year qualification period, Terna checks that suppliers meet the qualification requirements, including the various ESG aspects. In 2019, 766 document audits were carried out.

Terna conducts further checks based on the activities carried out by suppliers and the type of risks assessed as being prevalent in a given category. These include:

- prior checks for applications regarding the award of consulting, professional and IT services contracts, and for awards to previously qualified suppliers;
- on-site checks of qualified/qualifying suppliers. In 2019, 82% of these checks focused on companies belonging to categories that are relevant for ESG purposes.

AUDITS

	2019
Qualification document checks	766
On-site qualification checks	38
including categories relevant for ESG purposes	31

If conduct no longer meets the requirements for qualification, the supplier may receive a warning or be temporarily suspended from the list; in the most serious cases, offenders will be revoked off the list.

MEASURES TAKEN

	2019	2018	2017
Number of suppliers revoked off the list	0	0	0
Number of suppliers suspended	8	2	0
Number of suppliers warned	3	2	0

Since 2016, in addition to the Supplier Qualification Portal, Terna has used a List of Suppliers This integrated environment enables records to be kept and information on selected suppliers in product groups that are not subject to qualification to be screened. This is done with a view to drawing up checklists to identify competitors in the procedures relating to the award of contracts for amounts below EU thresholds.

Equal opportunities in accessing calls for tenders

Access to tender procedures is guaranteed for all eligible companies in accordance with the principle of equal opportunity and is governed by the "Procurement Regulations". These Regulations, which have set guidelines for Terna's procurement activities, were drawn up on the basis of the Procurement Code, which in turn implements the relevant EU legislation.

CONTRACTED SUPPLIERS

	UNIT	2019	2018	2017
Number of contracted suppliers	**no.**	**2,251**	**2,148**	**1,978**
Contract award procedures adopted (% of amounts awarded)				
EU calls for tender	%	78	75	66
Non-EU calls for tender	%	13	11	16
Previously qualified suppliers*	%	8	12	12
One-off contracts**	%	2	2	7

* *Directly assigned professional appointments and/or consulting services.*
** *The "One-off contracts" category includes: sponsorship and donations, fees paid to public entities, trade bodies and contracts awarded to previously qualified suppliers by Terna Plus S.r.l..*

Finally, Terna is keen to reach a settlement in the event of litigation with suppliers.

DISPUTES WITH SUPPLIERS

	2019	2018	2017
Pending	23	29	23
In progress	2	6	4
Settled	8	0	3

5

Stakeholder engagement

Stakeholder relations based on trust and dialogue are key to optimising the way we manage our activities, starting from implementation of the projects provided for in the Development Plan.

>>

In brief

Stakeholder relations taking into account interests and legitimate expectations form an integral part of responsible business management.

The direct influence of stakeholders whose local areas are due to host a power line or an electricity substation is also of particular importance, as this can have an impact on the timing of work to be carried out under the National Transmission Grid Development Plan, the principal operational tool that will enable us to fully deliver the energy transition[47].

Terna further strengthened stakeholder engagement activities in 2019.

In line with the quality principle requiring a ”balanced” representation, as provided for in the “GRI 101 Foundation” standards adopted by Terna in our “Non-financial statement”, and, more generally, with the transparency typical of sustainability reporting, this section includes information on the most difficult cases at local level[48] and, towards the end, on outstanding investigations and litigation[49].

Finally, the section provides information on other categories of stakeholder, above all electricity service operators[50], the media[51], environmental organisations[52] and the community[53]. Terna’s personnel, who are classified as internal stakeholders, are dealt with in the specific section, “People”[54].

HIGHLIGHTS:

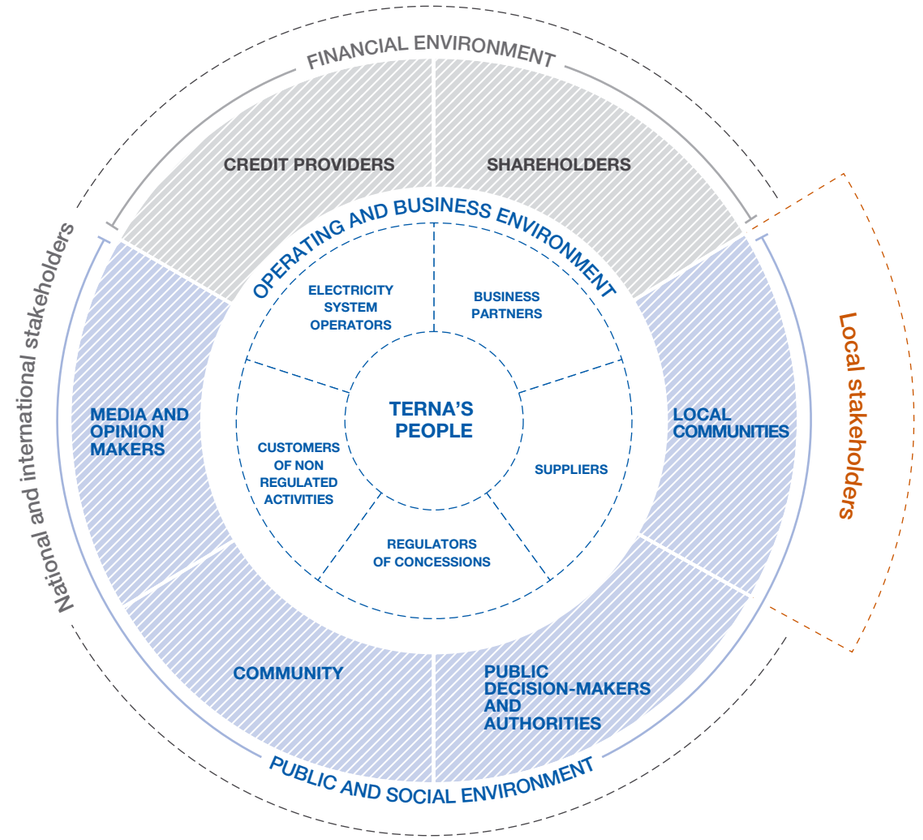
469 meetings with local authorities and **40 public meetings** with citizens

76 plots of land returned to landowners following rationalisation of the electricity grid

71.4% of community **initiatives** are aligned with SDGs 4, 7, 9 and 11

[47] See the paragraph “Dialogue with local communities” on page 105.
[48] See the paragraph “The most difficult cases and shared solutions” on page 108.
[49] See the section “Investigations, litigation and sanctions” on page 126.
[50] See the paragraph “Electricity service operators” on page 113.
[51] See the paragraph “Media and opinion makers” on page 117.
[52] See the paragraph “Relations with environmental organisations” on page 118.
[53] See the paragraph “The community” on page 119.
[54] Page 169.

Stakeholder map



Relations based on reciprocal trust between Terna and its stakeholders are the prerequisite for maintaining and increasing the Group’s relational capital.

Terna's engagement with its stakeholders is based on taking their interests into account and analysing their compatibility with the specific interests of the Company, so as to be able to adopt a coherent and transparent course of conduct.

With this awareness, Terna has drawn up a stakeholder map and built specific engagement programmes to identify actions to be undertaken in order to optimise current engagement methods and listen to the most influential stakeholders on a periodic basis.

The outcomes of this mapping, together with indications of the best engagement techniques and tools to use and the ideal frequency of initiatives in order to successfully manage relations with the different categories, thus avoiding the risk of failing to promptly identify any problems, have been incorporated into specific guidelines (the "Stakeholder engagement model").

The resulting stakeholder map takes into account the reference frameworks of the various categories (financial, public and social, operational and business), making a distinction between national and international stakeholders and local stakeholders affected by the presence of electricity infrastructure or construction projects.

Dialogue with local communities

In line with the recommendations in the Strategic Plan, which focus on the challenges posed by the energy transition and the Company's enabling role within it, and with the resulting need for new electricity infrastructure investment, Terna further stepped up its already intense engagement with stakeholders in 2019.

Engagement with these stakeholders - who are often critical of Terna's initiatives as they see their impact on their local area but not the systemic benefits they bring - is vital for the acceptance and implementation of infrastructure projects.

Local communities

< 413-1

This category includes various kinds of stakeholder who are affected by Terna's activities during all operational phases, from development through to network maintenance. It includes parties who are directly or indirectly affected, but also parties with the power to influence politics and decision-making and local opinion makers.

From the initial planning phase of grid development initiatives, Terna reaches out to local communities in the areas where they will be implemented, involving local authorities (regional and local authorities, park authorities, etc.). For several years, the Company has also reached out to citizens via public meetings called "Terna incontra".

Since 2018, the sharing and listening approach used in relation to the "Terna incontra" meetings has also been applied to engagement with authorities in connection with the Strategic Environmental Assessment (SEA).

During 2019, Terna held a total of 469 meetings with local authorities, involving around 309 bodies, including authorising bodies, local authorities, civil engineering entities, ministries, regional authorities and economic operators, as well as further meetings with 13 associations, 212 citizens and 7 members of parliament.

MEETINGS WITH LOCAL AUTHORITIES - 2019

AREA	MEETINGS	BODIES INVOLVED
North-west	152	127
North-east	112	39
Centre-South Adriatic	95	78
Centre-South Tyrrhenian	110	65

Terna also held 40 public meetings, including 32 “Terna incontra” events, in 11 Italian regions (Piedmont, Lombardy, Veneto, Tuscany, Emilia-Romagna, Campania, Sicily, Basilicata, Abruzzo, Trentino-Alto Adige and Calabria), respectively, in Ponte Gardena, Chiusa, Fortezza, Renon Frazione Auna di Sotto, Bressanone, Tiles, Barbiano, Treviglio, Chiari, Casirate d’Adda, Urago d’Oglio, Malles-Venosta, Curon, Vizzini, Celano, Scafati, Castelnovo, Reggio-Emilia and Sant’Ilario d’Enza, at which the potential locations for 16 Development Plan initiatives were discussed[55].

Effectiveness of “Terna incontra” meetings: 2019

During the “Terna incontra” meetings at Rimini, Bressanone (BZ), Renon (BZ), Barbiano (BZ) and Tiles (BZ), local residents who participated in the events were asked for their opinion via a questionnaire. Six areas were surveyed: familiarity with Terna, information on the project, eventual areas for improvement, usefulness of the meeting, the need for further information and a final opinion.

Overall, 79% of respondents said that they were familiar with Terna. Adequate information on the project was deemed to have been provided at the outset (84% of respondents said they had “sufficient” or “adequate” information a sharp rise compared to the 45% registered in 2018). The meetings were deemed useful by 28% of the participants, very useful by 42% and extremely useful by 26%. 70% of respondents changed their opinion, becoming more favourable towards the project (up on the 61% registered in 2018).

Terna voluntarily consults on the need for grid development with local authorities and listens to stakeholders’ opinions in order to promote the best location for new projects, based on shared classification of land according to so-called “ERPA criteria”: (Exclusion, Repulsion, Problems and Attraction), and with the support of GIS (Geographic Information System) technology, which includes all information relating to different types of land use and the related protection constraints (regional, naturalistic, cultural, landscape, etc.).

During 2019, Terna continued its engagement at local level, with a view to raising awareness of the Company and its responsibilities, promoting an electricity culture and decarbonisation objectives, and initiating transparent engagement with all local stakeholders, opinion makers and influencers, in order to gauge their opinions and needs.

Precise and accurate mapping of all local stakeholders in the main areas affected by grid development projects (e.g. committee representatives, local authorities, universities and local associations) was carried out, as well as an assessment of their capacity to influence their respective communities and their perception of Terna and its initiatives.

Continuous listening to stakeholders has generated an overall improvement in engagement.

[55] The 16 Development Plan projects include: restructuring of the Alto Bellunese HV grid, SA.CO.I 3, the 132kV Riccione ring, the 150kV Calusia-Mesoraca-Belcastro-Catanzaro line and reorganisation of the local HV grid, the 132kV “Calenzano-Sesto Fiorentino” power line, Unicem no. 400 branch, the Paternò-Priolo power line, modification of the Trino-Lacchiarella, Matera Grottole Salandra line, restructuring of the 132kV and 380kV grids in the Province of Teramo, Mercallo-Cameri, grid restructuring in Val di Isarco for the VLV connection, the 380kV Cassano-Chiari power line, the 132kV Glorenza-Nauders interconnector, the Italy-Austria interconnector, the new Vizzini electricity substation and 150kV and 380kV connections to the NTG, the new 150kV Celano electricity substation and connections, the new Scafati electricity substation, the Sorrentino Peninsula reorganisation and reorganisation of the 132kV Reggio-Emilia grid.

“LOCAL COMMUNITY ENGAGEMENT” TARGET

KPIS AND TARGETS IN THE STRATEGIC PLAN 2020-2024

KPI	2019	
STAKEHOLDER ENGAGEMENT	**TARGET**	**RESULT**
Stakeholders who changed their opinion* after a meeting with the Company	+15%	+17.9%

** Changes in local stakeholders’ opinions of Terna are measured on the basis of a summary indicator that shows the level of satisfaction with Terna, weighted to take into account the significance of the stakeholder.*

Landowners affected by NTG development

< EU22

The construction of new power lines involves the use of between approximately 30 and 250 square metres of land - usually agricultural - for each pylon.

Although legally authorised to use an expropriation procedure[56] to obtain the use of land, Terna prefers solutions based on mutual consent, involving payment of one-off compensation for easement on private property. Attempts to reach a consensual solution do not always succeed, making enforcement measures necessary.

POWER LINE EASEMENTS

LANDOWNERS AFFECTED BY THE CONSTRUCTION OF NEW POWER LINES (NO)	2019	2018	2017
Total easements	707	1,644	1,817
of which consensual	519	888	1,069
of which enforced	188	756	748

The constant reduction in the number of easements is due to extension of the preparatory phase to the signing of a formal deed, and increased planning and construction of underground cable lines which are normally built close to other pre-existing infrastructure (e.g. along a road).
When building a substation that occupies much more land, Terna usually purchases the necessary land.
During 2019, in line with the number of kilometres of line demolished as a result of upgrade initiatives, 76 plots of land were returned to their owners (287 in 2018, 117 in 2017).

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[56] Law 1775 of 1933; Presidential Decree 327/2001 “Consolidated law on expropriations”.

Dialogue with local communities overseas

The authorisation process for the design and construction of the 138kV Aguaytía-Pucallpa power line in Peru is similar to the Italian process, including intense stakeholder engagement from the Environmental Impact Assessment phase (EIA, Estudio de Impacto Ambiental).

The process consists of several phases. It begins with a preliminary environmental impact assessment (EVAP, Evaluación Ambiental Preliminar) and, after approval by SENACE[57] (a government agency reporting to the Peruvian Ministry of the Environment), continues with environmental assessment activities (EIA). These activities include a Citizen Participation Plan (PPC, Plan de Participación Ciudadana), comprising a series of workshops with the local people directly affected by the power line, during which the nature of the project, its main impacts (positive and negative) and management strategies are presented.

The procedures for obtaining easements for the construction and operation of overhead power lines are similar to those in Italy.

Normally, Terna prefers solutions based on mutual consent, involving payment of one-off compensation, at market rates, for easement on private property. Only when it is not possible to reach an agreement is it necessary, as in Italy, to adopt enforcement measures *(imposición de servidumbre).*

POWER LINE EASEMENTS: AGUAYTÍA-PUCALLPA PROJECT IN PERU
EASEMENTS RELATING TO CONSTRUCTION OF THE 132 KM POWER LINE IN PERU (AGUAYTÍA-PUCALLPA PROJECT)

	TOTAL PLANNED FOR PROJECT	TOTAL AT 22 JANUARY 2020
Total easements	522	501
of which consensual	501	501
of which enforced	21	0

The most difficult cases and shared solutions

Reaching a consensual solution entails lengthy and difficult mediation procedures.

Outcomes are usually positive, but during the process local opposition may persist. Terna is willing to examine the situation and seek alternative solutions - even ones that are technically more complex than those originally identified - provided that they are compatible with the general interest of maintaining the safety, efficiency and cost-effectiveness of the electricity service.
In 2019, such cases included.

[57] Servicio Nacional de Certificacion Ambiental para las Inversiones Sostenibles.

Difficult cases

Italy - Switzerland interconnector and upgrade of the Val Formazza HV network

The consent process for the project began in 2012. Several committees were set up from the outset. In response, Terna scheduled various open meetings ("Terna incontra") with local residents. Over the years, Terna has made a series of voluntary additions to the project, in order to meet demands.

In 2017 and 2018, meetings continued with the Ministry of Cultural Heritage and Activities and the Piedmont and Lombardy regional authorities, aimed at reaching a solution with the broadest possible consensus. To this end, Terna requested and obtained a suspension of the consent process until May 2018. Following the services conferences held in July 2018 and the meetings promoted by the Prefectures of Verbania and Novara, in which the mayors of the municipalities involved took part, Terna announced its willingness to study further design solutions with a view to making technical and environmental improvements.

Following the notification from the Environmental Impact Assessment Technical Committee, which suspended the EIA procedure, the interconnector project has been separated from the Val Formazza upgrade works.

During 2019, Terna met with the local bodies and authorities affected by the project (the MED and regional, provincial and municipal authorities), maintaining constant dialogue with a view to identifying a shared project solution.

Restructuring of the 380kV and 132kV grid in the Lucca area

In January 2014, an authorisation procedure was launched regarding construction of a new electricity substation and a new line, and the demolition of other obsolete lines. Although the project was initially coordinated with the municipalities involved, they subsequently rejected it as a result of protests by local residents.
Terna then prepared four alternative solutions and presented them to local residents, and dialogue with the authorities involved continued during 2016. In April 2017, Terna requested a six-month suspension of the consent process in order to produce the documentation required by the EIA (Environmental Impact Assessment) Technical Committee. In April 2018, the Ministry of Cultural Heritage and Activities declared itself against, while the Environmental Impact Assessment Technical Committee declared itself in favour. Therefore, it is necessary to request the intervention of the Cabinet Office to overcome these disagreements between the ministries. The Cabinet has not yet delivered an opinion.

Upgrade in the Mid Piave Valley

The authorisation procedure for this project began in 2011 and it is currently at the Environmental Impact Assessment (EIA) phase. Some municipalities, including Belluno and Soverzene, have opposed the identified route and, in response, Terna proposed a project alternative in August 2015.

Dialogue with local authorities and local communities continued in 2016, thanks to the organisation of four meetings with local residents. Following differences of opinion between the Ministry of the Environment and of the Protection of Land and Sea, which was in favour, and the Ministry of Cultural Heritage and Activities and Tourism, which was not, the two ministries have continued to disagree. In January 2018, the Cabinet gave the go-ahead for the project. In March 2018, the environmental compatibility decree was issued, including some restrictions. This initiative is also part of the planning agreement entered into, on 21 January 2019, with Veneto Regional Authority[58], which, in response to requests from the local communities involved, provides for an underground section of line from Polpet station to the Piave river crossing. During 2019, Terna worked in synergy with local authorities to follow up on the planned project.

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[58] See the 2018 Sustainability Report, page 91.

Montesano sulla Marcellana electricity substation

These works were authorised in 2010 by Campania Regional Authority. Initially to be carried out by the company, ESSEBIESSE POWER, responsibility was subsequently transferred to Terna. In 2011, immediately after the works had begun, the municipality of Montesano sulla Marcellana ordered their suspension and initiated legal action. Since 2015, when the process of obtaining the necessary consents for the new substation (more compact than the previous one) designed by Terna began, the local committee has organised several demonstrations. In addition, questions have been put in Parliament and strong opposition has been manifested by the mayor of the town of Marcellana, Campania Regional Authority, private citizens and the mountain community, all of which have expressed their opposition, as well as comments and requests for supplementary information. All the alternative proposals presented by Terna were deemed unacceptable by the local authorities and residents. In 2018, in response to the requests from the local community, Terna announced that, together with the town of Montesano sulla Marcellana, it was willing to consider relocation of the substation.

380kV Volpago substation

This is the new Volpago substation project, presented in November 2017, regarding which meetings with the councils of Volpago and Scorzè were held in December 2017. A number of committees are already active in the region. They oppose the project because the areas affected by the works include the same municipalities that were involved in the "Cross-Veneto" project[59], which they strongly opposed. Moreover, some municipalities are engaged in the construction of the "Pedemontana Veneta" expressway (especially Volpago del Montello, where the substation is located), a project that is having a major impact on an area already heavily affected by mining activities (quarries). For the time being, Terna has filed the project with the MED and is proceeding with the formalities involved in beginning the consent process. This project is also included in the planning agreement between Terna and Veneto Regional Authority, signed on 21 January 2019. In addition, efforts have been made to coordinate the committees operating in the area with the aim of safeguarding the local environment and supporting plans to install underground cables.

The "Cross-Lucana" project

Aimed at connecting plants producing renewable energy from wind power, these works have encountered political problems, due to the position taken by the three councils in the area: Oppido Lucano, Tolve and Avigliano (the latter has requested relocation of the substation, which Terna agreed to and presented a modification to the project). During 2018, the councils of Oppido Lucano and Tolve filed for injunctions suspending work and also requested demolition of two pylons (Oppido Lucano). The latter was then suspended by the Regional Administrative Court, which upheld Terna's request for interim relief. Finally, Terna has filed an appeal before Basilicata Regional Administrative Court, challenging the Regional Authority's failure to respond to its application for an extension of the planning consents authorising the power line. During 2019, dialogue continued with the municipalities involved and Basilicata Regional Authority.

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[59] See the 2011 Sustainability Report, page 58.

Sa.Co.I. 3

The Sa.Co.I.3 project regards renewal and modernisation of the current HVDC electricity connection between Sardinia, Corsica and the Italian mainland, called Sa.Co.I.2, which has reached the end of its useful life. The initiative, which is classified as a Project of Common Interest (PCI), will strengthen the sharing capacity between the countries involved, ensure service continuity and also contribute to the development of the European electricity grid and therefore to the energy transition to more widespread use of renewable energy sources.
In September and November 2018, Terna launched the public consultation process required by the regulations, organising six information days ("Terna Incontra" events) in Sardinia and Tuscany. In the municipality of Suvereto, where the new substation is planned, a "No SACOI3 Committee" has been set up and also has the support of some local politicians.
Terna is committed to implementing the best technical and environmental solutions for the benefit of the new infrastructure's sustainability, participating in public meetings and technical roundtables in order to engage with local communities. Following meetings with the municipal authority and the Committee, a shared project solution has been arrived at. This will be presented to the EIA Committee in early 2020.

Shared solutions

Agreement between Terna and Veneto Regional Authority regarding a plan to develop and renew the Veneto transmission grid and trial IoT technologies for monitoring it

In January 2019, the lengthy process of dialogue and consultation with local authorities and Veneto residents resulted in a planning agreement regarding extraordinary works relating to the security of the electricity system, development of the region and socio-economic recovery in the areas affected by the exceptional weather events of November 2018.

The agreement provides for substantial investment in the implementation of vital works on the Veneto electricity grid, such as an upgrade between Venice and Padua via construction of the Dolo-Camin 38 0kV underground power line; restructuring of the Mid Piave Valley electricity grid (new Polpet-Scorzé 220 kV line) with an underground cable from the new Polpet substation to the Piave river crossing; construction of the Volpago substation and an upgrade of the existing grid, including 26 km of new underground cable connections and the demolition of 51 km of overhead lines; and restructuring of the electricity grid in Alto Bellunese (Cortina - Auronzo di Cadore 150 kV line) which will be laid entirely underground.

Terna has also undertaken to renew the existing regional electricity grid in order to increase the energy transmission service's stability and security and the infrastructure's resilience in the face of exceptional weather events.

The agreement also provides for collaboration with Veneto Regional Authority and the Regional Forestry Authority to develop "green corridors", an innovative project regarding the creation of ecological corridors along the routes of existing power lines in wooded areas. This will involve the selective planting of native plant species with controlled regrowth. Finally, Terna has undertaken to open centres of technological excellence in the Veneto region and to enter into agreements with universities to promote studies and research regarding the construction of electricity infrastructure, and to provide coworking opportunities.

A second agreement was signed in February 2020. This is in line with the content of the first agreement and regards the launch of a trial, based on Internet of Things (IoT) technology, involving the use of 500 sensors placed on pylons in order to carry out structural monitoring of the transmission grid.

National and international stakeholders

These include all the other stakeholders whose engagement with Terna is not determined by the presence of electricity infrastructure on their territory and who interact with Terna because they work there ("People", see the relevant section on page 169), have regulatory, supervisory and authorised power (competent authorities and ministries, see page 119), have an economic interest (shareholders, lenders, see page 46), operate in the electricity supply chain (see page 113), have commercial relations (suppliers - see page 92 - are customers of Non-regulated Activities and business partners), or play a mediating role between Terna and other stakeholders (media and opinion makers, see page 117).

A specific case is communities, namely all the end users of the energy transmission service (see page 119).

The "States General of the Italian energy transition"

Two days of discussion and analysis regarding the great transformation taking place at global level, and future energy and network scenarios. This was the agenda of the "States General of the Italian energy transition", organised by Cassa Depositi e Prestiti (CDP), SNAM and Terna, in collaboration with The European House - Ambrosetti, and sponsored by the Prime Minister's Office and the MED.

With this event, CDP, SNAM and Terna aimed to draw up a shared strategy that brings together authorities and businesses in a joint effort to make the energy transition a great opportunity for investment and employment growth.

In the presence of the Prime Minister, Giuseppe Conte, the Deputy Minister for the Economy and Finance, Laura Castelli, and the Undersecretary of State for Economic Development, Alessandra Todde, Cassa Depositi e Prestiti, a long-term investor, explained how it has widened the scope of its interventions and begun investing in new sectors, to include areas relating to the sustainability issues that feature in its Business Plan 2019-2021.

Terna and SNAM published the results of a joint study on future scenarios for the energy sector, ahead of preparation of ten-year plans for the development of electricity transmission and gas transportation networks.

This study sets out four possible scenarios that highlight the key role of gas and the electricity carrier (the documents are available on Terna's website)[60].

This transformation entails a number of challenges if the energy transition process is to take place quickly, effectively and without jeopardising the high levels of service quality achieved, whilst avoiding an excessive increase in costs for the community. Network investment, integration with European markets, increased system flexibility, evolution of the market to allow for the integration of new power generation resources into the system, innovation and digital transformation comprise a set of essential, coordinated and coherent actions.

The second working day, introduced by the presidents of Terna and SNAM, included four thematic workshops, open to external representatives, on research and innovation; the environment; local communities; and business associations. During this session, an assessment was carried out of the initiatives already launched and future projects, where listening to the stakeholders directly involved is of vital importance.

[60] https://www.terna.it/it/media/news-eventi/stati-generali-transizione-energetica-italiana

Electricity system operators

Together with Terna, these stakeholders make up the electricity supply chain, operating as producers, distributors, wholesalers and consumers. They engage in multiple relations with Terna, which are highly regulated and characterised by reciprocal impact and influence. These stakeholders also have the potential to influence regulatory authorities and public decision makers.

The My Terna portals (a platform that manages the dispatching users with whom Terna has entered into a contract, supported by a dedicated call centre) and GAUDÌ, the management system for the Consolidated Power Generation Plant Register at national level, are also used to management relations with these stakeholders.

Consultation Committee

The Committee is a technical body, chaired by a Terna representative. It is the permanent forum for consultation with operators from the electricity sector, in which the various categories of user (distributors, producers from conventional and renewable sources, large industrial customers, wholesalers and consumers) are represented, and includes the participation of ARERA and MED as observers.

In 2019, the Committee was involved in the process of drawing up the 2019 Development Plan and the 2020 Development Plan[61]. The Committee was also provided with a timely update on the progress of priority development projects.

Discussions with the Committee regarding the Development Plan are published on Terna's website. The Consultation Committee met twice in 2019.

With a view to sharing knowledge of the sector and promoting opportunities to listen to operators' requests, during 2019 Terna organised workshops to present projects and changes to the current regulatory framework. These included:

- a seminar on how the bidding tool for the capacity market works;
- a seminar to present the consultation documents relating to the pilot project regarding provision of the ultra-fast frequency regulation service ("Fast Reserve");
- a workshop on the 2019 Development Plan as part of the public consultation promoted by ARERA;
- a workshop with SNAM on the definition of future energy scenarios.

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[61] The interactions with the Committee regarding the Development Plan are available on Terna's website (https://www.terna.it/it/sistema-elettrico/rete/piano-sviluppo-rete/preparazione-pds-consultazioni)

The GAUDÌ portal

The GAUDÌ platform, which may be accessed by producers, distributors, dispatching users, authorities and Italy's Energy Services Company (GSE), was created by Terna[62] to manage the Consolidated Power Generation Plant Register at national level.

The Register records all the generation plants and the individual units that comprise them, of any size or source (conventional, renewable, cogeneration), including a total of approximately 870,000 units. It also enables monitoring of the status of each plant - from authorisation to connection, and the market qualification process - as well as all the changes to the plant and to commercial aspects that occur during a plant's operation.

In 2019, the platform implemented important changes regarding an update of upgrade management functions[63] and the management of ASSPC (Other Simple Production and Consumption Systems), aimed at identifying the ones already in operation on 30 April 2017 for which no qualification application had been submitted.

With a view to improving processes, the developments required for various purposes, such as, for example, hydroelectricity auctions, were implemented and notified to distributors and Dispatching Users.

In addition, all the activities needed to adapt the platform to the new European regulations - "Requirements for Generators" and "System Operation Guidelines" - have been launched.

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[62] In implementation of ARERA Resolution ARG/elt 124/10.
[63] Pursuant to the Ministerial Decree of 4 July 2019.

Business relations with electricity service operators

In providing the public electricity transmission and dispatching services operated by the Company under concession, Terna maintains business relations with various categories of operator, including:

- dispatching users (producers, wholesalers or end customers) with regard to the provision of dispatching services;
- distribution companies and other private grid operators in relation to transmission and aggregate metering, required with regard to regulate the dispatching service.

Since 2017, Terna is also responsible for the settlement of amounts due to and from balancing service providers (BSPs) that provide services on the Dispatching Services Market (DSM), as part of pilot projects launched by Terna in accordance with ARERA resolution 300/2017.

As part of dispatching activities, as the sole counterparty, Terna procures the resources needed to meet requirements and to guarantee a reserve margin on the DSM.

In 2019, transactions in the DSM amounted to approximately €1.7 billion.

In addition, for dispatching services purposes, Terna checks the consistency between the final programmes of operators (producers and consumers) with the amounts that have actually been withdrawn from/input into the grid. Any deviations represent so-called "imbalances", the value of which entails invoicing the related energy imbalance prices to the individual parties responsible for the imbalance costs. This is done in order to cover the costs generated for the system as a result of their conduct.

Further categories of operator with whom Terna trades include applicants who have requested connection of their plants to the NTG (producers and consumers) and interruptible users, namely customers who are willing to have their electricity supply suspended. Terna signs contracts with these operators regarding the interruptibility service, which is required for the secure operation of the electricity system, and especially with the aim of mitigating the risk of widespread power outages.

Participants in the interruptibility service numbered 221 in 2019, accounting for 4,333 MW of power. The related annual cost amounts to approximately €0.23 billion.

EU3 >

ELECTRICITY SECTOR OPERATORS IN RELATIONS WITH TERNA - NUMBER OF CUSTOMERS

CUSTOMERS	2019	2018	2017
Interruptible users	221	243	288
Distributors directly connected with the NTG	54*	51*	27
Supply-side dispatching service users (producers and traders)	130	135	140
Demand-side dispatching service users (traders and end users, including the Single Buyer)	187	187	186

** In addition to licensed distribution companies, the figure includes operators of closed distribution systems for internal user networks directly connected to the NTG.*

Agreement between Terna and consumer associations regarding the Cantiere dei consumatori (a focus group)

At the end of January 2020, Terna's Chief Executive Officer, Luigi Ferraris, and representatives from eleven consumer associations (Adiconsum, Adoc, Altroconsumo, Asso-Consum, Assoutenti, Codacons, Federconsumatori, Lega Consumatori, Movimento Consumatori and Udicon) signed a memorandum of understanding to strengthen collaboration between the parties by focusing on listening to citizens' requests and requirements.

In keeping with the attention Terna pays to local communities, this agreement has launched Cantiere dei consumatori, a permanent focus group aimed at stepping up collaboration between the parties during the consultation process in order to identify the best locations for new electricity infrastructure.

The agreement provides for information sharing regarding European, national, regional and local legislative initiatives; the promotion of awareness-raising actions regarding energy transmission issues; the launch of a study of initiatives to decarbonise the electricity and energy systems of Italy's smaller islands; and the dissemination of an energy transition culture among local communities, partly through research and development initiatives supported by European and Italian public grants.

Other stakeholders

Media and opinion makers

These stakeholders have a role as mediators between Terna and other stakeholders. This category includes national and international media outlets, national and international opinion leaders, web users, universities and other scientific and research organisations, study groups and national and international influencers, towards whom - with a view to achieving transparency and fostering a widespread electricity culture - Terna has always adopted an approach based on its willingness to share its often unique information content.

The media indirectly influence public opinion, regulatory authorities and public decision makers. They can have a direct impact on Terna's reputation or an indirect effect on its operating and business environment and on political decisions regarding energy.

All communication activities have been developed in such a way as to make coordination between the various departments and the integration of the various tools and activities even more effective, in order to obtain ever more widespread and consistent coverage across all media.
The Group's communication generated coverage via the release of a total of 18,889 items, including traditional (newspapers, periodicals, radio and TV) and online media.

In detail, 4,721 press articles (up 19% on 2018) were registered, 515 items were broadcast on leading TV and radio channels, and 13,653 articles were posted on leading websites. 2,286 articles appeared in the local press (of which 37% expressed positive opinions).

Regarding media coverage of the Chief Executive Officer, 459 articles were published, up 106% on 2018, of which more than half expressed positive opinions. Specific features regarding the CEO also rose, including dedicated photos (up 94%), references in headlines (up 50%) and quotes (up 79%). 14 interviews with the CEO were published in the press (leading national, local and foreign newspapers, and specialist magazines).

In 2019, the leading survey for assessing the transparency of the digital channels of the main Italian listed companies - prepared by Lundquist in collaboration with the Swedish company Comprend - awarded Terna's website (www.terna.it) fourth place in the Webranking Italy category (it came fifth in 2017, and tenth in 2016). With 87.3 points out of 100, the Company was also awarded fourth place (fifth in 2018) in the Webranking Europe 500 Comprend 2019 category.

In the first edition of "Lundquist.trust", a study of listed companies' digital communication, Terna was ranked in the Gold Class, which includes only four Italian companies that have managed to strike the best balance between substance, narration and engagement.

According to analysts, Terna was the most consistent communicator of its role and the steps it is taking to implement its strategy. As a result, the Company obtained the best result in terms of "substance".

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In order to facilitate broad awareness of electricity issues and to promote the spread of a well-informed energy culture, two integrated online platforms, representing examples of European excellence, have been launched: "The evolution of the electricity market in numbers", including statistical data since 2000 on national and regional demand, consumption, production, fuel, capacity and energy balances; and the "Transparency Report", which focuses on the latest real-time operating data from the national electricity system.

Finally, Terna's new app with data on system performance and electricity consumption, covering demand, power generation sources, overseas trading flows and news, has been available since December 2019.

SOCIAL NETWORK

	2019	2018	2017
Facebook			
Fans	20,670	13,153	9,209
Views	2,442,097	3,328,470	3,674,105
Interactions	39,948	46,090	42,870
Twitter			
Followers	5,175	4,500	3,838
Views	575,502	485,288	290,611
Interactions	9,858	8,992	4,930
Linkedin			
Followers	97,365	61,490	31,990
Views	4,771,527	4,635,262	1,764,035
Interactions	221,572	108,136	18,925

Relations with environmental organisations

Since 2009, Terna's commitment to further improve the environmental sustainability of the NTG has been implemented in concrete partnership agreements with the main environmental organisations.

The most significant include those with Legambiente, WWF and Greenpeace - which were signed or renewed in 2016 - who support Terna in the identification of grid development solutions in line with national and international environmental targets that are shared with local communities.

Information sharing - for example, regarding the scenarios used for Terna's Development Plan - is constant throughout the year and stepped up during the Plan's preparation phase.

Terna-RGI workshop on evolution and scenarios for the electricity grid and renewable energy sources

Terna continues to collaborate with RGI (see also page 124), with a view to increasing transparency and dialogue with all the key stakeholders concerned with energy infrastructure.

In April 2019, Terna and RGI-Renewables Grid Initiative held "Network and renewables: evolution and future scenarios", a workshop open to institutions and local authorities, environmental and consumer associations, and research institutes. This focused on the challenges posed by the energy transition and on possible solutions. In particular, Terna provided information on how the electricity grid will evolve to support the growth in renewables and presented the guidelines in the 2019 Development Plan. This envisages investment of more than €13 billion in the NTG over the next ten years and cuts in CO_2 emissions equivalent to approximately 6.3 million tonnes per year.

From an environmental point of view, the measures provided for in the Plan will enable a reduction of CO_2 emissions into the atmosphere of approximately 6.3 million tonnes per year, equivalent to the emissions produced by around 7 million medium-sized cars. Finally, around 60% of the new power lines entering service during the period of the Plan will be "invisible" as they will be underground and/or submarine.

Regulators of services operated under concession

These are the national and EU institutions and public bodies that by law are granted regulatory and supervisory powers over Terna, in its capacity as the operator of the electricity transmission grid and of dispatching activities.
While carrying out its activities and in full compliance with the respective roles, Terna - in its capacity as an independent system operator - maintains transparent and collaborative relations with these bodies, both with regard to compliance with its obligations under the current legislative and regulatory framework, and in order to make a positive contribution towards development of the framework, playing a proactive role and providing technical support to national and European institutions.
Collaboration with institutions specifically involves proposals for solutions that - on the basis of Terna's distinctive know-how - enable more effective pursuit of institutional objectives, such as market efficiency, promotion of the integration of renewable sources, integration of the national market within the European market, and the integrity and security of the Italian electricity system.

Public decision makers and regulators

These public institutions are responsible for regulation, supervision and authorisation of a general nature, and in particular regarding the construction of infrastructure. They exert an influence over Terna and engage with the Company in the performance of their institutional roles.

Since 2016, Terna has been on the Transparency Register, established by the Ministry for Economic Development to guarantee transparency and the traceability of meetings with the Ministry's top officials.

In 2019, in addition to ordinary communication initiatives and institutional relations, Terna attended the following parliamentary hearings: on 12 March 2019, the Chamber of Deputies' Production Activities Committee hearing into the National Integrated Energy and Climate Plan (PNIEC); on 13 March, the Chamber of Deputies' Joint Budget and Environment Committees' hearing into the Draft Framework Law relating to the development of smaller marine, lagoon and lake islands (AC 1285); on 16 April, the Senate Industry Committee hearing into reform of the intraday electricity market; and on 3 October 2019, the Chamber of Deputies' I and IX Committees' hearing into the Draft Law that is to convert into law Legislative Decree 105 of 2019 relating to urgent provisions regarding the scope of national cybersecurity (C. 2100). On 23 October 2019, Terna also testified before the National Economics and Labour Council's Investigative Committee I - Economic Policy, regarding the economic and employment effects in Italy of the energy policies contained in the new European regulatory framework.

Community

The concept of the community covers current and future end users of the electricity service and the response to their expectations of the electricity service in keeping with the commitments given in the related concession arrangement.

Communication channels

The management of relations with key stakeholders presupposes the availability of dedicated communication channels to receive requests for information, suggestions, reports and complaints of various kinds.

The most accessible and user-friendly tool is e-mail, using dedicated addresses to deal with specific matters[64]. This is publicised via the website, www.terna.it, and in the case of the e-mail address reserved for personnel, also via the intranet.
Via a set of questions, the "Contacts" section in the homepage menu guides visitors who wish to contact Terna. This page also contains certified e-mail addresses, for all communications that are subject to this requirement.

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[64] For example: sostenibilita@terna.it, investor.relations@terna.it; azionisti.retail@terna.it; ufficio.stampa@terna.it; etc.)

For electricity operators and suppliers, Terna has three separate company portals (GAUDÌ, MyTerna and the Procurement Portal), as well as a dedicated call centre, which may be reached via a toll-free number (800-999333).

From the website's homepage it is also possible to access Terna's social media profiles, which provide a growing opportunity for interaction with the Company. During 2019, the number of messages received in the Facebook page private mailbox folder (photos sent, support requests for CV submissions, reports and suggestions, requests for information and proposals for cooperation) grew 19.2%, with a private response rate by Terna of over 82%. Overall, during the three-year period 2017-2019, the total number of messages received by private mail from the Facebook page has risen from 168 in 2017 to 248 in 2018, an increase of 47.6%. This growth was driven by the increase in the numbers of support requests for CV submissions (up from 91 in 2018 to 94 in 2019) and photos sent (up from 67 in 2018 to 102 in 2019).

These tools are supplemented by dedicated reporting tools and mechanisms relating to ethical and environmental matters.

203-1 >

Community initiatives

Terna's contribution to Italy's civic growth goes beyond its role as an infrastructure operator, as expressed through the Company's support for social, cultural and environmental initiatives.

Terna's corporate giving activities primarily consist of financial support for projects with social goals and - preferably - the Company's own organisation of initiatives to benefit the community. In addition, assets no longer of use in operations are donated free of charge, and Terna's employees provide support by spending their working hours on various initiatives, especially paid hours for voluntary work or hours spent on social projects organised directly by Terna, as was the case in 2019 with the third edition and the launch of the fourth edition of the Next Energy programme. All external requests are managed in line with the Group's corporate giving policy and assessed by a special committee comprising the heads of Corporate Affairs, External Relations and Sustainability and Human Resources, Organisation and General Affairs.

415-1 >

In any event, in line with Terna's Code of Ethics, donations are never made to political parties or their representatives.

Terna is a member of the London Benchmarking Group (LBG) and has adopted its model - developing its own customised version - for defining, classifying and accounting for companies' charitable initiatives. The model is geared towards accounting for what companies do via initiatives that generate actual external benefits. Such initiatives may include cash contributions (donations, portions of sponsorships that generate an actual benefit and membership of associations that promote sustainability), in-kind contributions (the donation of assets at the end of their useful lives), or be in the form of working hours. In some cases, the valuation of contributions thus requires the use of non-accounting criteria and is therefore influenced by interpretative factors. Moreover, it has the advantage of consistently linking the costs and benefits of social initiatives, thus enabling strategic planning and effective management of the related activities.

Indeed, an important part of the model regards the measurement of benefits, with the aim of assessing the effective impact on end beneficiaries. In the most important projects, Terna appoints specialist external providers to assess the impact. The community initiatives implemented by Terna in 2019, classified in accordance with the LBG model, are broken down in the following table.

COMMUNITY INITIATIVES

	2019	2018	2017
Total value of contributions (excluding internal operating costs)	**2,027,598**	**1,956,323**	**1,817,996**
By type of contribution			
- In cash	1,789,727	1,707,603	1,625,685
- In kind (the donation of assets)	25,770	1,700	28,031
- Working hours	212,101	247,020	164,280
By type of initiative*			
- Donations	179,770	110,200	330,000
- Investment in the community	1,407,583	1,303,314	931,433
- Commercial initiatives	440,245	542,808	556,562
By purpose			
- Education and youth	1,299,624	880,630	1,067,497
- Healthcare	9,000	23,000	62,900
- Economic development	125,000	105,300	84,580
- Environment	22,550	242,921	130,721
- Art and culture	273,535	418,575	226,740
- Social well-being	10,000	0	42,000
- Emergency aid	166,489	98,484	100,210
- Other	121,400	187,412	103,347

* ***Donations****: sporadic contributions, typically in response to requests for funds from charitable organisations deemed to be of merit.*
Investment in the community*: expenditure on initiatives coordinated/organised by the Company in accordance with a medium- to long-term programme, often in partnership with non-profit organisations.*
Commercial initiatives*: marketing initiatives with beneficial effects (only the portion of expenditure that constitutes a charitable contribution is accounted for).*

Terna's corporate giving policy gives preference to initiatives projects relating to **SDGs 4 ("Quality education"), 7 ("Affordable and clean energy"), 9 ("Industry, innovation and infrastructure") and 11 ("Sustainable cities and communities").**

In keeping with these guidelines, the most important topics are youth employment - in the form of education and training - and by promoting innovation projects (see the box below on the Next Energy project). Work on the initiatives included in the partnership agreement with the LUISS University continued in 2019. This programme aims to provide high-quality training to talented young students (see page 179).

In 2019, spending on initiatives aligned with priority SDGs 4, 7, 9 and 11 accounted for 71.4% of Terna's expenditure on community initiatives.

For the purposes of full disclosure, it should also be noted that, in 2019, expenditure accounted for as donations and sponsorships amounted to €346,070 and €949,950 respectively.

Next Energy, the Terna programme focusing on the young and innovation

In April 2019, Terna renewed the three-year partnership with the Cariplo Foundation and Cariplo Factory aimed at implementing initiatives to promote the employability of young people and open innovation, the first of which is Next Energy.

The initiative has the dual aim of facilitating open innovation, in connection with Terna's growing need for innovation and the development of innovative projects, and increasing, again with regard to innovation within the context of the energy transition, opportunities for young, innovative entrepreneurs and talented new university graduates.

In May 2019, the award ceremony for Wind City, the start-up that developed and produced V-Stream, a variable geometry mini-turbine which generates power from wind and water, brought to an end the third edition of Next Energy (see also pages 122 and 165).

The fourth edition of Next Energy was launched in September 2019 and will come to a conclusion in May 2020.

Another topic, which is currently of minor importance, but has potential linked to the growth of the Group's International Activities, is access to energy (see the box below on the "Mato Grosso" project).

Operation Mato Grosso

In line with the agreement signed in November 2016 between Terna and the Parish of Chacas, in August 2019 the company Terna 4 Chacas was incorporated - which is 99.99% owned by Terna Plus S.r.l. with the remaining stake held by Terna Chile S.p.A. - with responsibility for supervision, engineering and supply of goods and services relating to the construction of the power line envisaged in the "Operation Mato Grosso" project.

This 16.5 km, 60kV power line, with some stretches at an altitude of more than 4,000 metres, will safely connect the local Huallin hydroelectric power plant (3 MW), thereby significantly increasing the availability of electricity, for the benefit of local community development projects.

During 2019, the working group comprising Terna technicians and volunteers from Operation Mato Grosso and the parish defined the route of the line and how it will be connected to the existing 60kV Pomabamba - Huari line.

The authorisation process, which Terna has helped to prepare by supporting the parish in drawing up of technical and design documents, has taken longer than expected and will be completed by the end of the first quarter of 2020.

Ahead of the construction phase, which will start in the second quarter of 2020 and will last approximately one year, an agreement has been signed between Terna Plus - the Terna subsidiary responsible for Non-regulated Activities overseas - and the parish of Chacas regarding implementation of all the planned activities.

Support for environmental causes has not been included in this table as it is usually linked to the construction of new lines and has therefore been classified under environmental expenditure (see "Environmental costs" on page 221).

Relations with European institutions

Operational since 1 July 2018, the Brussels Office is located in the same building as Cassa Depositi e Prestiti and SNAM, in order to strengthen synergies between their respective activities.

The aim is to establish ongoing dialogue with the European Parliament, the Commission and the Permanent Representation in order to take advantage of Terna's experience and expertise.

Being in Brussels also allows Terna to strengthen its presence in European and industry associations - especially ENTSO-E, the association of European TSOs - in order to ensure constant dialogue and the adoption of agreed positions versus the related stakeholders.

The main topics that Terna is following include the ones relating to the European Green Deal, the Clean Energy Package for All Europeans and the ones relating to financing under the next financial framework 2021-2027. The latter includes Sustainable Finance, and the Connecting Europe Facility, Horizon Europe and Digital Europe programmes, as well as the European Regional Development Fund and the Cohesion Fund.

Participation in European and international associations

A further opportunity for engagement and dialogue is provided by Terna's membership of the principal national and international trade associations.

European associations

ENTSO-E (European Network of Transmission System Operators for Energy)

The European Network of 43 Transmission System Operators for Electricity is involved in the process of integrating national electricity markets, coordinating the secure operation of interconnected electricity systems and developing electricity transmission grids, in implementation of the relative EU legislation (Third Energy Package, CEP-Clean Energy Package).

ENTSO-E's main objectives are to: draw up European network codes, guarantee the coordinated development of the electricity grid at European level by drawing up the European Electricity Grid Development Plan (TYNDP) and the related benchmark scenarios, and draw up the Research, Development and Innovation Plan at European level.

ENTSO-E's activities focus on four courses of action (security of supply, functioning of the energy market, promotion of energy saving, and promotion of the interconnection of energy networks), which generate new tasks for ENTSO-E (implementation of the Regional Coordination Centres - RCC, enhanced cooperation with DSOs, digitisation of networks and development of demand response).

These activities will be developed in line with the new climate policies previously set out by the European Commission with the launch of the so-called European Green Deal, a roadmap that seeks to make the EU the first climate-neutral continent by 2050.

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EASE (European Association for Storage of Energy)

The European association that is responsible for promoting industrial research and development in the field of electricity storage system applications in Europe and around the world and the use of this technology for the transition to a stable, flexible, sustainable and cheaper continental energy system. In particular, EASE is working on the development of a European platform for sharing information in the field of energy storage.

RGI (Renewables Grid Initiative)

An association consisting of 11 European TSOs and 12 environmental NGOs which aims to promote the integration of renewable energy sources through the development of electricity grids. RGI is committed to promoting strategic planning and participating in the construction of new power lines, via a meeting platform involving environmental NGOs and European TSOs (see also page 118).

International Associations

CIGRE (Conseil International des Grands Réseaux Electriques - International Council on Large Electric Systems)

An international non-profit association that conducts research regarding high-voltage grids. It has over 90 member countries, represented by 60 national committees, and Terna is currently the Chair and Vice Chair of the Italian Committee.

GO15 (Reliable and Sustainable Power Grids)

An international association bringing together the 17 leading grid operators worldwide in order to share best practices in the management of electricity transmission grids.

In addition to being on the Steering Board and the Governing Board, Terna co-chairs the Strategic Working Group on “Resilience, infrastructure development and interconnections”.

Med-TSO (Mediterranean Transmission System Operators)

This association brings together the TSOs from 19 Mediterranean countries, with the aim of promoting the standardisation of development plans and the coordinated management of grids. The association also works to facilitate the creation of a legislative and regulatory framework designed to drive the development of interconnection projects and promote the exchange of electricity between electricity systems in the Mediterranean area.

Terna hosts the association’s registered office and operational headquarters in Rome and appoints its Secretary General, as well as chairing the Technical Committee, which is responsible for planning the Mediterranean electricity grid.

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RES4Africa Foundation (Renewable Energy Solutions for Africa)

This non-profit foundation was established on 7 June 2019, following the transformation of the association with the same name. The association aims to promote the use of renewable energy and the dissemination of energy efficiency measures, as well as supporting the creation of a favourable environment for renewable energy investment in countries in the southern and eastern Mediterranean area and in sub-Saharan Africa. The association has its headquarters in Rome.

As a founding member, Terna is a member of the Executive Committee.

WEC Italia (World Energy Council - Italian committee)

The Italian committee of the WEC, an international organisation that brings together operators from over 90 countries, with the aim of promoting a sustainable energy system worldwide.

The Company also continued to participate in the activities of organisations with a broader remit (such as Diplomatia, the Council on Foreign Relations, etc.) in order to monitor the socio-political and economic contexts in which to develop or consolidate its business.

In 2019, at bilateral level, Terna initiated a series of contacts with the senior managements of European and non-European system operators, with the aim of concluding cooperation agreements, at bilateral and multilateral level, in areas of common interest, particularly with regard to:

- grid development;
- electricity system operations;
- technological innovation.

In 2019, together with 7 other European TSOs, Terna signed a joint declaration aimed at highlighting the crucial role played by transmission system operators in facilitating the energy transition, ensuring the adequacy and security of the electricity system, promoting the development of networks and guaranteeing the necessary flexibility.

Terna has opened a Brussels Office together with the other entities in which CDP has a stake. Once this is fully operational in 2019, it will enable the Company to strengthen relations with European TSOs, as well as its links with European institutions, including in relation to technical matters. This will enhance Terna’s technical contribution regarding European matters ahead of implementation of European legislation reforming the electricity sector (the Clean Energy Package and the European Green Deal) in support of the energy transition and the EU’s decarbonisation goals.

Investigations, litigation and sanctions

Investigations by ARERA

With regard to the investigations initiated by the Regulatory Authority for Energy, Networks and Environment (ARERA) which are of potential interest to Terna, it should be noted that, based on the information in the Company's possession, the following proceedings are still pending:

- Resolution 450/2013/E/eel of 11 October 2013 - Ruling on electricity price trends in the Sicily area, during the period of maintenance of the Sicily - Mainland interconnector - October 2013;
- Resolution 674/2017/ E/eel Urgent rulings regarding potential problems in the wholesale electricity market deriving from the preventive seizure of the Brindisi Cerano power plant. Formal notice to a market operator and initiation of a fact-finding investigation;
- Resolution 158/2018/E/eel - Initiation of an investigation into the availability of transport capacity between Italy and Greece, partly in view of the launch of market coupling on this border pursuant to Regulation 2015/1222 (CACM).

Litigation

The main commitments and risks not disclosed in the financial statements at and for the year ended 31 December 2019, relating to the Parent Company, Terna, its subsidiary, Terna Rete Italia S.p.A., and Tamini Group companies, are described below. There are no significant commitments or risks for the other subsidiaries at that date.

Environmental and urban planning litigation

Part of environmental litigation deriving from the construction and operation of Terna's power plants, consists of legal actions taken against the alleged negative effects of electric and magnetic fields generated by power lines.
In general, this litigation necessarily involves the Parent Company, which owns the infrastructure in question.

Moreover, it cannot be ruled out that the parties concerned may also initiate legal proceedings against the subsidiary, Terna Rete Italia S.p.A., as the electromagnetism generated by power lines relates not only to ownership of the plant, but also to its operation and the quantity and quality of electricity it transports.

Regarding this matter, it should be noted that the issue of the Cabinet Office Decree of 8 July 2003 - which specifically set the values of the three parameters (exposure limits, safety thresholds and quality targets) provided for in Framework Law 36 of 22 February 2001, which electricity infrastructure must comply with - led to a significant reduction in any such litigation.

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Other environmental and urban planning disputes, which do not relate to electromagnetic fields, are also pending with regard to Terna S.p.A. These disputes are connected with the operation of certain Terna-owned plant, which in the event of an unfavourable outcome could also generate immediate effects for Terna Rete Italia S.p.A. (to date unforeseeable and therefore not included in "Provisions for litigation and sundry risks"), both as the entity appointed by Terna S.p.A. to build the related infrastructure and as the entity responsible for its operation. In particular, charges may arise for Terna Rete Italia S.p.A. connected with changes to the infrastructure involved in such disputes and its temporary unavailability. However, after examination of the disputes in question by Terna S.p.A. and external counsel appointed by the Company, it appears that the possibility of any negative outcomes is remote.

In particular, it should be noted that a dispute is pending regarding the new 380kV "Udine West - Redipuglia" line and related works, which has been in operation for two years. If the appeals lodged by the municipalities and/or private parties are upheld, resulting in annulment of the decree authorising the project, this could also have consequences for operation of the infrastructure.

Litigation regarding the legitimacy of construction permits and the operation of infrastructure

Another aspect of litigation connected with the infrastructure owned by the Parent Company derives from legal actions brought before the competent administrative courts, aimed at obtaining the annulment of decisions granting consent for the construction and operation of infrastructure.

Litigation relating to activities carried out under concession

As the operator of transmission and dispatching activities since 1 November 2005, the Parent Company has been a party in a number of court cases, most of which have contested determinations adopted by ARERA (Italy's Regulatory Authority for Energy, Networks and the Environment), and/or the Ministry for Economic Development, and/or Terna, in relation to these activities. In cases in which the plaintiffs have, in addition to inherent defects in the contested determinations, alleged violation of the regulations laid down by the aforementioned authorities, or in cases in which the determination has had an impact on Terna, the Company has also taken action to defend its interests through the legal system. Within the scope of such litigation - even though some cases have been concluded, at first and/or second instance, with the annulment of ARERA's resolutions and, when applicable, of the consequent determinations adopted by Terna - any negative outcomes for the Company itself may be deemed unlikely, as these disputes normally relate to pass-through items.

Litigation regarding supply contracts

This litigation only refers to Tamini Group companies and relates to supply contracts entered into between Tamini Group companies and its customers, regarding the supply of transformers and/or the related components.
It also concerns certain claims for damages brought against companies, regarding alleged damage caused by machinery and/or components supplied by them.
With regard to these judgements, it is impossible to exclude, in absolute terms, any unfavourable outcomes. Where such outcomes are deemed likely, specific provision is made to the provisions for risks and charges.
Further details on the various categories of litigation are provided in the "Key indicator tables" on page 266.

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Electricity service and innovation

Ensuring that high quality of service standards are maintained during the radical transformation to a carbon-free energy model is one of Terna's strategic objectives, pursued via investment in new electricity infrastructure and innovation.

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In brief

Alongside the goal of guaranteeing the quality, continuity and cost-effectiveness of the electricity transmission and dispatching service over time, as required under the concession arrangement agreed with the government, one of Terna's strategic objectives is to complete the transition to a new energy model, based on the large-scale integration of renewable sources.

The section begins with an assessment of the energy sector[65], followed by the results for the year relating to service quality and continuity[66] and dispatching.

Reference to SDGs 7, 9 and 13 opens the central part of the section, which focuses on the means at Terna's disposal in order to bring about the energy transition, starting from development of the grid[67] and the 2020 Development Plan, which is dependent on the four drivers of Decarbonisation, Market efficiency, Security, quality and resilience, and Sustainability[68]. This part of the section also focuses on the state of progress in implementing previous Development Plans.

Connections with new plants[69], cross-border connections (including the new Italy-Montenegro Interconnection[70]), private Interconnector projects[71] and all the various aspects of asset management[72] complete the overview of capital expenditure and work on developing the grid. The section ends with a part dedicated to innovation[73], which is increasingly focused on Open Innovation and research and development.

HIGHLIGHTS:

Availability of the service **99.99%** Average Service Availability (ASA)	€ **14** billion **to be invested** under the 2020 Development Plan	The opening of **3** **"Innovation Hub"** around the country

[65] Page 131.
[66] See the paragraph "Continuity and quality of service" on page 136.
[67] See the paragraph "Grid development" on page 142.
[68] See the paragraph "2020 Development Plan" on page 143.
[69] Page 147.
[70] See the box "New Italy-Montenegro interconnector inaugurated" on page 150.
[71] See the paragraph "Private interconnectors pursuant to Law 99/2009" on page 151.
[72] See the paragraph "Asset management" on page 152.
[73] See the paragraph "Innovation" on page 160.

Energy sector

The energy model based on production from fossil fuels that has for many years driven the world's economic and demographic growth is no longer sustainable.

Energy production from fossil fuels is one of the main causes of anthropogenic greenhouse gas emissions (including CO_2), whose impacts on the environment and climate, such as the rise in the average global temperature and the intensification of natural disasters, are scientifically recognised and increasingly frequent.

So far, global warming caused by human activities is estimated at around 1°C, with a growth trend of 0.2°C per decade. To halt this trend, a global commitment to rapid and progressive decarbonisation of all energy sectors is needed.

The unavoidable obligation to find an effective, universally shared solution has led to the drafting of international agreements aimed at defining policies and targets to curb the global warming caused by the increase in greenhouse gases in the atmosphere. The first such agreement, reached in Paris in December 2015 within the framework of COP21[74], was signed by 185 countries who committed to keeping the global temperature rise below 2°C - and, if possible, below 1.5° - compared with pre-industrial levels.

In line with the Paris Agreement, the European Union launched a legislative process that led to final approval of the CEP (Clean Energy for All Europeans Package) in May 2019[75].

In keeping with these guidelines, the Italian government approved the Integrated National Plan for Energy and the Climate (PNIEC) in December 2019.

One of the objectives of the PNIEC is to boost the share of total consumption generated by renewable energy sources from 18.6% in 2020 to 30% by 2030. The electricity sector has been set even more challenging goals, with the aim of increasing the share of total electricity consumption represented by renewables from 34.1% in 2017 to 55.4% in 2030.

Measures designed to promote security of supply for energy, above all electricity, are dependent on the introduction of the Capacity Market, which was launched in 2019, and on revision of the Emergency Plan for the Security of the Electricity System (PESSE). The strategy also includes plans to boost storage systems (above all pumping), cross-border interconnections (see page 149) and investment in resilience in order to contribute to efforts designed to increase the ability of the grid to handle extreme weather events and emergencies (see page 154).

In 2019[76], renewable sources, including hydroelectric and biomass, accounted for 40% of Italy's production (35% of demand).

[74] 21st Conference of the Parties to the Climate Change Convention.
[75] The CEP foresees a 40% reduction in greenhouse gas emissions compared to 1990, a 32% share of renewable energy in gross final energy consumption, and a 32.5% reduction in primary energy consumption compared to the trend scenario.
[76] Provisional data.

The new Presidency of the European Union has opened with a further commitment to the environment. In December 2019, the President of the new European Commission, Ursula von der Leyen, presented the Communication on the "European Green Deal" to the European Parliament, which sets out a roadmap to make the EU the first climate-neutral continent by 2050.

The European Commission will publish the legislative text ("Climate Law") by March 2020, with formal adoption of the 2050 net-carbon neutrality target and will set the new targets for 2030.

Data regarding electricity demand and production in Italy, and the performance of production sources in terms of demand, are shown below.

ELECTRICITY DEMAND IN ITALY

ELECTRICITY BALANCE IN ITALY (GWH)	2019*	2018	2017	% CHANGE 2019-2018
Net domestic production	283,846	279,845	285,265	1.4%
From overseas suppliers (imports)	43,987	47,170	42,895	-6.8%
Sold to overseas customers (exports)	-5,822	-3,271	-5,134	77.8%
For use in pumping**	-2,414	-2,313	-2,478	4.3%
Total demand in Italy	**319,597**	**321,431**	**320,548**	**-0.6%**

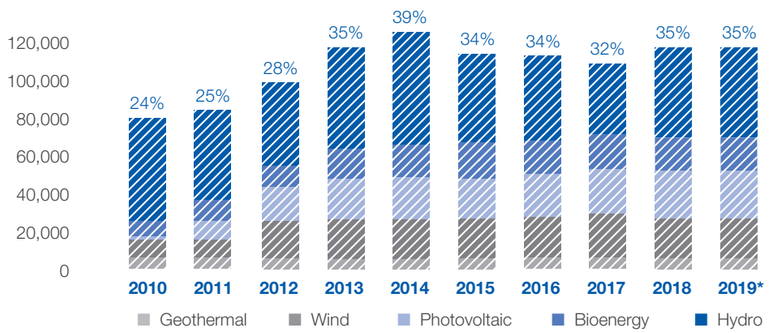
* *Provisional data.*
** *Electricity used for pumping water, solely for subsequent use in electricity production.*

ELECTRICITY PRODUCTION IN ITALY

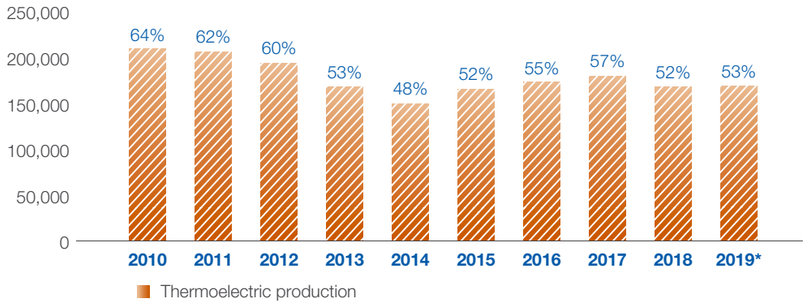
GWH	2019*	2018	2017	% CHANGE 2019-2018
Net hydroelectric production	46,959	49,928	37,557	-5.9%
Net thermal production	169,265	166,737	182,487	1.5%
Renewable production	67,622	63,180	65,221	7.0%
Total net production	**283,846**	**279,845**	**285,265**	**1.4%**

* *Provisional data.*

PERFORMANCE OF PRODUCTION SOURCES IN TERMS OF DEMAND



* *Provisional data.*



* *Provisional data.*

The percentages shown in the two graphs compared refer to the share of demand met by renewable sources (top graph) and thermal sources (bottom graph), totalling 88% of demand. The remaining 12% is covered by electricity received from overseas suppliers.

Renewable production in 2019 is in line with the figure for 2018, but the generation mix has changed, with hydroelectric production down and wind and photovoltaic production up.

NO. OF HOURS IN WHICH COVERAGE OF DEMAND BY RENEWABLE SOURCES EXCEEDS THRESHOLD

	>30%	>40%	>50%
2017	4,434	1,769	524
2018	5,653	2,610	767
2019*	**6,057**	**2,647**	**775**

** Provisional data.*

As there are 8,760 hours in a calendar year (8,784 in a leap year), it is significant that the trend in recent years has seen an increase in the number of hours during which the share of demand met by RES exceeds the 30% threshold.

This reflects both growth in renewable capacity installed and an increasingly integrated approach to managing the various renewable energy sources available.

Continuity and quality of service

EU28 >

EU29 >

Each segment of the electricity system - generation, transmission and distribution - plays a role in ensuring the availability of electricity in Italy, guaranteeing adequate quality standards and keeping the number of outages below pre-set thresholds.

In the context of the growing importance of renewables, some of which are not programmable, Terna is responsible for service continuity on the transmission grid, which is monitored through various indicators, a number of which are defined by ARERA.

The RENS and ASA indicators are the most significant, as they record the frequency and impact on the service of events affecting the electricity network and linked to faults or external factors, such as weather events.

INDICATOR	WHAT IT MEASURES	HOW IT IS CALCULATED
RENS (Regulated Energy Not Supplied)	Energy not supplied following events affecting the relevant grid*.	The sum of the energy not supplied to users connected to the NTG (following events affecting the relevant grid).
ASA (Average Service Availability)	Availability of the service provided by the NTG.	Based on the ratio of the sum of energy not supplied to users connected to the NTG (ENS) and energy fed into the grid.

** The "relevant grid" refers to all the high-voltage and very high-voltage network.*

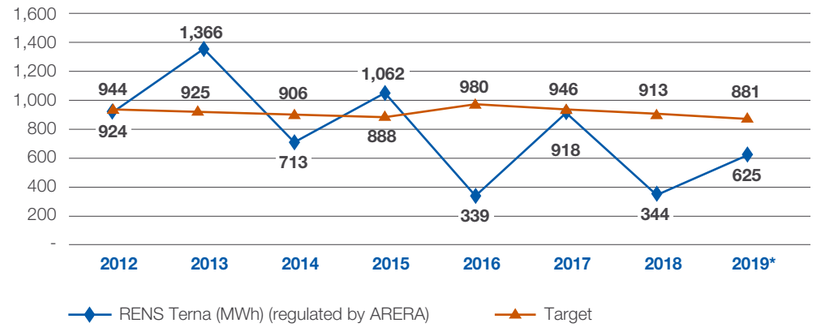
The RENS indicator is also important due to the impact it has on regulated revenue: ARERA[77] regulates the quality of service provided by Terna through a bonus/penalty mechanism based on this indicator.

As regards the ASA indicator, the operating performance shows that ASA has remained stable at a high level over the years (the higher the indicator, the better the performance).

This indicator shows that the energy not supplied following a fault on the grid - subject to ARERA's bonus/penalty scheme - represents a minimal part of the total quantity of energy supplied to users of the grid.

[77] Resolution ARG/elt 197/11. This regulates the quality of the service provided by Terna via a bonus/penalty mechanism applicable to the regulatory period 2012-2015 and relating to the Regulated Energy Not Supplied (RENS) indicator attributed separately to the grid owned by Terna S.p.A. and to the one owned by the subsidiary, Terna Rete Italia S.r.l.
Since 2016, the quality of the service provided by Terna has been regulated by Resolution 653/15/R/EEL, the latter applicable to the 2016-2023 regulatory period, which takes into account only one indicator, NTG RENS, including the grid owned by Terna S.p.A. and its subsidiary, Terna Rete Italia S.r.l.
Resolution 38/2016/R/eel recently clarified that the portion of the network acquired from the FSI Group is excluded from the bonus/penalty mechanism regarding Energy Not Supplied.

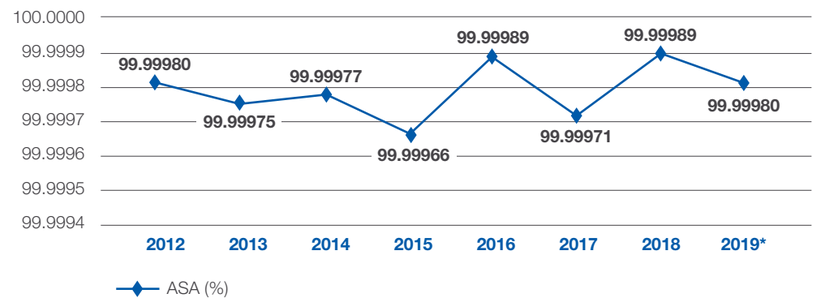
RENS INDICATOR



** The RENS indicator for 2019 is provisional and is subject to change following confirmation of the related amount by ARERA.*

For the RENS indicator, the targets for 2016-2023 have been set as an average of the RENS indicator for the period 2012-2015, with a 3.5% improvement in performance required for each year compared with the previous one.

ASA INDICATOR



** The figure for 2019 is provisional.*

The ASA indicator refers to the observation period 2012-2019.

Key dispatching activities

Dispatching activities aim to ensure that current quality and continuity of service standards are maintained over time. Key developments in 2019 are shown below.

Key events in 2019

Capacity Market

Following the closure of numerous programmable thermoelectric plants, recent years have seen a significant decline in the availability of programmable capacity in the National Electricity System.

Aside from undoubted benefits in terms of cost efficiency and sustainability, the growing use of renewable sources has reduced the profitability of programmable thermoelectric plants and put their continuing operation into question.

This has led to a reduction in the resources needed to ensure system security.

On the other hand, further closures of programmable thermoelectric plants would put the adequacy of Italy's National Electricity System at high risk. This situation has thus made it necessary to create a Capacity Market, on which Terna can procure the generation capacity needed to manage the system. This is done through fixed-term contracts awarded by competitive auction.

Following the receipt of clearance from ARERA, on 28 June 2019, the Ministry for Economic Development issued a decree continuing the implementation process. ARERA then published resolutions governing the conduct of auctions. The first auctions were held in November 2019 for the delivery period covering 2022 and 2023, with contracts awarded for total capacity of 40.9 GW and 43.4 GW.

The Capacity Market will not only make the energy market more efficient, reliable and lower cost, but will also play a key role in the energy transition and the phase-out of coal by 2025.

Opening up of the DSM to new types of resource

In accordance with ARERA Resolution 300/2017/R/EEL[78], in November 2019, Terna published a document, to be consulted on with entities interested in making use of the Fast Reserve service, in the "Pilot Projects" section of its website.

These projects aim to increase the resources available to provide grid services, try out new forms of revenue and test new kinds of fixed-term procurement of resources, partly in view of the future scenarios described in the proposed National Integrated Plan for Energy and Climate (PNIEC).

The Fast Reserve service can thus contribute to system security by improving the speed of response to frequency changes, a service up to now provided by traditional generating plants.

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[78] This resolution set up pilot projects as part of the progressive opening up of the dispatching services market (DSM) to new types of resource, including storage systems and distributed demand and generation.

Black start simulations

Black start simulations are needed to check that the electricity system is working properly and to improve its efficiency by ensuring a rapid reboot of the system in the event of a blackout. In 2019, four live tests were successfully conducted, followed by the related black starts.

In January, black start testing was carried out from overseas, from Slovenia to Puglia. In September, November and December, a further three simulations were conducted in Italy, with black starts carried out in Friuli-Venezia Giulia, central Italy (Abruzzo, Lazio and Umbria) and in Sardinia.

TERRE project

The TERRE (Trans-European Replacement Reserve Exchange) project began in 2013 as an early implementation of the Electricity Balancing Guidelines regarding the design, development, implementation and management of a platform to share balancing resources among European countries.

The project involves 11 countries of which nine are full members (France, the UK, Switzerland, the Czech Republic, Poland, Spain, Portugal, Romania and Italy) and two are observers (Bulgaria and Hungary).

In August 2019, a Cooperation Agreement was signed that marks the beginning of the implementation and operational phase of the TERRE platform for the exchange of Replacement Reserves (to be activated in over 15 minutes).

Montenegro-Italy connection

In November, the longest HVDC submarine cable to be laid by Terna was inaugurated. The cable links the electricity stations at Cepagatti (PE) and Lastva, located within the municipality of Kotor in Montenegro (for further details, see the box, "New Italy-Montenegro interconnection inaugurated", on page 150). The Dispatching unit was heavily involved in 2019, drawing up the operational rules together with the Montenegrin TSO, conducting connection tests and preparing for the auctions held to assign transmission capacity rights.

Investment and innovation for the SDGs

In the current phase of transition towards a decarbonised economic system, in addition to its traditional tasks, the Company is also responsible for promoting the integration of renewables as far as possible. This is achieved by directly connecting them to the grid or through grid upgrades, and by improving grid management capabilities when using non-programmable renewable sources to meet high demand.

Increased use of renewables and development of the electricity grid go hand in hand. Indeed, the latter is an essential enabling factor for the former.

Terna's activities are, therefore, an integral part of the form of sustainable development set out in the United Nations Sustainable Development Goals and, especially, in Goal 7 ("Affordable and clean energy"), Goal 9 ("Industry, innovation and infrastructure") and Goal 13 ("Climate action").

For the specific implementation of its contribution to the achievement of these SDGs, Terna relies on five main instruments:

- investment in development of the transmission grid (the Development Plan);
- investment in security of service (the Security Plan);
- investment in the resilience of the grid and the service (the Resilience Plan contained in the Security Plan);
- asset management (the renewal and maintenance of infrastructure);
- innovation aimed at supporting the transition to renewables and promoting energy efficiency.

GROUP CAPITAL EXPENDITURE

€m	2019
Development Plan	488.1
Security Plan	188.1
Renovation of electricity assets	372.4
Other capital expenditure	99.0
Total regulated assets	1,147.6
Non-regulated assets*	104.4
Capitalised financial expenses	12.1
TOTAL CAPITAL EXPENDITURE	**1,264.1**

** Non-regulated capital expenditure primarily relates to the private Italy-France interconnector and includes the private Italy-Montenegro interconnector.*

BENCHMARK SDGS FOR TERNA

TARGET	TERNA'S ACTIONS	SDG
7.1 - By 2030, ensure universal access to affordable, reliable and modern energy services. **7.2** - By 2030, increase substantially the share of renewable energy in the global energy mix. **7.a** - By 2030, enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology.	**7.1** - Focus on innovation to increase energy efficiency and contribute towards decarbonisation of the economy (see page 160); Carry out the investment provided for in the Development Plan (see page 143); Seek new non-regulated business opportunities (see page 57). **7.2** - Carry out the investment provided for in the Development Plan (see page 143). **7.a** - Play an active role in policy coordination at international level (ENTSO-E, see page 123) and develop overseas operations (see page 58).	7 AFFORDABLE AND CLEAN ENERGY
9.1 - Develop quality, reliable, sustainable and resilient infrastructure, including regional and trans-border infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all. **9.a** - Facilitate sustainable and resilient infrastructure development in developing countries through enhanced financial, technological and technical support to African countries, least developed countries, landlocked developing countries and small island developing States.	**9.1** - Carry out the investment provided for in the Development Plan (see page 143) and implement the Resilience Plan (see page 156); Construct cross-border interconnections (see page 149). **9.a** - Develop International Activities (see page 58).	9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
13.1 - Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries.	**13.1** - Implement the Resilience Plan; Research and Development; Innovation. Focus on innovation to increase the resilience of the NTG (see page 156).	13 CLIMATE ACTION

Grid development

Each year, Terna prepares a National Transmission Grid (NTG) Development Plan, which sets out the grid development initiatives envisaged over the next ten years, as well as the state of progress of the development works planned in previous years.

By analysing electricity flows through the grid and developing supply and demand projections - including the growing production from renewable sources - Terna is able to identify grid upgrade requirements and, consequently, to plan the new works needed to ensure the adequacy of the system.

The Plan contains all the investments that Terna is committed to carrying out in order to guarantee the efficiency of the grid, the security of supply and of the service. At the same time, it represents the community's need for a secure, efficient electricity service and Terna's commitment to meet that need.

All investment in development of the grid is subject to a prior **cost-benefit analysis**, comparing the related expenditure with the resulting benefits, expressed in monetary terms. Cost-Benefit Analysis Methodology (CBA 2.0) entails an important alignment with the criteria and methods applied by ENTSO-E and considers and includes indicators of environmental and social benefits.

A positive cost-benefit ratio is a necessary condition of the investment's inclusion in the Development Plan.

The Development Plan is assessed and approved by the Ministry for Economic Development, following the outcome of the public consultation[79] organised by ARERA, and is submitted for evaluation by the grid users' Consultation Committee (also see page 113).

The Plan is also subjected to a Strategic Environmental Assessment (SEA)[80], with a view to incorporating environmental considerations when preparing the plan, thereby ensuring its environmental sustainability.

[79] Pursuant to art. 36.13 of Legislative Decree 93/11.
[80] Or, if necessary, to the procedures for verification of eligibility for the SEA procedure pursuant to Legislative Decree 1 of 24 January 2012.

2020 Development Plan

Grid development is one of the key enabling factors in the transition to the future energy system.

Terna's 2020 Development Plan is aimed at designing the grid of the future and, to achieve this, four drivers have been identified:

- **Decarbonisation**: the electricity system's transition to complete decarbonisation requires use of all the tools necessary in order to fully integrate renewable production plants in order to reduce emissions in the long term;
- **Market efficiency**: the energy transition requires specific enabling action levers, including the adoption of new market models;
- **Security, quality and resilience**: ensuring the security of the national electricity system and the quality of the service, and creating an increasingly resilient system, capable of handling critical events external to the system itself;
- **Sustainability**: Given its importance in the energy transition process under way, this driver plays a cross-cutting role in creating value for Italy by enabling more sustainable and efficient electricity generation, while at the same time keeping down costs for users, providing a quality service to citizens and minimising environmental impacts

The **2020 Development Plan entails investment of approximately €14 billion**, which will enable the Company to achieve the following electricity system efficiencies and benefits:

300 GWH A YEAR	OVER 7,000 MW	AROUND 5,000 MW	AROUND 5,500 MW
In reduced energy losses	In reduced congestion	In increased interconnection capacity with other countries	In increased capacity provided by the connection of new renewable plants

New green bond issues to finance grid development work

In January 2019, Terna reopened its first green bond, issued in July 2018, in order to raise a further €250 million in the form of a private placement.

In April 2019, Terna launched an additional 7-year, €750 million green bond for institutional investors.

The net proceeds of both issues will be used to finance eligible green projects that Terna has already selected from among those provided for in its Development Plans, in compliance with the Green Bond Principles 2018 published by ICMA, the International Capital Market Association.

In this regard, Terna has prepared and published a Green Bond Framework, in order to facilitate the transparency and quality of the green bonds issued. The Framework and the second party opinion provided by the independent advisor, Vigeo-Eiris, are available for consultation on the Company's website (www.terna.it).

The "Green Bond Report 2019" is published as an annex to this Report (see page 248).

Reducing CO_2 emissions in the electricity system

The policies of the European Union strongly urge an increase in the energy efficiency of energy systems, and greater penetration of technologies with low environmental impact. These measures are ultimately aimed at reducing greenhouse gas emissions as much as possible, especially CO_2.

The electricity transmission system plays a central role in the integration of energy technologies that enable emissions reduction. Investment in the transmission network is a key tool for achieving the objectives set out at Italian and European level, via two main channels:

- a reduction in grid losses;
- better exploitation of power generation resources by shifting production quotas from plants with lower yields - which are nevertheless necessary to cope with grid constraints - to more efficient plants powered by less emissive energy sources (e.g. gas), or to plants powered by renewables.

In the medium to long term ahead of 2030, the various scenarios show the positive effects of development initiatives in terms of cutting emissions. These effects vary, in terms of amount, depending on the scenario analysed. The analyses carried out show that the amount of CO_2 avoided by reducing losses and increasing the efficiency of thermoelectric power plants could reach a maximum value of around 2.1 million tonnes by 2030, particularly under the PNIEC scenario.

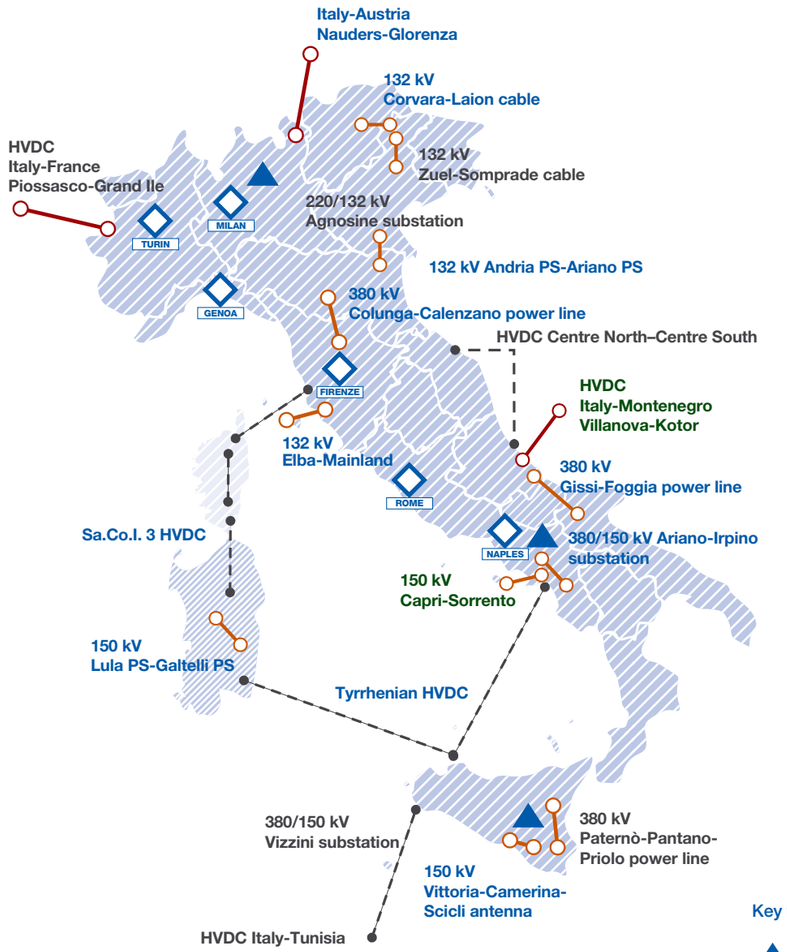
Reduction in grid losses

Reducing losses on the transmission grid - with equivalent consumption - leads to a decrease in electricity production by power plants operating throughout Italy, with a consequent reduction in CO_2 emissions linked to production from thermoelectric sources.
The entry into service of the main development works provided for in the 2020 Development Plan will lead to a reduction in energy losses of approximately 300 $ktCO_2$ a year, regardless of the scenario taken into account.

Improvement in the production mix and interconnections with other countries

Assessment of the increase in the operating efficiency of thermoelectric power plants resulting from the principal upgrades of the NTG is based on simulations that enable evaluation of representative scenarios of different stages of progress in developing the grid.
In particular, dispatching obtained on the Day-Ahead-Market is compared in two situations: one characterised by an expected easing of constraints on interconnection capacity due to the implementation of planned works, and the other characterised by the current constraints on interconnection capacity. Via this analysis, it was determined that reducing interzonal congestion will lead to the replacement of lower yielding plants, with either more efficient production plants or through greater integration of renewable production.
Reducing congestion, together with interconnection with other countries, will lead to a reduction in CO_2 emissions of around 400 to 1,800 $ktCO_2$ a year, depending on the scenario.

State of progress in implementing previous Development Plans



Investment in 2019

+15.9%

versus 2018

Key to assets

- New substations
- Reorganisation of metropolitan areas
- Interconnections
- VHV grid upgrades
- HVDC under design

Key to work in progress

- Project in progress
- Project awaiting consents
- Completed project

STATE OF PROGRESS OF PREVIOUS PLANS AT 31/12/2019

Interconnectors and lines	Terna km	Status
Italy-Montenegro interconnector	445	Entered service
Italy-France interconnector	190	Under construction
Italy-Austria interconnector	24	Awaiting consents
Italy-Switzerland interconnector	100	Awaiting consents
Italy-Slovenia interconnector	114	Awaiting consents
Sardinia-Corsica-Italy interconnector	540	Consultation
HVDC Centre South-Centre North	221	Design
HVDC Italy-Tunisia	200	Planned
HVDC Mainland-Sicily-Sardinia	882	Design
Sorrento Peninsula interconnector	20	Entered service
Restructuring metropolitan areas	182	Under construction
Chiaramonte-Gulfi-Ciminna	173	Awaiting consents
Upgrade in the Mid Piave Valley	90	Awaiting consents
Colunga- Calenzano	85	Awaiting consents
Gissi-Foggia	140	Awaiting consents
Cassano-Chiari	36	Awaiting consents
Deliceto Bisaccia	36	Under construction
North-Calabria upgrades	10	Awaiting consents
Paternò-Pantano-Priolo	63	Under construction
Elba-Mainland	35	Awaiting consents

Substations

The substations of Apecchio, La Spezia, Priolo, Brennero, Belcastro and Picerno have entered service.

Connecting new plants

Terna has an obligation to connect all potential users requesting connection to the grid[81], identifying connection solutions in terms of criteria that guarantee the continuity and safe operation of the grid to which an applicant's new plant will be connected.

In particular, Terna is responsible for high and very high voltage connections to the NTG of plants with a capacity of 10 MW or more.

At any one time, Terna handles over 2,200 applications for connection to the grid in relation to future or existing initiatives.

1,388 procedures, relating in particular to the connection of plants using renewable energy sources (RES) to the NTG and representing total capacity of 61.7 GW, are currently active.

The publication of the Decree of the Minister for Economic Development and of the Minister for the Environment (4 July 2019), providing incentives in the three-year period 2019-2021 for electricity produced by plants powered by onshore wind, solar panels, hydro power and residual gas from treatment processes, has rekindled interest in the development of projects for RES plants and a rapid increase in applications for new connections to the NTG.

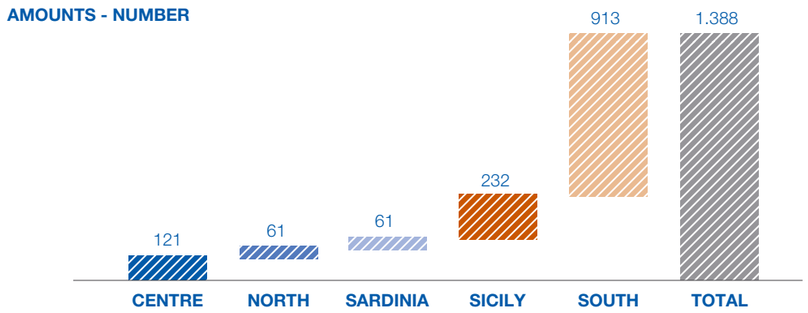
New projects at the development stage primarily regard wind and solar power plants, with a sharp rise in the number of photovoltaic projects in 2019 compared with previous years.

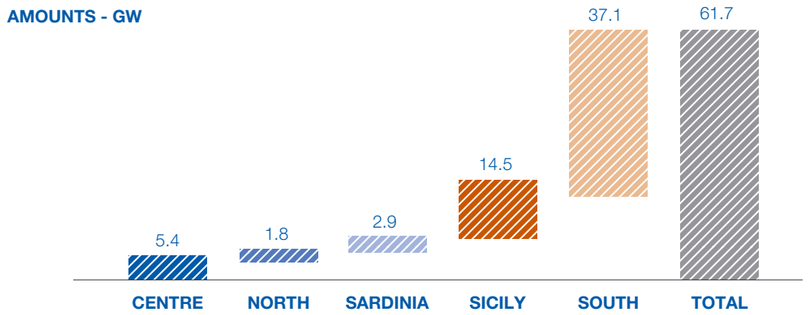
This shows that:

- 87% of the applications received are from southern Italy and the islands (representing capacity equivalent to over 88% of the total);
- a sharp increase was registered in applications for the connection of new distribution plants and for upgrades to existing plants by local distributors, with the aim of harnessing production from renewable sources;
- 12 connection contracts were signed in 2019 (representing total capacity of 222 MW), relating to the construction of new RES plants.

The chart below shows RES connection applications for connection to the NTG managed by Terna, broken down by source and geographical distribution.

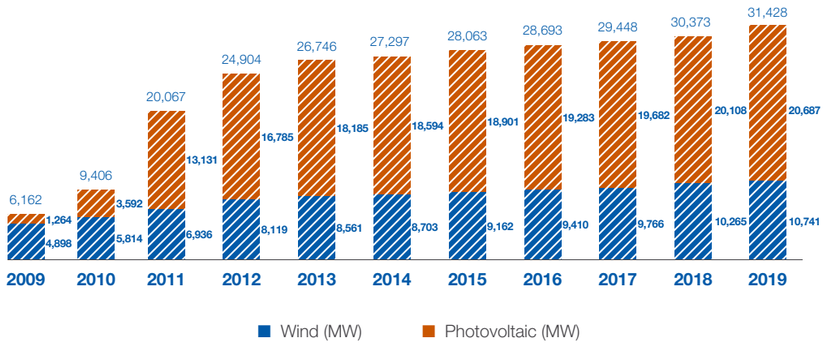
[81] Legislative Decree 79 of 16 March 1999 - art. 3, paragraph 1: "The Operator has the obligation to connect all those making such a request to the National Transmission Grid, without compromising continuity of service and provided the technical rules as per paragraph 6 of this article, and the technical and financial terms and conditions for access and interconnection established by ARERA, are complied with".





Data at 31 December 2019

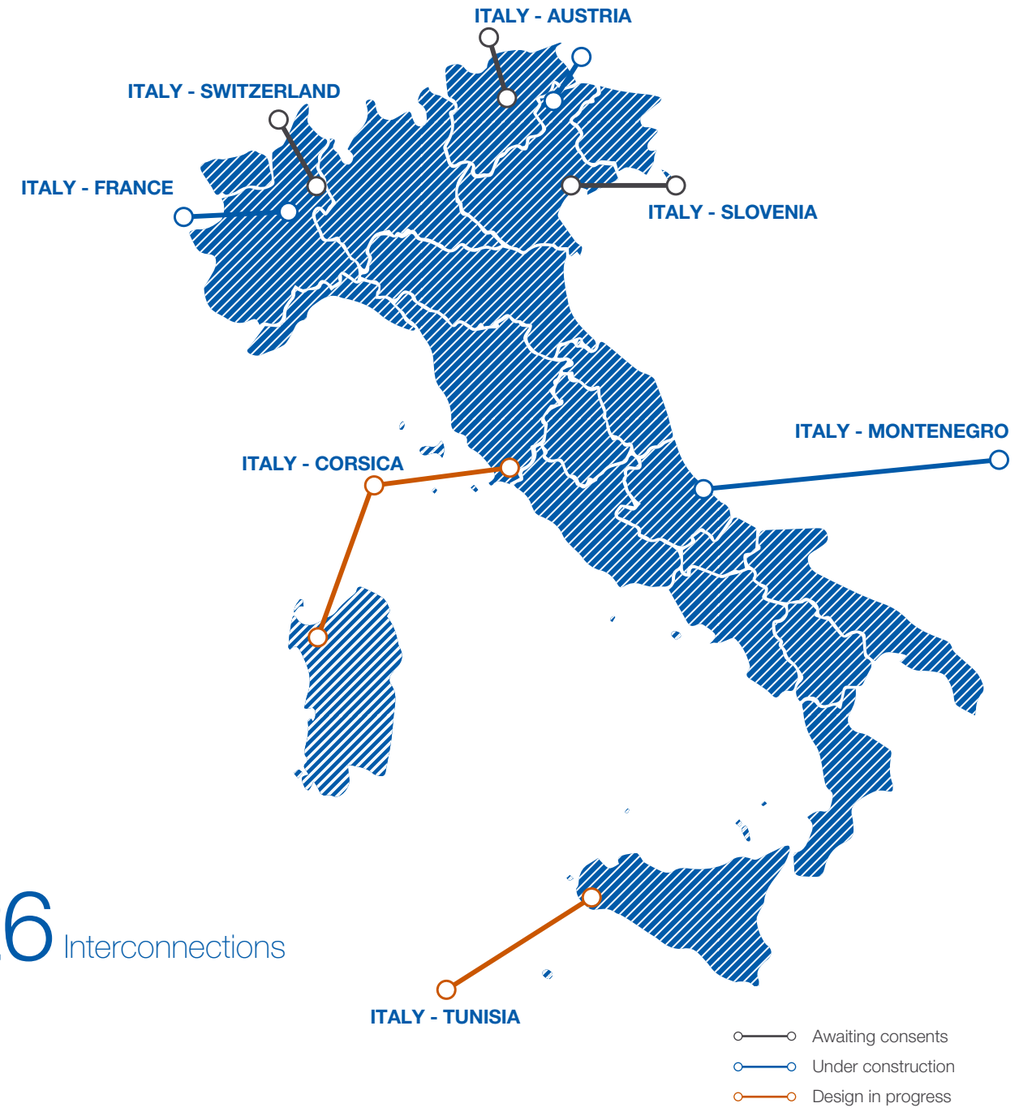
INSTALLED PHOTOVOLTAIC AND WIND CAPACITY 2009-2019* (GW)



** Provisional data from Terna for 2019.*

Overseas interconnections

Its geographical position makes Italy a natural hub in the Mediterranean area and it can count on an electricity border made up of 26 interconnectors[82], in addition to new lines under construction. This development work (shown on the following map) aims to increase interconnection capacity (Net Transfer Capacity - NTC) on the electricity borders with foreign countries, enabling a reduction in energy procurement costs and the integration of markets, with the possibility of having more resources for use in managing the Italian and European electricity system.



26 Interconnections

[82] These include 3 merchant lines, or lines not owned by Terna, and the Italy-Malta connection owned by Enemalta.




New Italy-Montenegro interconnection inaugurated

On 15 November 2019, the President of Italy, Sergio Mattarella, and the President of Montenegro, Milo Đukanović, attended Terna's inauguration of the new 445 km power line that connects Italy and Montenegro - via a submarine cable and an underground cable for the terrestrial part - between the electricity substations of Cepagatti (PE) and Lastva in the municipality of Kotor.

This interconnection is strategically important for the integration of electricity markets at continental level, enabling Italy to boost its role as a European and Mediterranean electricity transmission hub.

The project involves the longest high-voltage submarine connection Terna has ever built: 423 km have been laid under the Adriatic Sea, at a maximum depth of 1,215 metres, with an additional 22 km of underground cable, of which 16 km are in Italy (from the landfall point to the Cepagatti substation) and 6 km are in Montenegro (from Budva to the Kotor substation).

The Cepagatti and Kotor electricity substations are a prime example of civil and electrical engineering technological excellence, involving the application of world-class electrical engineering solutions.

The power line is the outcome of work carried out by a total of 124 companies (80 in Italy, of which 62% from Abruzzo, and 44 in Montenegro) at the construction sites where work began in 2012.

The two-way exchange of electricity flows will enable the diversification of supplies, and boost the reliability, efficiency, safety, environmental sustainability and resilience of the electricity grids on both sides of the Adriatic. At the same time, this will also allow for full exploitation of the potential for production from renewable sources, which are available in both Italy and the Balkans region.

Private interconnectors pursuant to Law 99/2009

In order to support the development of a single electricity market by expanding the infrastructure needed for interconnections with other countries, EU legislation was introduced, setting out guidelines for the creation of interconnections with other countries by entities other than grid operators.

The European guidelines have been introduced into Italian legislation by Law 99/2009, which assigned Terna responsibility for selecting - on the basis of public tenders - undertakings willing to finance specific interconnectors in exchange for the benefits deriving from them.

The law states that these entities, in exchange for a commitment to finance such projects, are required to commission Terna to build and operate the interconnectors.

A total of five interconnectors are planned for the borders with Montenegro (project completed in December 2019), France (at an advanced stage of completion), Austria (consents granted), Switzerland and Slovenia (currently awaiting the necessary consents).

Private "Italy-Montenegro" interconnector

On 28 December 2019, the first module of the 500kV direct current interconnector line between the substations of Villanova (IT) and Lastva (ME) entered commercial service. With a total length of approximately 445 km, and built partly with a submarine cable and partly with a terrestrial cable, it has enabled creation of 600 MW of interconnection capacity between Italy and Montenegro, of which 200 MW is available free of charge to the private backers selected in accordance with Law 99/09.

Asset management

Asset management is the set of systematic and coordinated activities and procedures that enables Terna to operate and maintain its assets in the best and most sustainable way, optimising the Group's return on investment and demonstrating its ability to create value.

The Asset Management system entails a structured approach based on best practices for managing assets throughout their lifecycle, taking into account the related cost cycles and associated risks. It plays an essential role in the efficient management of assets.

The Asset Management system combines management of both financial and engineering aspects and includes management of all the phases that make up the lifecycle of infrastructure: design, construction, commissioning, operation, maintenance, repair/replacement and, finally, decommissioning.

Terna's main benchmark is the international standard, ISO 55001:2014 "Asset Management", which specifies the requirements for an optimal asset management system. In 2018, Terna became the first Italian company to obtain the related certification.

To achieve its asset management objectives, Terna prepares an Asset Management Plan (AMP) specifying the activities to be carried out in order to maintain and renew its electricity grid infrastructure.

Infrastructure maintenance

Maintenance of electricity grid infrastructure is essential in order to guarantee quality of service.

The tools used to support maintenance activities are subject to continuous innovation, as regards identification of the most suitable interventions (MBI-Monitoring and Business Intelligence), the scheduling and execution of operations (WFM - Work Force Management) and the adoption of modern aerial inspection techniques for the electricity grid.

Infrastructure monitoring and control

- 34,740 checks on substations of various voltage levels (26,000 in 2018). There was a marked increase in checks compared with the previous year (due to a campaign to raise awareness of substation checks);
- visual inspections of 89,174 km of power line, of which 39,544 km using helicopters (visual + infra-red) with an average total frequency of around 1.3 inspections a year for each transmission line;
- a further 78,274 km of power line underwent instrumental controls, both from the ground (including with the use of the LLW or "live line working" technique), and from the air using helicopters to operate flights that use laser scanning surveys to identify any obstructions, particularly trees;
- inspections of 48,563 km of underground cable with a total average frequency of approximately 25 inspections per year.

Routine maintenance

Repairs are carried out when signs of deterioration are identified as a result of the monitoring process or by on-line sensors. These indications and any problems identified are processed by the expert system used to support decision-making (MBI-Monitoring and Business Intelligence). This system draws up the maintenance plan on the basis of engineering models developed by the Asset Management department.

Vegetation management

During 2019, vegetation was cut back on around 28,960 km of power line (the total length of line where vegetation was cut back); this has to be done to ensure the correct and safe operation of the lines.

Live line working

Approximately 3,100 checks and line maintenance interventions using live-line working were carried out. These activities, performed with the line in operation, increase the availability of the infrastructure and help to improve quality of service.

Renewal Plan

The Renewal Plan is based on an analytical method that, starting from consistent, objective technical criteria, identifies and evaluates extraordinary maintenance works ("renewal"), assessing the state of repair and technical status of components in relation to the conditions under which they operate and giving priority to components and plant that play a key role in operation of the grid.

The Plan's interventions are limited to parts of the infrastructure that effectively require attention in order to continue operating efficiently over as long a period of time as possible.

Renewal work is associated with three types of benefit:

- **Sustainability**, resulting from the use of more eco-friendly components, the installation of equipment with vegetable oil insulation, the replacement of fluid oil cables and improvements to the reliability of assets;
- **Innovation and digitalisation**, reflecting the adoption of monitoring systems for existing assets using digital and innovative solutions;
- **Resilience**: work on strengthening the NTG in order to increase the resilience of the infrastructure.

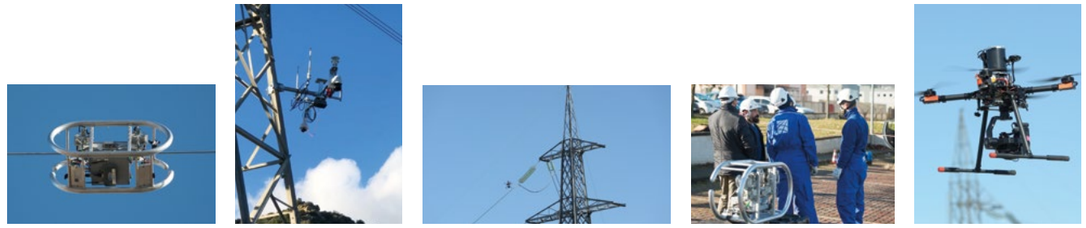
Renewal work (the replacement of components and entire systems) was carried out in 2019 at a cost of approximately €350 million in order to prolong the useful lives of power lines and substations. In terms of power lines, 2,747 km of conductors, 3,296 km of ground wires and 167 pylons were replaced; in terms of substations, 46 static machines, 221 circuit breakers, 353 disconnectors, 678 current transformers and 857 voltage transformers were replaced.

Security and resilience of the electricity system

The Electricity System Security Plan, prepared annually by Terna and approved by the Ministry for Economic Development, is a four-year programme that sets out initiatives to prevent and reduce the consequences of malfunctions on the electricity grid.

The current Security Plan describes the activities carried out during 2019, as well as those planned for the period 2020-2023. It breaks down into eight grid operation areas, regarding the planning, supervision, regulation and protection, restart and monitoring of the electricity system, as well as an area dedicated to safe and optimal management of renewable energy sources.

The Security Plan is fully in line with the evolution of the energy sector towards scenarios characterised by an increase in renewable energy sources, decommissioning of thermoelectric power plants and climate change.



The key drivers for the **2020 Security Plan** are:

1. **A system that is secure and fit for purpose** - With the gradual decommissioning of Italy's thermal power plants, accompanied by an increase in production from renewable sources on MV/LV networks not directly connected to the TSO network, the development of new strategies regarding the security and fitness for purpose of the electricity system is required. In this context, it is necessary to install:
   - reactive power compensation units in the areas of Central and Southern Italy and Sardinia, with a total amount of approximately 4,000 MVAr;
   - devices to control the grid's stability, improve voltage quality and reduce grid oscillations in central and southern Italy.
2. **Resilience of the electricity grid** - The initiatives regarding the installation of new devices to ensure the security of the electricity system in case of adverse weather events, especially those involving snow and ice, and the adoption of technological solutions to prevent the occurrence of such events and speed up the resumption of service, have been confirmed. Use of Terna's infrastructure to gather and transmit environmental data to support the grid's physical resilience is also envisaged.
3. **Digitalisation and system innovation** - Technological innovation is the factor that will enable Terna to respond to the new challenges arising from the energy transition. In this context it is necessary to create a proprietary fibre optic infrastructure, equipping high voltage systems with high-performing and reliable connectivity, as well as such features as remote control, remote operation, teleprotection systems and monitoring.

Special attention is also paid to the adoption of Cybersecurity solutions aimed at preventing/mitigating the risks of cyber-attacks, guaranteeing an adequate level of data security, and increasing the resilience of the digital services Terna provides (see page 157).

In 2019, investment in projects provided for under the Plan totalled approximately €190 million.

In the period 2020-2023, the 2020 Security Plan provides for investment totalling approximately €812 million, primarily relating to voltage regulation devices and initiatives designed to increase grid resilience and improve management and control of the grid, with the support of new digital technologies.

Resilience Plan

In accordance with MED directives[83], the Security Plan contains a specific section on the "Work plan for increasing grid resilience nationwide" (the Resilience Plan), especially in relation to the measures to be implemented in areas affected by wet snow. This section includes:

- a list of grid development, expansion and upgrade initiatives designed to increase the grid's mesh (included in the Development Plan);
- a list of extraordinary maintenance/renewal works (including scheduled interventions after an accurate assessment of the state of power lines);
- a list of mitigation initiatives.

The Resilience Plan for snow/ice presented in the 2020 Security Plan envisages investment of approximately €505 million over the five-year period from 2020 to 2024. This reconfirms the need to make the electricity system increasingly more resilient and capable of coping with extreme weather events, given that almost all the electricity transmission infrastructure is directly exposed to the immediate impact of atmospheric agents.

The experience gained in recent years, as well as the evolution of benchmark scenarios, have highlighted the need for Terna to shift from deterministic planning to a new probabilistic approach, which enables identification and quantification of the probability of multiple failures and contingencies.

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[83] Communication of 3 August 2017, regarding approval of the 2017 Security Plan.

Information and cyber security

2019 saw confirmation of the trend towards the progressive digitalisation of business processes and the growing pervasiveness of information technology, accompanied by an increase in the cyber risks associated with the use of these tools.

The entry into force of new European regulations, above all the implementation of the Network & Information Security (NIS) directive and the urgent measures regarding the "Scope of national cyber security", means that key operators in Italy's industrial sectors are having to rethink their security approach to cyber risks.

In this context, Terna's Information Security Governance model has been updated, regarding both the policy and procedural framework and the Information Risk Management operating programme.

The Model takes into account all the risk factors (organisational, technical and technological, physical, environmental and cyber, etc.) to which the Group's ICT ecosystem is exposed, including compliance with data protection legislation and efforts to combat cyber-crime, with the aim of countering their impact (disruption to computer networks or services critical to the operation of the electricity system and/or resulting in potential damage to the National Transmission Grid (NTG); loss of confidentiality; and the theft or alteration of sensitive, strategic and confidential data held by Terna relating to the electricity market and/or third parties).

Activities in 2019

Cyber security training

In continuation of similar previous initiatives, in 2019, Terna once again participated in specialist training events regarding cyber security issues, which were associated with a red-team-versus-blue-team training phase sponsored by ENTSO-E. In order to maintain a high cyber security awareness profile, at all corporate levels, cyber alerts relating to the main current cyber threats have been constantly circulated via internal communication channels (intranet, etc.)

Strengthening of the Information Security Framework

The Information Security Framework and, above all, the set of countermeasures that Terna puts in place to combat cyber risk was updated in line with the latest version of the NIST standard.

During 2019, Terna also began an assessment of the ICT systems that guarantee provision of the power transmission service and launched a plan to manage the related cyber risks.

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Consolidation of the capabilities of the Cyber Security Operations & Data Protection Centre

The process of strengthening and refining corrective actions and new initiatives designed to prevent cyber risk continued.

Terna's Computer Emergency Readiness Team (CERT) consolidated its real-time security monitoring, incident handling, threat intelligence and security content engineering, and threat hunting processes.

Information sharing with public bodies, other essential service providers and partners was further developed. The CERT also completed the accreditation processes for similar leading communities at international level.

The management of cyber threat intelligence is being consolidated via a dedicated platform.

The Cyber Security Assessment unit carried out periodic assessments of the vulnerabilities in Terna's IT systems and checks on the related recovery plans.

Identity and Access Management (IAM)

The Identity and Access Management (IAM) process regarding the management of access authorisations to critical IT resources has been strengthened, with particular regard to third parties who remotely access Terna's management systems.

Monitoring and cyber defence capabilities

During the year, the extension and update of security monitoring services for security systems and networks continued. With regard to the detection of cyber threats, a technological solution based on machine learning and artificial intelligence using non-formal logic was further developed. The continuous analysis, management and threat hunting activities using Indicators of Compromise (IOC) reports, especially those deriving from public bodies, are being consolidated. Work on the protection of SCADA systems using a whitelisting solution and on the logical segregation of networks is continuing.

418-1 >

As in previous years, no complaints have been received regarding data protection violations, or improper use or unauthorised processing of personal data entrusted to Group companies, neither via the dedicated mailbox (privacy@terna.it) nor through other reporting or communication channels.

Innovation

The current energy transition process requires a new systemic and organic approach to innovation, based around the acceleration of a portfolio of effective research, development and innovation initiatives in keeping with the Group's strategies.

In 2019, Terna decided to speed up its innovation processes.

The transition requires a new, smarter approach to managing the electricity system, which should be increasingly intelligent and flexible, both at the level of the grid, above all the Internet of Things or IoT (advanced sensors, big data, advanced analytics), and in terms of the market.

This will entail an unprecedented revolution that will rapidly result in the integration of distributed generation resources, storage and market demand for services, and the Europe-wide integration of national markets. Moreover, in the medium term, it will be necessary to ensure the progressive integrability and interoperability of electricity grids and other networks (transport, gas, water, etc.), in order to make the Italian and European economies stronger and more eco-sustainable.

The main tools Terna has put in place to develop innovation are:

- implementation of an **Open Innovation process**;
- creation of **Terna Innovation Hubs**;
- execution of projects within the Innovation Hubs via the **Innovation Factories and central departments**.

Today's form of innovation calls for an approach capable of opening up new possibilities for development and cooperation with the outside world and the creation of dynamic interactions, including close attention to start-ups.

The research, development and innovation portfolio is organised in a consistent manner via the **Innovation Plan**, from the birth of new ideas through to project development. New initiatives, which may be driven by requirements within the Company or by the Open Innovation process, are classified within a coherent framework, based on the principal new technologies earmarked by Terna:

- **Internet of Things**: IoT, industrial IoT, sensors and wearables;
- **Energy Tech**: technologies linked to the new energy resources (storage, demand side response, E-mobility) and smart grids;
- **Advanced Materials**: nanotechnologies, biomimicry and smart dust.

Open Innovation

Open Innovation is the approach adopted by Terna in developing its innovation initiatives.

This method encourages openness towards new areas for development within and beyond the Company, through dynamic interactions with universities and research centres, partnerships with peers and large industrial players, as well as access to start-ups and innovative small and medium-sized enterprises.

DESCRIPTION	STREAM
The signature of agreements and partnerships with energy businesses who are not competitors (TSOs, DSOs, utilities, etc.). Membership of and active participation in leading associations and international bodies involved in the electricity sector and innovation. Examples: SNAM, FCA, RTE, ENI, RFI, ENTSO-E, EASE	Energy sector and infrastructure peers
Collaborations to promote and coordinate studies and research with national universities and research centres of excellence in areas of strategic interest, in order to contribute to the preparation of expert researchers in this field and to promote and encourage initiatives aimed at teaching and training in the energy sector. Examples: Stanford University, Polytechnic University of Turin RSE, Ensiel	Universities and research centres
The signature of agreements and partnerships with other companies involved in the electricity supply chain (which are sometimes also suppliers) or in relevant industrial sectors not strictly related to the energy sector, regarding areas of common interest in the electricity sector or applications aimed at ensuring greater sustainability, cost-effectiveness and security in the management of grids. Example: FCA	Large companies and industries
The scouting of start-ups and mature enterprises in order to grasp opportunities for the development of specific initiatives of interest to Terna and/or business partnerships. Example: the "Next Energy" programme	Start-ups and SMEs

The examples given in the table are described on pages 164 and 166.

Terna Innovation Hubs

The Innovation Hubs are one of the main tools for implementing Terna's Innovation Plan, aimed at bringing together the key innovation players (internal and external) in a physical place dedicated to the development of ideas and projects, thereby contributing to innovation in local areas.
Within the Hubs, Terna interacts with innovative companies, start-ups, universities and research centres.

In 2019, Terna inaugurated its first three Innovation Hubs at local sites:

- On 9 April 2019, the first Innovation Hub was inaugurated at Terna's Turin site. The **Turin Innovation Hub** focuses on **IoT** (Internet of Things) and on advanced monitoring processes for power transmission infrastructure.
  Four areas of interest (satellites, drones, robots and advanced sensors) will be developed there, aimed at controlling the grid in a more dynamic and innovative way in order to guarantee the system's efficiency and security. Thanks to centralised data management it will be possible, among other things, to carry out predictive maintenance of assets, thereby cutting costs and increasing the reliability of the transmission grid.
- On 7 November 2019, the second Innovation Hub was inaugurated at Terna's Naples site. The **Naples Innovation Hub** focuses on **Digital to People**, namely on the digital transformation of business processes and the innovation of tools in the Human Resources, Organisation and General Affairs department.
  Digital Safety and Digital Human Resources projects will be developed at the Naples Hub, including processes designed to make asset maintenance more efficient, the creation of apps that virtually reconstruct field operations to be used for staff training, and implementation of a platform for collecting information about training needs for use in designing personalised training and digital coaching courses.
- On 17 December 2019, the third Innovation Hub was inaugurated at Terna's Milan site. The **Milan Innovation Hub** operates in the field of **Analytics and Energy Systems**, in order to develop tools and skills for increasingly "intelligent" power grid management, via the processing and interpretation of data and the development of algorithms and advanced simulation and forecasting tools. The Milan Hub has two separate laboratories. The first one focuses on Advanced Analytics, in order to interact with start-ups and innovative companies in a specially designed environment. The second one, nicknamed the Energy Tech Lab, is a laboratory for System Operators' innovation projects, where Terna staff can experiment with innovative technologies in order to develop solutions for secure operation of the electricity system. The Energy Tech Lab consists of three different environments:
  - **Simulation and Modelling Desk** - workstations for the simulation and modelling of process data from Terna's offline systems (historical data);
  - **Simulation and Modelling Integrated Systems** - workstations for simulation and modelling via synchronous interaction with Terna systems (online data);
  - **Operational Console** - workstations that provide synchronous interaction with Terna systems, which are capable of sending commands to the field.

Factories

The main strategies relating to Transmission Operator (TO) and System Operator (SO) activities regard two factories set up in 2018: the **Transmission Operator Innovation Factory** and the **System Operator Innovation Factory**.

The TO Innovation Factory includes the field of **Transmission Technologies** and is related to asset management, engineering and plant construction processes. It provides support for technological scouting, identification and implementation of technologies, and innovative processes and solutions for the evolution and continuous improvement of the NTG.

The SO Innovation Factory includes the **Dispatching and Conduction** process, as well as the related engineering, supervision, control, management and monitoring activities of the national electricity system to ensure the adequacy, security, economy, continuity, quality and efficiency of the transmission service, in accordance with predefined and measurable standards; and **System Engineering**, with a focus on the upgrade and management of the national electricity system, preparation of defence and restart plans, commissioning of plants, calibration and protection systems, malfunction analysis and statistics, and system innovation.

Digitalisation is the main enabler of innovation and the energy transition, to be implemented via projects in the following areas: connectivity (e.g. IoT technologies for Asset Management and dynamic network management), synchronous data management (e.g. advanced forecasting technologies for data management and electricity market processes), and asynchronous data management (e.g. big data technologies and machine learning for use in data analytics and the exploitation of historical data).

Innovation within the Company is supported and promoted via:

- **Systems and processes to support the enhancement of assets and internal expertise**;
- **Open Innovation** (see page 161);
- **Access to incentive and soft financing mechanisms** (e.g. tax relief for companies investing in research and development and patent box schemes).

Innovation, research and development initiatives

The key innovation, research and development initiatives undertaken in 2019 are summarised below.

Initiatives with universities and research centres

Stanford University

Terna has joined the research programme launched in October 2016 by the Precourt Institute of Energy at Stanford University (one of 30 research centres at this Californian university that specialises in engineering). The programme, called Bits & Watts as a reminder of the strong correlation between electricity grids and digital transformation, aims to identify solutions to facilitate and accelerate the current transition in the electricity sector, by combining university and industry expertise to develop innovative projects and solutions. The initiative's strategic value lies in its integrated approach to research focusing on three key areas, ranging from the coordinated management of electricity transmission and distribution grids, to the active integration of consumers within the electricity system and the use of data analysis in the development of new automated energy management tools.

In March 2019, the research project, to be carried out as part of the five-year partnership between Terna and California's Stanford University, got underway. The six-month project involved a member of Terna's personnel who was selected in 2018. The programme, which focused on the adoption of a nodal market model in Italy, concluded in August. The second part of the project, which is currently being organised, will see another colleague engaged as a Visiting Scholar at Stanford University to develop and investigate other aspects of the same research. The second part of the project will also last six months, starting in January/February 2020.

Polytechnic University of Turin Hackathon

The Hackathon Smart Tower was held at the Turin Innovation Hub in September. The event, involving teams made up of Polytechnic University of Turin students, was aimed at identifying profiles of potential future interest. Innovative proposals were developed to create an integrated monitoring and environmental protection system via the installation of sensors, fibre communication systems and computational environments on Terna pylons.

Initiatives with start-ups

Next Energy programme

Terna and the Cariplo Foundation ran the third edition (2018-2019) of the initiative, using the same proven structure for the three calls: "Call for Talent", "Call for Ideas" and "Call for Growth". The results of the third edition of Next Energy, which relates to the theme "Interaction between electricity infrastructure and local areas" and focuses on environmental sustainability, are:

- "Call for Talent": 10 new graduates were selected, who, from January 2019, had access to a 6-month internship at Terna's Innovation facilities;
- "Call for Ideas": 10 early-stage start-ups, with a medium to low level of technology readiness (a TRL of 2-5), were chosen for an incubation course at incubators selected by the Cariplo Factory. At the end of the course, the most promising start-up was awarded a €50,000 voucher to be exchanged for services. In May 2019, the Windcity project, which developed and produced V-Stream, a variable geometry turbine, was awarded a prize;
- "Call for Growth": In January 2019, with support from the Cariplo Factory, 5 start-ups were selected further engagement, with a view to defining use cases for subsequent partnerships with Terna.

In September 2019, the fourth edition of Next Energy was launched on the theme of energy transition, with a focus on aspects of the Innovation Plan (Full Internet of Things, Energy Tech, Advanced Materials and Sustainability Digitization Data Management & Analytics).

Advanced Materials for Sustainability (AMS) Call for Innovation

On 9 October 2019, the start-up, Particular Materials, won the AMS - Advanced Materials for Sustainability Terna Call for Innovation, aimed at developing latest-generation solutions as part of the quest for innovative materials to improve the efficiency and sustainability of electricity grid infrastructure.

Digital to Operations (D2O) Call for Innovation

On 8 July 2019, the start-up, Smart Track, won the D2O - Digital to Operations Terna Call for Innovation, aimed at improving the effectiveness of operations, with particular reference to personal safety issues, through the development of new technologies, devices, applications and high-added-value services to bring about "digital transformation".

Human Renewable Resources (HRR) Call for Innovation

On 21 June 2019, Eggup, an HR-Tech SME, won the HRR - Human Renewable Resources Terna Call for Innovation, aimed at identifying the best services, applications and latest-generation and high-added-value solutions, to help bring about a real digital transformation in human resources management.

Initiatives with large companies

MoU with SNAM

On 1st March 2019, Terna and SNAM signed a Memorandum of Understanding to define and implement joint initiatives regarding research, development and innovation and the potential for convergence between the electricity and gas systems.

In accordance with the legislative and regulatory framework, the agreement regards the development of shared scenarios for use in designing investment plans, the exploitation of convergence between the gas and electricity systems, the use of programmable renewable sources for power generation and the development of innovative technological solutions for the analysis and monitoring of infrastructure.

On 16 October 2019, Terna and SNAM signed a Memorandum of Understanding[84] regarding cyber security within the scope of the General States of the Italian Energy Transition.

Terna and SNAM will engage in synergistic actions to identify, prevent and counter potential threats, attacks and damage to IT infrastructure, in order to boost the security and protection of electricity and gas systems and networks, which are vital elements of national interest.

MOU with FCA

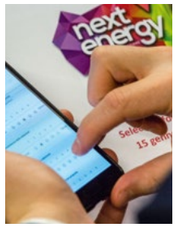
On 19 September 2019, Terna and FCA signed a MoU regarding joint testing of sustainable mobility technologies and services, such as vehicle-to-grid (V2G), which enables electric cars to interact with the grid thanks to a “smart” charging infrastructure.

Cooperation between the two companies includes the creation of the E-mobility Lab at Terna’s Turin site. This innovative technological laboratory will enable testing of the performance and capacity of electric vehicles in providing services to support the flexibility and stabilisation of the electricity grid, as well as their one-way and two-way interaction with the grid via a dedicated charging infrastructure.

MoU with The Mobility House

On 31 May 2019, Terna Energy Solutions and The Mobility House AG signed a Memorandum of Understanding to evaluate the potential for cooperation or a partnership in order to exploit commercial openings in the field of intelligent charging solutions, stationary storage and microgrids.

[84] See also page 112.



Other initiatives - Horizon 2020

OSMOSE

Work on the “OSMOSE - Optimal System-Mix of Flexibility Solutions for European Electricity” project, launched in January 2018 as part of the Horizon 2020 initiative, continued. The project aims to identify and demonstrate the technical feasibility of an “optimal” mix of flexibility solutions to maximise the technical and financial efficiency of the European electricity system, thus guaranteeing its security and reliability.

Terna’s role is to lead Working Package 5 (WP5, one of the 4 demonstrators of actual grid situations to be developed in Italy along a 150kV portion of the NTG between Basilicata and Puglia, and coordinate important Italian partners in order to develop a new Energy Management System, which will involve the combined, “optimal” use of Dynamic Thermal Rating, Power Flow Control devices, new forecasting techniques and demand side response resources, with the aim of giving the electricity system greater flexibility.

A culture focusing on safety, performance and innovation, but also company welfare and work-life balance initiatives. This is how Terna increases its human capital.

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7

People

In brief

Our people have a key role to play in enabling the current energy transition.

Alongside our well-established, but constantly renewed, commitment to the issues around safety and accident prevention[85], 2019 saw Terna continued with the programmes, launched last year, with the aim of boosting digital skills within the workforce[86] and supporting the engagement of young graduates[87] in view of the current process of generational turnover.

Company welfare witnessed the expansion of the "Terna Welfare[88]" project, launched on a trial basis in 2018. This initiative enables Terna Group staff to use a part of their performance-linked cash bonus to purchase welfare goods and services or to make supplementary pension contributions during the year. The Company also extended the "Smart Working" project to include a further 500 staff in Rome, Turin, Milan, Padua and Naples.

The percentage of women in the total workforce continues to grow, rising from 9.0% in 2005 to 13.9% at the end of 2019.

HIGHLIGHTS:

208 new hires
under 30 years of age

98%
of personnel
took part in at least one training course

19.8%
of senior managers are women ahead of the percentage of women in the total workforce (13.9%)

[85] See the paragraph "Health, safety and correct working practices" on page 185.
[86] See the paragraph "Terna 4.0 Go Digital" on page 179.
[87] See the paragraph "Onboarding Terna" on page 179.
[88] See the paragraph "Terna Welfare" on page 183.

Terna for its people

The Company's human resources are, at the same time, a vital element in the business and people whose aspirations should be nurtured and rights respected. Terna's commitment to its staff is characterised by:

- **attention to safety and accident prevention** (see page 185);
- **investment in training**, to ensure that the Company and its staff have the necessary technical skills and expertise (see page 178);
- the creation of management and development systems designed to **improve performance** and foster **opportunities for growth** (see page 181);
- **remuneration and welfare policies** that aim to align individual performance with business objectives and provide people with economic security (see page 182);
- **listening to employees** by using ways to gauge their opinions (see page 175);
- a complex and well-structured system of **industrial relations based on engagement with trade unions** (see page 177).

The Human Resources, Organisation and General Affairs department is responsible for devising and implementing staff policies, including aspects relating to occupational health and safety.

Overview of the workforce

The Group employs a total of 4,290 people (up 38 from 2018). This figure includes 351 Tamini Group personnel, 50 individuals employed under local contracts by overseas subsidiaries (25 in Brazil, 10 in Montenegro, 8 in Peru and 7 in Uruguay) and 17 people employed by Avvenia, a company acquired in 2018.

The tables below present Group data on a like-for-like basis compared with 2018, therefore excluding the Tamini Group, Avvenia and overseas subsidiaries, reporting a total of 3,872 personnel (see note on page 28).

401-1 >

405-1 >

COMPOSITION OF THE WORKFORCE

	2019	2018	2017
Total	**3,872**	**3,843**	**3,508**
- of whom men	3,334	3,326	3,076
- of whom women	538	517	432
By category			
Senior managers	61	57	61
Middle managers	597	614	550
Office staff	2,200	2,124	1,873
Blue-collar workers	1014	1,048	1,024
By type of contract			
- permanent*	3,869	3,842	3,508
- of whom men	3,332	3,325	3,076
- of whom women	537	517	432
- fixed-term	3	1	0
- of whom men	2	1	0
- of whom women	1	0	0
By type of employment			
- full-time	3,854	3,822	3,478
- of whom men	3,329	3,320	3,065
- of whom women	525	502	413
- part-time	18	21	30
- of whom men	5	6	11
- of whom women	13	15	19
By age			
- below the age of 30	987	885	706
- between the ages of 30 and 50	1,733	1,681	1,553
- over the age of 50	1,152	1,277	1,249
Average age (years)			
Average age	40,8	41,8	42,6

** Permanent contracts also include apprenticeships.*

The total turnover rate for incoming staff (7.5%) continues to reflect the policy of generational turnover launched in 2017, together with the growth outlooks included in the Strategic Plan.

287 people joined the Group in 2019, including 208 under the age of 30. The process of generational turnover has resulted in a gradual reduction in the average age and a constant increase in the level of education among the Group's workforce. In 2019, 95.8% of employees had a university degree or high-school diploma. The average length of service is 14.1 years.

The turnover rate for outgoing staff is 6.7%. This figure is linked primarily to retirements and, to a lesser extent, to voluntary resignations (43 in 2019).

At 31 December 2019, there were 11 active agency contracts (compared with 13 in 2018 and 51 in 2017).

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WORKFORCE TRENDS

	2019	2018	2017
Total employees	**3,872**	**3,843**	**3,508**
Employees recruited during the year	**287**	**420**	**243**
- men	240	326	202
- women	47	94	41
- below the age of 30	208	284	168
- between the ages of 30 and 50	73	130	64
- over the age of 50	6	6	11
*Rate of recruitment %**			
Total	**7.5**	**12.0**	**7.0**
- men	6.2	9.3	5.8
- women	1.2	2.7	1.2
- below the age of 30	5.4	8.1	4.8
- between the ages of 30 and 50	1.9	3.7	1.8
- over the age of 50	0.2	0.2	0.3
Employees leaving during the year	**258**	**85**	**203**
- men	233	76	187
- women	25	9	16
- below the age of 30	21	16	6
- between the ages of 30 and 50	24	16	14
- over the age of 50	213	53	183
*Turnover rate %***			
Total	**6.7**	**2.4**	**5.9**
- men	6.1	2.2	5.4
- women	0.7	0.3	0.5
- below the age of 30	0.5	0.5	0.2
- between the ages of 30 and 50	0.6	0.5	0.4
- over the age of 50	5.5	1.5	5.3

* *The rate of recruitment shows the ratio of employees joining the Company to the number of employees at 31 December of the previous year.*
** *The turnover rate shows the ratio of employees leaving the Company to the number of employees at 31 December of the previous year.*





EU15 >

Generational turnover

Terna dedicates a host of initiatives to generational turnover which, since 2015, have been bolstered considerably due to the combination of a voluntary early retirement scheme for staff approaching retirement age and stepped-up recruitment.

The most important of these include the transmission of knowledge and experience, often one-of-a-kind, via in-house tutoring as part of training programmes and on-the-job experience.

In the five-year period between 2015 and 2019, incoming staff totalled 1,505 compared with 1,070 outgoing staff.

Below is an overview of personnel who could potentially qualify for retirement in the next 5 to 10 years (estimated on the basis of available data regarding ages and pension contributions):

a. As at 31 December 2019, **6.5%** of the workforce in the next 5 years, of which:

- Senior managers 0.1%
- Middle managers 1.6%
- Office staff 3.4%
- Blue-collar workers 1.5%

b. As at 31 December 2019, **17.2%** of the workforce in the next 10 years, of which:

- Senior managers 0.4%
- Middle managers 4.4%
- Office staff 8.9%
- Blue-collar workers 3.4%

IMPACT OF GENERATIONAL TURNOVER IN THE PERIOD 2014-2019*

INDICATOR	UNIT	2019	2014
Average age	yrs	40.8	46.6
Average length of service	yrs	14.1	21.2
Percentage by composition of age: >50	%	29.8	45.3

** The period in question starts from 2014. The first generational turnover plan, involving the recruitment of 300 young people, took place in 2015 (see the 2015 Sustainability Report, page 126).*

Employee engagement

As engagement tools, Terna uses direct or sample surveys, internal communication initiatives and focus groups honing in on specific topics.

In 2019, the Company conducted the “2019 Engagement Survey”, an internal climate survey involving the entire workforce. The response rate was 85% (up 5% on 2017).

Terna’s overall engagement score of 85 represents an increase compared with 2017, as well as a climb of three percentage points compared with the average across other companies in Italy that use this tool.

The survey measured the degree of people’s engagement based on three components - rational (understanding of corporate objectives and strategies), emotional (sense of belonging and pride) and motivational (availability and willingness to contribute). The results were then compared with those produced by other leading Italian companies through a weighted sample of over 135,000 employees working in Italy in 141 leading companies.

An improvement was shown in all of the priority areas compared with two years ago, thereby illustrating the effectiveness of the action plan drawn up based on the 2017 results.

Internal communication

Internal communication can make a major contribution to fostering a sense of belonging and pride among the workforce, essential in enabling an organisation to respond to challenges and achieve its goals.

It has a vital role to play in spreading the Company’s corporate culture and in its development, encouraging team work and achieving ever greater integration between central and local units and among the various teams through the comprehensive sharing of information and key messages. The main tools are the intranet, communication plans and events organised around the country.

With the aim of sharing and cementing Terna’s unique and distinctive values, in December 2018, the Company launched its first Identity and Values campaign. The table below describes the main tools used in internal communication.

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Publications

Type	Circulation / No. of news items
“Internamente” (company intranet) / headline news	68 news items published.
“Internamente” (company intranet) / other news	321 news items published.
“Internamente” (company intranet) / videos	54 videos published.
“Identity and Values” campaign	Videos and displays within the main offices.
Communication plans	Terna Welfare, Terna Smart Working, Terna Plastic Free, People4Performance, etc.
Office displays (panels, leaflets)	Strategic “Grids and Values” plan, Terna Welfare, Values, etc.

Events

Type	Target
The Terna Achievement Award (Premio Terna al Valore)	Personnel who have distinguished themselves for their courage, commitment, competence and sense of responsibility.
Open2Family Cultura - Evening cultural events	Personnel and their families.
Open2Family Games - Day-long events focusing on sports, games and entertainment	Personnel and their families.
End-of-year greetings from senior and middle management	All members of staff connected via streaming on the intranet.

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Industrial relations[89]

Staff engagement is also achieved via structured dialogue with labour union representatives. All Terna employees are covered by the collective labour agreement adopted by companies in the electricity sector[90].

In 2019, the unionisation rate of Terna’s workforce was 45%, with membership concentrated among the largest trade unions.

Relations between Terna and the trade unions are regulated, at Group level, by the “Industrial relations system protocol”, which sets out the terms of bargaining, dialogue, consultation and prior and/or specific reporting. In line with current regulations, relations between trade unions and the entire Group’s workforce are facilitated via provision of dedicated space and notice boards at each workplace.

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The involvement of trade union organisations in the event of organisational changes, a central pillar of industrial relations, is governed by legislation, industry contracts and company agreements. In accordance with trade union agreements in force at Terna, in the event of significant organisational changes, preliminary discussions are held with trade unions.

In the three-year period 2017-2019, negotiations with trade unions led to the signing of 41 statements of agreement.

Finally, in 2019, meetings were held by both the Bilateral Training Committee (3 meetings) and the Bilateral Health, Safety and Environment Committee (2 meetings), in order to boost dialogue, discussion and participation in these areas.

Regulation of industrial action in the electricity service sector

In the event of industrial action, the essential services needed to ensure continuity of service are regulated by the National Labour Union Agreement signed in February 2013. As far as Terna is concerned, some shift workers who work in dispatching (real-time monitoring of the national electricity system; the remote operation of transmission plants; checks on production plans and the procurement of production resources; the monitoring, coordination and operation of IT systems; ancillary services and infrastructures used in dispatching) and staff from the Security Operations Centre are prohibited from taking part in industrial action.

Whilst entitled to suspend their normal duties during a strike, staff on call are obliged to ensure that they are contactable, even during the hours scheduled for a strike.

[89] The data reported in this section do not include Tamini Trasformatori S.r.l. neither Avvenia.
[90] Tamini Group employees are covered by the collective labour agreement for the engineering sector; Avvenia’s employees by the collective labour agreement for trading companies.

HR process

Recruitment and selection

Staff recruited on the external labour market are university graduates, especially engineers, and graduates from technical colleges, most of whom have specialised in electrical engineering. Once hired, new recruits acquire the specific knowledge and skills they need through specific training courses.

In 2019, selection focused on boosting talent acquisition by introducing new initiatives aimed at bolstering the recruitment of new personnel and enhancing the development of existing staff.

Next Energy, an excellence programme designed to insert new university graduates with an interest in innovation, reached its fourth edition in 2019. This and other initiatives involving start-ups with projects for staff recruitment and training are described in the section entitled "Open Innovation" on page 161.

In order to sustain a virtuous exchange process between the Company and the outside world and support the search for new resources, the Human Resources, Organisation and General Affairs department manages relations with schools, universities and job centres.

To this end, the third edition of **Alternanza Scuola Lavoro** work experience scheme took place in 2019. This project involved 15 vocational training institutes from all over Italy and approximately 750 4th and 5th year students and resulted in the recruitment of the first 4 twin-track apprentices[91].

Finally, the Company's continued its partnership with Luiss University to support engineering and economics students from South American countries with the second edition of the **International Training Program**, launched in July 2019. Two candidates were selected - one from Brazil and one from Peru - and in September they began the two-year specialist course in Business Administration at Luiss University.

Training

Training is ongoing and provided at Terna throughout employees' working lives. The aim is to create value for people by increasing and diversifying their skills (employability) and to create value for the Company by developing human capital in line with its mission and business strategy.

[91] A twin-track apprenticeship is a mixed-purpose contract providing for both continued instruction at the apprentice's school and professional training at the Company.

The **"Terna 4.0 Go Digital"** project, launched in 2018 with the goal of bolstering digital aptitudes and an innovation-oriented mindset, continued in 2019.

Terna 4.0 Go Digital

The **Terna 4.0 Go Digital** project continued in 2019 via a comprehensive and well-structured training program. The Envisioning Academy got underway with training and blended sessions involving around 350 colleagues having outstanding digital skills and the launch of the Envisioning Community, a thematic web platform that allows users to share content.

A Hackstorm, two days of brainstorming aimed at finding innovative business solutions, was also carried out. The project will continue in 2020 with selected staff members being introduced to the Lean&Agile methodologies.

As in previous years, 2019 saw continuation of training initiatives to boost professional, technical and operational skills (e.g. the Multiskill project), transmit highly specialist know-how (live-line working techniques), ensure compliance with workplace health and safety regulations (page 185), privacy (page 89) and the 231 organisational model (page 86), as well as facilitate the insertion of newly hired staff.

"Onboarding Terna", designed for employees who have joined the Company since 2015 and aimed at building awareness of Terna's values and team-working skills, likewise continued.

Onboarding Terna

Launched at the end of 2018, the **"Onboarding Terna"** project continued with the aim of supporting engagement and strengthening a sense of belonging and inclusion on the part of new staff.

Thirty-six editions of the two-day course *"Noi siamo On Board-facciamo rete per crescere insieme"*, targeting staff under the age of 35 and employed by the Company since 2015, have been completed with the involvement of 827 people. The second part of the course was launched in mid-April and involved an additional 171 colleagues hired during the year. Other encounters to build on previously acquired skills and knowledge were also held in April.

Mention should be made of the following **job swap initiatives for employees** of Terna:

- **Guest Auditor Program**, which enabled two internal staff members to join the Internal Audit team for a period of around 3 months;
- **TSO Erasmus Terna - RTE** (second edition), involving the selection of 2 employees from Terna and 2 employees from the French TSO, Réseau de Transport d'Électricité (RTE), to exchange jobs for 4 weeks;
- **Exchange Program Terna - Caiso**, which made it possible to host a senior manager from the California Independent System Operator (Caiso) for one month in the dispatching department. In 2020, a Terna employee will enjoy the same experience in California;
- **Visiting Scholar Stanford**, offering the chance to attend a semester of courses at this prestigious California university and take part in a strategic research project.

"DEVELOPING COMPETENCIES"

KPIS AND TARGETS IN THE STRATEGIC PLAN 2020-2024

KPI	2019		TARGET 2020	TARGET 2021
	TARGET	RESULT		
DIGITAL SKILLS				
Number of people trained in digital skills (cumulative)	450	882	100%	100%
SAFETY CULTURE TRAINING VIA THE "ZERO ACCIDENTS" PROJECT (FROM 2019)				
Infrastructure and unit personnel who have received safety training (%)	50%	87%	100%	100%

In 2019:

- 183,193 hours of training were provided, of which 50% led by in-house trainers;
- 98% of staff members attended at least one training course;
- 47 hours of training were provided per capita, in line with the target of 45 hours per capita set for the two-year period 2018-2019, representing ongoing excellent performance compared with the average for Italian blue chips.

404-1 >

TRAINING

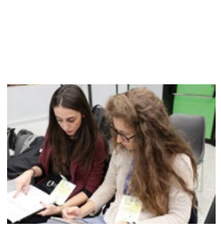
	2019	2018	2017
Average hours of training			
- per employee*	47	55	50
*By category***			
- senior managers	40	29	17
- middle managers	28	32	36
- office staff	43	59	43
- blue-collar workers	66	64	73
*By gender****			
- men	47	53	50
- women	30	47	32

* *Ratio of total hours of training to the average number of employees.*

** *Ratio of total hours of training by category to the average number of employees by category.*

*** *Ratio of total hours of training by gender to the total number of employees during the year (including those working for the Company for less than a year) by gender.*

Further information on training indicators is provided in the "Key Indicator Tables" on page 270.





Development

In support of human resource development policies, Terna utilises the Professional System as its main tool for managing roles, skills and development paths within the organisation, enhancing competencies and crafts ("professional families") identified on the basis of core business and corporate processes.

Notably, as regards human capital development initiatives, the People for Performance system was extended to around 2,600 staff in 2019. Launched in 2018, the system is used to define and communicate objectives, outcomes and expected organisational behaviours, as well as to promote a culture of appraisal and feedback between managers and members of their team.

The objective is to gradually cover the entire workforce starting from 2020.

In order to support achievement of its strategic objectives and performance, Terna has introduced variable incentive schemes differentiated by type of role:

- a Long-Term Incentive (LTI) plan, linked to long-term corporate objectives, including sustainability, for managers who perform key roles in attainment of the Company's strategic objectives;
- MBO (Management By Objectives) for management, linking the amount of individual bonuses to:
  - the extent to which quantitative objectives are achieved, both at company and individual level, some of which relate to Terna's social and environmental commitments (e.g. the occupational safety indicator);
  - the performance' qualitative assessment, based on management behaviours.

The following table shows the percentage of employees who have taken part in the People for Performance appraisal process and in management incentive schemes:

"APPLICATION OF PERFORMANCE EVALUATION"

KPIS AND TARGETS IN THE STRATEGIC PLAN 2020-2024

KPI	2019		TARGET 2020
	TARGET	RESULT	
Employees taking part in performance appraisals (%)	70%	75%	85%

To boost productivity, Terna has also signed an agreement with trade unions regarding a performance-related bonus for blue-collar workers and office staff, which takes into account the Company's overall performance and specific objectives linked to employees' operational performance.

Company welfare

Pay and conditions for Terna's staff (remuneration, working hours, holidays and other aspects of employment) are, as in other large companies in the electricity sector, substantially better than the Italian average.

401-2 >

Benefits are provided for all employees, including those on part-time contracts and apprenticeships:

- supplementary healthcare;
- supplementary pension schemes (voluntary);
- insurance for non-occupational accidents;
- recreational associations;
- maternity leave that goes beyond legal requirements;
- soft loans for first-time homebuyers and to meet needs arising from serious family situations;
- canteen or food vouchers.

Terna's employees (excluding senior managers, who can participate in a different fund) are automatically enrolled into the Supplementary Healthcare Fund for Enel Group employees (FISDE).

Medical care for illnesses is partly covered by FISDE, for members (enrolled employees) as well as their dependents.

BENEFICIARIES	INFORMATION AND RISK PREVENTION	TREATMENT
Employees	Yes	Yes
Employee's dependents	No	Yes

201-3 >

Terna offers its staff defined contribution supplementary pensions on a voluntary basis. Senior managers can join the Fondenel[92] pension fund. Other employees (blue-collar workers, office staff, middle managers) can join the Fopen[93] pension fund.

During their working lives, all employees are contractually entitled to receive a "loyalty bonus" on reaching their 25th and 35th year of employment at the Company.

In 2018, Terna also launched 2 initiatives focusing on company welfare and smart working, both consolidated in 2019.

[92] http://fondenel.previnet.it

[93] www.fondopensionefopen.it

Terna Welfare

Given the positive outcome in 2018 and following the stipulation of specific agreements with trade unions, **Terna Welfare** was confirmed and enhanced in 2019. This initiative enables Terna Group staff to use a part of their performance-linked cash bonus to purchase welfare goods and services or to make supplementary pension contributions.

The amount chosen is tax-exempt and topped-up by the Company by 15% (12% in 2018). In defining the plan, special attention was given to the "Family" aspect, especially as regards the portion of the bonus earmarked by employees to reimburse family-related expenditures pertaining to schooling and education, such as tuition, study holidays, books and fees.

Smart Working

To facilitate reconciling work and home life, the **Smart Working** trial was launched on 1 July 2018, involving around 100 employees who work at the Company's Rome offices.

In view of the positive outcome and favourable opinions, in 2019 smart working was extended to 500 employees in Rome and in other cities such as Turin, Milan, Padua and Naples. In line with Terna's wish to promote company agreements on these topics, as in 2018, the extension in 2019 was also the result of a specific agreement signed with trade unions.

Care for children and other family members

< 401-3

Italian law regulates maternity leave and parental leave and provides general coverage. In comparison, Terna offers more favourable conditions, in application of the National Collective Labour Contract for the industry and company agreements. The most important measures include:

- five months' paid maternity leave, provided to the mother before and after birth. Terna guarantees full pay compared with the 80% provided for by law;
- an additional six months of parental leave may be taken on 30% pay. Terna has raised this amount to 45% and 40%, respectively, in the first and then in the second and third months of this period. Paternity leave may also be taken, up to a maximum of eleven months of total leave taken by both parents. If not used in the first six years of a child's life, the leave may be taken later up to when the child turns twelve, but in the form of unpaid leave;
- unpaid leave, with no restrictions on use, in the event of illness of children under the age of 3;
- three days per month, also in the form of hours, of paid leave to look after children or other family members with serious disabilities;
- special leave for two years in the event of a child or other close relation having a serious disability;
- paid leave to workers who are new fathers, with up to 5 days paid by the Company as well as 5 paid by the state (INPS);
- more flexible work hours for parents with children attending junior high school.

Under a specific union agreement signed in 2017, Terna has also introduced additional measures to improve the work-life balance and further support parenthood such as, by way of example, the possibility to take half a day's leave to accompany children on their first day of primary school (50 employees took advantage of this option in 2019). Moreover, the plan to set up a child-care centre at the Company's head office in Rome is currently being implemented, with the aim of maximising working parents' balance between their work and parental commitments.

The table below shows the number of employees who have taken at least 29 days' parental leave.

	2019	2018	2017
Total	**18**	**16**	**26**
- women	15	14	25
- men	3	2	1

Employees taking parental leave in the three-year period shown subsequently returned to work.

In 2019, 28 workers took compulsory maternity leave.

Finally, as regards collaboration with start-ups (see page 161), an initiative based on the MAAM (Maternity As A Master) approach has been planned for 2020, entailing the use of a training method that transforms life experience (parenthood/caregiving) into business and managerial skills, thereby creating a virtuous continuity between home and working lives.

Health, safety
and correct working practices

Working safely, without putting their health at risk, is a fundamental right of employees, and Terna invests a great deal in order to guarantee this right for its people.

A safety culture is present across the Company, so that the supply chain actors who play a decisive role in operations can also be involved in the process of ensuring constant attention and improvement.

The involvement of employees in matters relating to health, safety and the environment is currently regulated by law and collective bargaining, which provide for the election by all employees of Staff Representatives for Safety and the Environment, who thus represent the entire workforce. < 403-1

The National Collective Labour Contract also provides for the establishment of a bilateral body - at electricity sector level - on "Health, safety and the environment", tasked with making proposals relating to the monitoring and coordination of training on environmental and safety issues. < 403-4

Protecting employees' safety

Terna's commitment to safety must be seen in the context of existing regulatory provisions. Italian safety legislation (Legislative Decree 81/2008 "Consolidated law on the protection of health and safety in the workplace") is one of the most stringent among any such laws in Europe and requires companies to carry out an analytical assessment of risks to employees' health and safety. At Terna, special attention is paid to analysing the risks deriving from interference caused by works being carried out by contractors and subcontractors, covering all the activities involved in work at a construction site. Terna's approach to occupational safety hinges on a system of tools that are applied to all corporate processes, including:

Clear safety policy guidelines

The importance of protecting people from physical harm is enshrined in Terna's Code of Ethics. The occupational safety policy sets out its guidelines with an explicit commitment to promoting accident prevention for all employees, including those employed by contractors.

BS OHSAS 18001:2007 certified management system

This system, which covers 100% of the Company's activities and is incorporated within the quality and environment system, is based on accurate risk assessment, with a particular focus on activities entailing electrical risk (Provisions for the Prevention of Electrical Risk).

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Organisational unit responsible for safety

This unit comprises a number of health and safety officers responsible for workers throughout Italy and for those employed by contractors, including the oversight of safety at construction sites.

This organisation is assisted by a central unit that sets policies and guidelines, carries out inspections at workplaces and construction sites and also constantly analyses and monitors the risks arising from the Company's activities.

Supervisory activities

The correct and complete application of procedures is subject to inspections by Prevention and Protection Service managers, internal compliance checks for all Terna Group companies and the external audits required for certification. Elected staff representatives, responsible for verifying the application of standards (staff and health and safety representatives), are also present.

As regards activities carried out by contractors, Terna conducts inspections of its own construction sites in order to verify the correct application of accident prevention regulations by the responsible health and safety officers and by contractors (see also page 190).

"Safety" section of the Document Centre on the Company's Intranet

An archive of health and safety legislation (national, regional and technical regulations issued by the competent bodies) is available on the Company's intranet.

Information and training activities

All staff have access to key information regarding health and safety and innovations through various channels, including the Company's intranet and information meetings.

In 2019, around 65,470 hours of training were dedicated to health and safety issues, of which over 50% was aimed at blue-collar workers (additional data about training may be found on page 270). The facilities and equipment at the Viverone Training Centre (BI) enable training to be carried out on safe working practices when climbing pylons (through the use of life-size pylons), and regarding live-line working in a controlled environment.

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Occupational safety performance targets

The system of indicators includes the "occupational safety indicator", comprising the injury rate and lost day rate, to which the variable remuneration of personnel in the departments concerned is linked.

Applied research

A specific organisational unit in the Engineering department tests safety materials and devices, assessing their reliability by means of strength tests under extreme conditions.

The actions taken are designed to create an increasingly deep-rooted safety culture, based on a constant and continuous commitment, resulting also in new forms of initiative. This led to the development of a new structured and integrated project starting in 2018, called *Zero Infortuni* ("Zero Accidents"), which aims to promote a global approach to safety involving all the Company's staff, as well as people working at Terna's plants in various capacities.

Zero Accidents

The project consists of a series of different activities focusing on:

- operational safety (working methods, equipment, etc.);
- behavioural safety (training, etc.);
- the safety of personnel employed by external contractors.

In terms of operational safety, among other things, an effective internal prevention system has been created. This involves a new way of conducting site inspections, replacing the traditional onsite visits with a new approach centred around an assessment of the organisation and processes.

A training campaign inserted into the "Zero Accidents" project involving more than 1,500 colleagues got off the ground in March 2019. The project included a workshop for the heads and coordinators of Transmission Operations departmemnts located throughout Italy and an experimental training initiative, comprising 60 courses designed for technicians and operational personnel.

As concerns external contractors, procedures have been put in place for close monitoring of the safety of personnel and for analysing any injuries that take place. Procedures have also been adopted in order to record the data needed to compute contractors' injury rates.

403-2 >

Occupational injuries

As in previous years, there were no fatal workplace accidents among the Group's employees in 2019. Likewise, there were no serious injuries resulting in an initial prognosis of more than 40 days. The total number of injuries amounts to 34, including 5 with a prognosis of less than 3 days.

The injury rate reports a decrease compared with the previous year (further details regarding health and safety data and injury rates by gender are provided in the "Key indicator tables" on page 273).

OCCUPATIONAL INJURIES SUFFERED BY TERNA EMPLOYEES - GRI-ILO DEFINITIONS*

	2019	2018	2017
Injury rate	0.98	1.28	0.81
Lost day rate**	39.31	34.40	27.62
Absentee Rate***	6,378.6	6,937.4	6,239.9
Occupational Diseases Rate****	0	0	0
Number of injuries	34	40	24
- of which serious, where the initial prognosis is more than 40 days	0	0	1
- of which fatal	0	0	0

* *As required by GRI protocols, the definitions adopted are those provided for by the International Labour Organisation. To aid comparison with other sources, the following notes show the figures for the same indicators calculated using alternative formulae.*

***Injury Rate**. The number of injuries registered and reported to the competent social security office, divided by the number of hours worked during the year, multiplied by 200,000 (corresponding to 50 working weeks x 40 hours x 100 employees).*

*To aid comparison with other sources, the injury rate is also calculated in accordance with the UNI 7249:2007 Standard. This indicator has been calculated using a multiplication factor of 1,000,000 instead of 200,000 (thereby resulting in an injury rate 5 times the ILO injury rate). Based on this method of calculation, the injury rate is **4.9 in 2019, 6.4 in 2018** and **4.0 in 2017.***

***Lost Day Rate**. The ratio of days lost due to injury to the number of hours worked during the year, multiplied by 200,000. The days lost are calendar days and are counted from the day on which the injury occurs.*

*To aid comparison with other sources, the lost day rate is also calculated in accordance with the UNI 7249:2007 Standard. This indicator has been calculated using a multiplication factor of 1,000. Based on the method of calculation, the lost day rate is **0.20 in 2019, 0.17 in 2018 and 0.14 in 2017.***

***Absentee Rate**. The number of days of absence due to illness, strikes, injuries and leave out of the number of days worked in the same period, multiplied by 200,000.*

To aid comparison with other sources, this indicator has been calculated as a percentage of days worked. Based on this method of calculation, the absentee rate is 3.1 in 2019, 3.5 in 2018 and 3.1 in 2017.

***Occupational Diseases Rate.** The total number of cases of occupational disease divided by the number of hours worked during the year, multiplied by 200,000.*

** *Calculation of the lost day rate took into account days of absence due to injuries occurring and any cases of absence due to injuries occurring in previous year, accounting for days of absence on an accruals basis.*

*** *The causes of absence taken into account do not include maternity leave, marriage leave, study leave, trade union activities, other forms of paid leave and suspensions.*

**** *In 2019, as in previous years, there were no cases of occupational disease among Terna's employees. Terna's operations do not entail the types of work - as defined by law - associated with the potential occurrence of occupational diseases. Terna's occupational disease rate therefore remains at zero.*

As regards contractors' employees, one fatality was reported in 2018 and again one in 2019, with both taking place during the painting of support structures. The cause of death in both cases was "falling from height".

In addition to the information provided in the table, for the sake of completeness it should be noted that, in 2017, a contractor's employee was taken ill. The resulting fatality, even though occurring during working hours, was due to natural rather than occupational safety causes. Checks carried out also confirmed that the construction site was managed in full compliance with health and safety regulations. Contractors' health and safety protection measures are described on page 190.

OCCUPATIONAL INJURIES SUFFERED BY CONTRACTORS AND SUB-CONTRACTORS - GRI-ILO DEFINITIONS*

	2019	2018	2017
Occupational injuries suffered by contractors' employees	44	21	9
- of which serious	2	2	0
- of which fatal	1	1	0
Injury Rate	1.95	0.99	0.42

* *It should be noted that the increase in the number of injuries posted for contractors in 2019 must be seen in conjunction with the model used to monitor and ensure the efficiency of the contractual provision described on page 191. The number reported corresponds to injuries entailing at least one day's absence from work, divided by the number of hours worked during the year, multiplied by 200,000 (corresponding to 50 working weeks x 40 hours x 100 employees).*

*To aid comparison with other sources, this indicator has been calculated using a multiplication factor of 1,000,000 instead of 200,000 (thereby resulting in an injury rate 5 times the ILO injury rate). Based on this method of calculation, the injury rate is **9.7 in 2019, 4.9 in 2018 and 2.1 in 2017.***

In 2019 the Group began monitoring construction sites and injuries to people employed by contractors and subcontractors carrying out work for Group subsidiaries overseas. The same year reported 30 injuries, none of which were serious, and one fatality occurring whilst the individual was driving. The overall injury rate was 2,3, in line with 2018, when 45 injuries were reported, none of which were fatal or serious, resulting in an injury rate of 2.0.

"HEALTH AND SAFETY" TARGET

KPIS AND TARGETS IN THE STRATEGIC PLAN 2020-2024

KPI	2019		TARGET				
	TARGET	RESULT	2020	2021	2022	2023	2024
Safety indicator*	< 1	1.17	< 1	< 1	< 1	< 1	< 1

** The Safety Indicator is the ratio between the weighted injury rate (weighting: 30%) and lost day weight (weighting: 70%) for the target year and that for the previous three-year period.*

Safety, the environment and human rights at contractors' construction sites

The rise in the number of staff employed by contractors and subcontractors in 2019 is linked to the increase in the number of construction sites.

EU17 >

EMPLOYEES OF CONTRACTORS AND SUBCONTRACTORS*

	2019	2018	2017
Number of days worked	594,949	559,247	561,348
Full-time equivalents	2,704	2,542	2,552

* *The figures take into account the duration of contracts and the variable nature of the related workforce and pertain to the different types of contract awarded by Terna, ranging from major works to those for cutting back vegetation located under power lines. The number of working days and FTEs are estimated on the basis of average daily attendances at the largest sites and the value of the works contracted out at smaller sites. Further information about the types of contact used by contractors is not available.*

Given the substantial use of external labour at Terna's construction sites, works contracts are subject to stricter rules, not only in terms of qualification but also regarding management, with particular reference to occupational safety, the requirements of which are excluded from any lowest price concerns during the award process.

EU18 >

During the qualification process, Terna requires evidence of documented procedures to protect workers' health and safety. For companies from sectors deemed most significant from an environmental and safety point of view, an in-depth analysis of management practices is required.

Terna requires additional certification from qualified contractors, specifically regarding:

- their personnel's knowledge of Italian;
- adequate specific training for all construction site workers on the use of personal protective gear, on the risks set out in the Safety and Coordination Plan (PSC) and in the Operational Safety Plan (POS) and on the operating procedures and the environmental protection measures set forth in the specific operating procedure, "Management of environmental aspects during construction", appended to each individual contract;
- attendance at training courses for certain specific roles (e.g. workers involved in the assembly and maintenance of overhead power lines, workers cutting back vegetation, site managers, foremen and safety officers);
- appointment of a Prevention and Protection Service Manager (PPSM), a construction site safety representative, a crisis manager and a deputy and an appointed doctor;
- a requirement that the contracts entered into with contractors include the need to keep records of any injuries occurring during the year.

The actual implementation of training is verified via the "Qualified Company Personnel" online platform.

In order to minimise the risk of violations of human and labour rights to the detriment of contractors' employees, in addition to specific documentation on key contracts, Terna requires a copy of an insurance policy taken out to cover third-party liability, and damage to persons and property, including assets owned by the contractor, for the entire duration of the works and for an amount commensurate with the nature of the works. A copy of the contractor's records of social security and pension contribution payments is also required.

From 2019, all works and supply contracts involving work onsite contain a requirement to provide the information needed to, on the one hand, closely monitor and assess injuries to contractors' personnel and, on the other, acquire the data necessary to compute contractors' injury rates.

Terna has drawn up a preventative safety and environmental protection monitoring system for construction sites, broken down into two levels:

- First level: the contracting entity (primarily the Engineering and Asset Management department) is entrusted with monitoring, via checks, the work carried out by the Construction Safety Manager and the contractors (47 checks were carried out in 2019);
- Second level: Terna is responsible (Organization, Health, Safety & Environment department) for spot checks designed to monitor the entire management and control process at construction sites.

Regarding the environmental checks provided for in the second level, 22 construction sites were monitored in 2019 in connection with the following aspects:

- Site document management and record keeping;
- PPE, equipment and machinery;
- Waste management;
- Excavated soil and rocks;
- Site equipment storage management;
- Hazardous substances and accidental spills;
- Rainwater and supplies;
- Dust and sediment emissions;
- Noise;
- Site-specific characteristics and planning consent regulations.

None of the checks produced evidence of any critical issues.

Finally, together with leading Italian operators of networks and infrastructure, Terna participates in the "Inter-company Health, Safety and Environment Round Table", with the aim of sharing experiences and regulatory interpretations in order to achieve continuous improvements with regard to health, safety and environmental issues.

Moreover, it takes part in the "HSE Laboratory" project promoted by Sant'Anna School of Advanced Studies in Pisa, with the aim of defining good practices and efficient analytical tools to strengthen awareness of the importance of safety in the Company.

Diversity and equal opportunities

405-1 >

405-2 >

Terna uses staff selection, development and compensation systems that recognise and reward merit. All forms of discrimination, starting with the selection and recruitment process, are explicitly prohibited by the Group's Code of Ethics and Guidelines (e.g. its Human Rights Policy).

The vast majority of employees are men, due to a traditional shortage of female labour for the more technical and operational roles. Nonetheless, the presence of women is increasing, partly reflecting general labour market trends, which show that female participation is on the rise.

The percentage of women in the total workforce in Italy was 9.0% at the end of 2005 (the year in which Terna became an independent company). This figure has grown steadily since then, registering 13.9% at the end of 2019. In the same year, 21.1% of hires, not taking into account blue-collar workers, were women (26.6% in 2018).

The main indicators chosen by Terna to monitor the equal treatment of men and women show that the management and development systems adopted do not disadvantage women. In particular, it should be noted that, also in 2019, the proportion of women managers in relation to the total number of managers (19.8%) was once again higher than the proportion of women in relation to the total number of employees, without taking into account blue-collar workers (18.8%). Remuneration data also show moderate pay gaps for office staff and middle managers, with wider gaps for senior managers, although the number of people considered is smaller and the pay gaps are consequently more influenced by the nature of the related roles and the fact that there are few incoming and outgoing staff.

EQUAL OPPORTUNITIES FOR MEN AND WOMEN (PERCENTAGES)

	2019	2018	2017
*Pay gap between men and women**			
Senior managers	83.0	78.9	79.4
Middle managers	94.6	93.9	96.6
Office staff	99.4	97.7	97.3
*Remuneration gap between men and women***			
Senior managers	81.4	74.3	72.1
Middle managers	95.1	95.0	99.0
Office staff	96.4	93.6	94.0

* *The figure is based on the annual basic pay of women in the different categories as a percentage of the annual basic pay of men in the same categories. The figure has not been calculated for blue-collar workers as there are no women in this category.*

** *This figure is based on the total annual pay of women in the different categories as a percentage of the total annual pay of men in the same categories. In addition to basic pay, total pay also includes productivity bonuses, various forms of incentive and the value of benefits received during the year.*

202-2 >

Almost all employees are Italian citizens (only 31 employees have foreign citizenship).
At 31 December 2019, Terna employed 142 people from legally protected categories (140 in 2018 and 144 in 2017), in line with the regulations applicable to the Company. Additional indicators regarding equal opportunities are available (see the tables on page 275).

Terna's main contribution to the environment coincides with the progressive integration of renewable sources, accompanied by a commitment to minimising the visual impact on the landscape of its assets and to implementing voluntary programmes design to reduce our environmental footprint.

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8

Environment

In brief

Terna's main contribution to achievement of the climate change reduction targets is to carry out the investment provided for in the Development Plan, building a grid capable of enabling the energy transition towards a carbon-free system, based on renewable energy.

Terna's most significant impact on the environment coincides with the physical presence of power lines and electricity substations around the country: to minimise this, we adopt solutions such as the use of pylons with a reduced visual impact and, when possible, the use of underground sections of line or, the use of natural engineering. The most important contribution is the physical removal of power lines that are obsolete following rationalisation initiatives[94].

The activities involved in the construction, maintenance and removal of electricity infrastructure is linked to the production of waste, a high proportion of which is recovered [95].

In terms of greenhouse gas emissions, Terna has for many years focused on a number of voluntary programmes, primarily regarding the achievement of reductions in SF_6 leakage[96], making buildings energy efficient and saving energy at substations.

HIGHLIGHTS:

179 km of lines demolished	**94%** of waste recycled	an SF_6 leakage rate of **0.40%** regarding total equipment installed

[94] See the paragraph "Managing the environmental impacts of the electricity grid" on page 203.
[95] See the paragraph "Use of resources and waste management" on page 190.
[96] See the paragraph "Containment of emissions: SF_6 leakage" on page 214.

Terna and the environment

In terms of environmental impact, Terna's activities regard less the use of natural resources and the emission of pollutants, and rather more the physical presence of power lines and electricity substations and their interaction with the surrounding natural and manmade environment.

Occupancy of the land, visual impact on the landscape, electric and magnetic fields and the effect of power lines on biodiversity, especially birdlife, are aspects that relate to the implementation and physical presence of Terna's assets. Greenhouse gas emissions and hazardous waste are, however, relevant within the context of operations.

Terna has adopted an Environmental Policy that sets out its commitment to containing and reducing its environmental impact, in some cases going beyond legal requirements when this does not compromise the protection of other general interests provided for under the concession. This Policy is fully implemented through the Integrated Management System (see page 76) - which also covers efforts to reduce greenhouse gas emissions, the implementation of energy efficiency initiatives (see page 215) and the adoption of measures designed to protect birdlife (see page 208). Terna extends the issue of environmental protection to both its supply chain (see page 92) and local stakeholders directly affected by NTG development projects (see page 105). From an organisational standpoint, these matters are managed by several departments with responsibility for specific aspects.

With reference to the scope of environmental data, it should be noted that data relating to Tamini Trasformatori S.r.l. and Avvenia-The Energy Innovator S.r.l., subsidiaries of Terna Energy Solutions, in turn controlled by Terna, are not included in this section (see the Methodological Note for details on the scope of reporting).

Environmental indicators for the Tamini Group are shown in a specific Focus (see page 230). With regard to Avvenia, a company acquired in 2018, the initial assessment completed in 2019 did not unearth any significant environmental impacts, considering the type of activities carried out and the small number of staff involved.

Managing the environmental impacts of the electricity grid

The construction, maintenance and presence of electricity infrastructure have an impact on their surroundings. The responsible management of these impacts is illustrated below. Aspects relating to greenhouse gas emissions, connected with grid operation and electricity transmission, are dealt with in the section on “Atmospheric emissions and energy efficiency” on page 212.

413-2 >

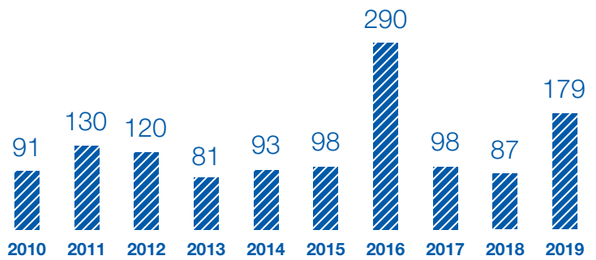
Integration of power lines in the environment

The transmission grid has effects on the environment, primarily in terms of the visual impact on the landscape produced by the physical presence of power lines and electricity substations.

The physical removal of existing lines is one of the most radical ways Terna reduces environmental impacts, also in terms of land use. Demolitions are a component of upgrade initiatives, often resulting from agreements signed with local authorities during the consultation phase prior to the construction of new infrastructure.

In 2019, 179 km of lines were demolished (target: 125 km), freeing up an area equal to 556 hectares. In the period 2010-2019, a total of 1,268 km of lines were demolished. The fact that the target was exceeded in 2019, due to accelerated implementation of the plans, is the reason why the target for 2020 is lower.

Demolition is defined as the physical removal of overhead lines and does not include declassified or upgraded lines.



1,268 km

LINES DEMOLISHED FROM 2010

The figure for 2016 is exceptional due to the demolition of over 200 km of obsolete power lines in Valtellina, which had been in preparation in previous years. After adjusting for this removal, demolitions amounted to approximately 80 km, in line with previous years (approximately 100 km/per year).

“TRANSMISSION IMPACTS” TARGET

KPIS AND TARGETS IN THE STRATEGIC PLAN 2020-2024*

KPI	2019 TARGET	2019 RESULT	TARGET 2020	2021	2022	2023	2024
VISUAL IMPACT							
Km of overhead lines demolished during the year	125	179	41	87	137	212	141
Km of new underground lines during the year	46	144	63	156	70	152	120

** With respect to that published in the 2018 Sustainability Report, the targets set for 2020-2023 have been revised in order to take new planning and the 2019 results into account.*

An approach based on environmental sustainability guides all of Terna’s activities, especially those regarding grid development. In terms of NTG development requirements, the interventions with the least environmental impact are rationalisation and reclassification.

Rationalisation

This comprises complex initiatives involving several components of the grid, replacing certain components with others of a superior type, thereby eliminating parts of the grid that are of little use following the installation of new infrastructure or adding new elements of the grid to avoid the upgrade of power lines that have reached saturation point.

Reclassification

This involves the conversion of existing power lines to a higher voltage through the installation of new conductors and pylons to replace existing ones, which may be larger in size and therefore take up more space. Unlike the construction of a new line, this type of intervention usually has the advantage of using existing infrastructure corridors, thus avoiding the occupation of new areas of land.

When grid development requirements entail the construction of new infrastructure, environmental sustainability considerations are taken into account in all phases of a project.

Planning and consultation

Terna's planning uses assessments based on digital thematic maps, mostly deriving from official sources (regional authorities, water concession authorities, monitoring agencies), which are organised in a large and constantly updated database. Since 2002, Terna has voluntarily brought forward dialogue with local stakeholders in order to identify shared solutions ahead of any consents process for new projects. Dialogue with local authorities, the Strategic Environmental Assessment (SEA) procedure in the Development Plan and public initiatives that address the members of local communities directly affected by the presence of new infrastructure all contribute to the design of initiatives to mitigate environmental impact (see page 201).

Design

Choosing the route is the most delicate phase of the design process, as it determines the environmental impact of the entire development project.

For this reason, notwithstanding the need to identify a route that makes it possible to operate and maintain the power line, Terna looks for design solutions that minimise land use, interference with areas of environmental, natural, landscape and archaeological value, as well as urbanised or built-up areas, and the related easements.

Terna's design process includes the study of construction plans aimed at using existing roads or tracks to minimise the opening up of new access routes, especially in wooded or protected areas, and the assessment of problems relating to vegetation management. This entails the adoption of methods and tools to minimise the impact on biodiversity, such as optimising the height of pylons and their location.

The drawing up of the Environmental Impact Study provides detailed information on the various components that help designers to turn the blueprint into an optimised project.

Great attention is paid to minimising the visual impact. If this cannot be mitigated by means of precise and appropriate choices of location and/or by taking advantage of morphological features, the following actions may be taken:

- **Choice of pylons with reduced visual impact**. In recent years, Terna has expanded the range of available pylons that may be used, with the introduction of new single-pole pylons with a low environmental impact (with an overall surface area of 10 square metres compared to 150 square metres for traditional pad/pyramid type pylons) and the design by internationally renowned architects of pylons that are more integrated into the landscape.
- **Use of underground cables**, which eliminates or reduces the typical visual impact of overhead lines, is perceived as negative especially in built-up areas. Underground cables, although appreciated and requested by local authorities, pose technical and financial problems. Underground lines can only be built for a limited number of consecutive kilometres, are less reliable than overhead power lines over time and require much longer repair times in the event of a malfunction. For this reason, they often do not guarantee adequate security for the electricity system and continuity of service. Underground cables also have a greater impact during the construction phase - for example, in terms of road works - and higher construction costs.

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Execution: site operations

Terna manages the impact of its construction sites on the environment via the operating manual, "The management of environmental aspects during infrastructure construction", in line with the Group's Environmental Policy and existing regulations.

This operating manual introduces the role of the environmental contact, a person tasked with monitoring the environment requirements contained in the EIA Decrees and in the opinions of authorities with responsibility for the environment as well as compliance with legal obligations, also with reference to contractors' activities. The environmental contact also monitors the indicators set out in ISO 14001 certification, relating to complaints/reports, environmental accidents, waste and the consumption of energy and natural resources.

Special attention is paid to the identification of areas and access roads of sites which, if compatible with technical and design requirements, are located in areas of reduced natural importance. Upon completion of the construction work, Terna restores the areas concerned to their natural state. < EU13

If these areas regard natural or semi-natural habitats, in addition to the normal restoration works, specific interventions are implemented. Based on natural engineering techniques, they involve the creation of habitats suitable for animal and/or plant species or communities, the replanting of live native plants, which do not require irrigation, special fertilisation or the use of materials (even if only inert) in order to recreate favourable living conditions for animal species (https://www.aipin.it/).

Terna's environmental policies, which are also applied at construction sites, have been drawn up in accordance with applicable environmental laws and the ISO 14001 Standard. These include such aspects as prevention of groundwater contamination and limitation of damage to vegetation, the management of accidents, the diminution of atmospheric and noise pollution, the use of vehicles and the proper management of waste and excavated earth (see page 203). Internal audit campaigns regarding construction sites make it possible to identify any deviations from the Company's environmental policies.

Mitigation and offsetting

In compliance with requirements received during the consents process, or voluntarily, Terna adopts mitigation measures to reduce the impact and improve the integration of electricity infrastructure within local areas.

Specifically, in its design process, the Company gives priority to line locations that take advantage of natural morphological features, creates camouflage systems for its electricity substations and makes use of natural engineering techniques for habitat reconstruction and the stabilisation of slopes and embankments.

With regard to the new overhead power lines, other mitigation procedures consist of camouflaging pylons with paint and the use of coloured insulators that enable the new lines to blend in better with the landscape.

Offsetting, which is usually of a technical and/or environmental nature, is specified by the authority issuing the consents. In the preparation of a project proposal - together with national, regional and local regulations - this constitutes a "binding standard" for the detailed design and execution of the project.

In most cases, offsetting accentuates or better defines the mitigations proposed in the environmental impact study or imposes new offsets on the advice of specialist bodies (government bodies, grantors of water concessions, park authorities, etc.). Offsets may take the form of compensation. If the competent authority does not consider a residual impact to be sufficiently mitigated, it takes into account another initiative located elsewhere capable of offering environmental compensation.

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Activities in 2019

During the year, a camouflaging project regarding the Scilla substation ("Sorgente-Rizziconi" line) was carried out, as was the restoration of vegetation following construction of the "Udine Ovest - Redipuglia" power line. Moreover, detailed designs for numerous substation camouflaging projects were completed for implementation in coming years.

Thanks to the field surveys completed by specialists, it was possible to apply and perfect the Incremental Ecological Indicator (IEI) developed in 2018. This tool is used to make a qualitative and quantitative assessment of the ecological status of new ecosystems resulting from initiatives such as vegetation restoration, camouflaging, offsets and so forth. This indicator will enable the ongoing monitoring of mitigations and offsets regarding vegetation, showing the various stages of progress and "health" (biodiversity).

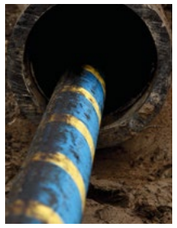
An Italic necropolis with funeral objects and 12 tombs was found in Abruzzo during work on installation of the 380kV "Villanova-Gissi" power line. Upon making the discovery, Terna began closely collaborating with the competent agencies in order to ensure recovery, restoration and enhancement of the artefacts, deemed to be of particular interest, so that they could be housed in a museum. Plans are underway for an exhibition to be held in collaboration with the authorities of the municipality where the acropolis was discovered.

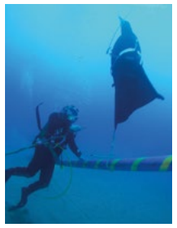
Terna prepares for adoption of the Envision Protocol for sustainable infrastructure

The **Envision Protocol** is a rating system created to certify the sustainability of infrastructure throughout its entire life cycle. It is based on a comprehensive framework comprising 64 sustainability and resilience criteria, called "credits", arranged into five categories: Quality of life, Leadership, Resource Allocation, Natural World, Climate and Resilience.

In 2019, a working group consisting of Terna personnel working in various companies and organisational units, was set up in order to pool a multitude of visions and experiences with regard to stakeholder engagement, sustainability, management systems and activities relating to the design, implementation and maintenance of projects. All workgroup members have received training on the Envision methodology and some have been qualified as Envision Sustainable Professionals (ENV SP).

In preparation for upcoming certification, the working group is putting together some guidelines for application of the Envision Protocol to power transmission infrastructure and identifying a pilot project for application of the Envision methodology.

Use of resources and waste management

Development and maintenance of the NTG requires a substantial amount of capital goods, such as power lines (pylons, conductors, insulators) transformer substations (transformers, circuit breakers, other equipment) and control systems.

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Notably, with regard to water consumption, environmental and materiality analyses indicate that the subject is not material. This is because water does not usually form part of the production cycle for electricity transmission and dispatching. This is except for a few items of equipment, mostly used in the installation phase, that in any event require overall consumption of a marginal volume of water compared with the volumes generally recorded in the electric utilities sector. Indeed, water is used for hygiene purposes, office cleaning and cooling systems and derives from connections to water systems for civil use (water withdrawn is shown in the Key Indicator Table on page 279).

Evolution of the electricity system and environmental impacts: water consumption

In recent years, Terna has introduced compensation systems (Synchronous Compensation Units or SCUs), as one way of responding to evolutions in the electricity system in terms of the integration of production plants fuelled by renewables and new connections to the DC grid. These plants play a key role in regulating voltage in the portion of the grid where they are installed.

Four synchronous compensators fitted with adiabatic cooling towers, thereby requiring the use of water, are currently in operation at Terna's substations. In order to ensure the correct use of water, Terna has installed intelligent systems that, by recording internal and external temperatures and the electrical readings from the SCUs, regulate the flow of water, thus minimising consumption.

Partly due to these interventions, the amount of water used to cool the synchronous compensators accounts for only 3% of Terna's total water consumption.

Moreover, for future installations, the choice of cooling system will be evaluated during the design stage, also taking into account the area's water stress level (especially in dry periods).

The production and direct management of waste primarily regards the maintenance of electricity infrastructure.




301-1>

Resources

Terna does not use raw materials, but does purchase finished products (electrical equipment, conductors, tools and other components). An estimate of the materials contained in the main products purchased is shown in the table below. Amounts have been estimated taking into account the average material content of the various products purchased in the years referred to. The methodology used to evaluate materials has been modified with respect to previous editions of the Sustainability Report, in order to take account of the outcomes and information acquired from LCA studies on power lines (see page 220). For this reason, the data for 2018 and 2017 differ from those previously published. The bulk of the materials used are steel (pylons), aluminium and copper (conducters and cables).

MAIN MATERIALS PROVIDED BY SUPPLIERS (TONNES)

	2019	2018	2017
Steel	12,694	11,483	7,074
Aluminium	12,590	8,667	4,216
Copper	5,349	4,355	1,885
Glass	3,393	4,189	1,466
Dielectric oil	1,535	1,405	1,329
of which vegetable oil	448	431	486
Porcelain	822	626	266
Polymers	402	577	234
SF_6	17	8	9

Specifically, amounts shown in the table reflect a levelling off in the purchasing of equipment used for electricity substations and some considerable changes in the main materials of line components (e.g. aluminium and steel).

Waste

< 306-2

At the end of their normal lifecycle, the materials used in electricity infrastructure are recovered for reuse in operations. Only a residual portion is sent to landfill and has an impact on the environment.

The percentage of waste recovered amounted to 94% in 2019 (86% in 2018 and 87% in 2017).

Whilst the effective, overall amount of waste produced reflects the timing of equipment replacements, effectual recovery depends on the materials contained in the waste: some of them are easy to separate out and thus reuse (for example, the iron parts of pylons). In other cases, it is either too costly or not possible to separate the various parts, above all when dealing with the most obsolete equipment.

For these reasons, annual changes in the amount of waste generated and the percentage of waste recycled should not be interpreted as indicating a trend.

WASTE BY TYPE* IN TONNES

	2019	2018	2017
Waste produced*	**5,912.8**	**6,774.2**	**4,801.5**
of which hazardous	3,285.8	3,484.2	2,250.6
of which non-hazardous	2,630.3	3,290.0	2,550.8
Waste sent for recovery	**5,558.1**	**5,799.1**	**4,188.1**
of which hazardous	3,181.7	2,936.1	1,832.1
of which non-hazardous**	2,376.3	2,863.1	2,356.0
Waste sent for disposal***	**220.3**	**1,050.3**	**315.6**
of which hazardous	48.9	555.8	171.4
of which non-hazardous	266.0	494.5	144.2

* *Only special waste produced during production processes is included, not waste produced by services (urban waste). Effluents and waste from septic tanks, produced by substations not connected to the sewer network, are not included; the quantity for effluents and waste from septic tanks was 578 tonnes in 2019, 388 tonnes in 2018 and 617 tonnes in 2017.*

** *This comprises uncontaminated metal waste deriving from the decommissioning of transformers, electrical equipment and machinery (e.g. generators), with an average recovery rate of 100%.*

*** *Waste sent for disposal may differ from the mere disparity between waste generated and recovered due to temporary waste storage.*

The main special hazardous waste generated by Terna's operating activities consists of:

Metal waste

This derives from the decommissioning of transformers, electrical equipment and machinery no longer in use and is contaminated by hazardous substances; they have an average recovery rate - after treatment by third parties - of over 95%.

Batteries (lead and nickel)

In the event of a blackout, batteries enable emergency generators to be switched on in order to keep the energy transformation and transportation service up and running during emergencies; they have a recovery rate of 100%.

Dielectric oils

These are used for insulating transformers replaced after periodic checks carried out for maintenance purposes. They constitute hazardous waste and have a recovery rate in the three-year period of around 100%.

306-3 >

The waste sent for disposal mainly consists of materials deriving from infrastructure maintenance and cleaning activities (sludge, oily emulsions and rags containing solvent oils) and insulating materials containing asbestos, for which no form of recovery is envisaged.

As in the previous two-year period, no significant spills of polluting liquids were reported in 2019.

"Terna Plastic Free" and "Terna Recycling" projects

Terna's attention to environmental sustainability in its operations also prompts the Company to promote awareness of environmental sustainability and the adoption of responsible behaviour on the part of its employees.

At the start of 2019, Terna launched two campaigns, **"Terna Plastic Free"** and **"Terna Recycling"**, at its headquarters in Rome in order to spread the culture of sustainability via active commitment in everyday work activities.

"Terna Plastic Free" is the initiative that is eliminating single-use plastic from offices. Specifically, Terna has eliminated the consumption of approximately 140,000 bottles of water and an equal number of plastic cups a year, equal to **4 tonnes of waste per year** and approximately 20,000 kg of CO_2 equivalents.

In the canteen, the snack bar and vending machines, plastic water bottles have been replaced by hot and cold, natural and mineral water dispensers. Disposable plastic cups have also been replaced by around 1,000 stainless steel thermal flasks, which have been distributed by the Company and even personalised for each employee.

"Terna Recycling", launched concomitantly with "Terna Plastic Free", aims to step up separate waste collection schemes for the solid urban waste produced by Terna's offices through the use of separate waste bins, located on all office floors, for plastic, glass, paper, organic and unsorted waste.

In 2019, both projects were extended to offices in Milan Pero, Rome Marcigliana, Parma and Camin (PD). The aim is to rollout the projects at all Terna's main offices, with an impact once fully up and running equal to 139 tonnes of CO_2 equivalents avoided and a 26 tonnes reduction in plastic waste per year.

Monitoring and supervision of electromagnetic fields

Protection of the population from exposure to electromagnetic fields is precisely defined by law (the Cabinet Office Decree of 8 July 2003). This legislation provides for:

- **exposure limits**: In the event of exposure to electric and magnetic fields generated by power lines at a frequency of 50 Hz, the limit is 100 microteslas for magnetic induction and 5kV/m for the electric field, considered as effective values;
- **safety thresholds**: As a precautionary measure to protect against long-term effects, which may be linked to exposure to magnetic fields generated at the network frequency (50 Hz), in children's play areas, residential areas, schools and places where people spend not less than four hours a day, a threshold of 10 microteslas has been set for magnetic induction, based on the average of measurements taken over 24 hours under normal operating conditions;
- **quality targets**: In the design of new power lines at the above-mentioned sensitive locations and in the design of new settlements and new areas close to lines and electricity installations already present in the vicinity, in order to gradually minimise exposure to electrical and magnetic fields generated by power lines operating at a frequency of 50 Hz, a quality target of 3 microteslas has been set for magnetic induction, based on the average of measurements taken over 24 hours under normal operating conditions.

The values of the three parameters, especially the threshold value (10 microteslas), and the quality target (3 microteslas), show that Italian legislation has adopted the prudential approach described in art. 15 of the Rio Principles. These parameters are among the strictest at European level. Terna's compliance with the law in its activities implicitly shows that it has adopted the same principle.
Terna carries out inspections on its own lines to ensure compliance with the limits laid down by the regulations in force and seeks innovative technological solutions in order to mitigate the impact of magnetic fields. If any complaints or requests are received from competent administrative bodies and authorities, the Company provides the necessary data to access the actual exposure to electric and magnetic fields generated by its infrastructure.
Finally, with a view to providing accurate, easily understandable information on the subject, Terna has prepared an in-depth study on electromagnetic fields (EMF), which may be found in the "Sustainability" section of the Company's website www.terna.it.

Reports and complaints regarding environmental concerns

In line with the ISO 14001 Environmental Management System, Terna monitors and classifies complaints received regarding significant environmental matters.

Any written communication from stakeholders reporting that an activity carried out by Terna causes or has caused damage may be submitted to one of the Group's offices or organisational units, where it will be filed and handled by the competent operating unit.

Complaints received are classified in terms of environmental aspects as defined by environmental analysis: waste, noise, biodiversity, landscape, electrical and magnetic fields, lighting, the management of vegetation and others.

As in the past three years, 2019 also reported a reduction in complaints: most regarded power lines and refer to the need to cut back vegetation along power line corridors, the noise emitted by the lines when in operation and requests to measure electromagnetic fields.

Terna replies as soon as possible, and, in any event, within 30 days from receipt of the request or within 60 days if the scope and complexity of a request are such that it cannot be handled within the first 30 days.

In this case, Terna promptly notifies the person making the request of the extension and explains why it is necessary. Details of the concerns reported and dealt with over the last three years are published on page 265.

Electricity power lines, biodiversity and birdlife

The impact of Terna's grid on biodiversity may take different forms.

During the grid construction phase, the impact on biodiversity is linked to construction site activities (e.g. the opening up of access routes to build pylons, soil excavation and the removal of residual materials) and is temporary and reversible.

EU13 >

During the operational phase, the potential impacts of existing lines on biodiversity are twofold. On the one hand, the route of the line may be a factor in increasing biodiversity and protecting certain species as pylons, with their bases, make it impossible for land to be used for intensive agriculture and constitute "islands" where biodiversity can flourish. On the other hand, the presence of lines has potentially negative effects on biodiversity, in particular on birds, due to the risk of collision, and in protected areas or areas of natural interest.

The main tool for identifying critical line sections is a fully comprehensive land use database, containing data provided by regional authorities and ministries. This GIS (Geographic Information System) enables integrated analysis of all the layers of information on the various types of land use and protections (local, natural, cultural, landscape, etc.). Using this tool, Terna has compiled an inventory of the lines that may interfere with protected or highly biodiverse areas, as shown in the table below.

304-1 >

POWER LINES IN PROTECTED AREAS*

	UNIT	2019	2018**	2017
Lines impacting on protected areas	km	6,746	6,730	6,024
Lines with an impact as a percentage of total lines operated by Terna	%	10.5	10.4	10.0

* *To calculate the percentage of lines impacting on protected areas, the Company has used "ATLARETE" data, which may differ from data in the table showing indicators of the number of lines.*

** *Data for 2018 have been revised so as to be in line with the calculations made for 2019. Thus, the data for both years take account not only of the km of overhead power lines with an impact but also of the underground and underwater cables having an impact.*

From 2019, the indicator of lines impacting on protected areas has been modified in order to take account not only of overhead power lines having an impact but also of cables (underground and submarine). For the sake of completeness, it should be noted that out of the 888 substations managed by the Terna Group, only 35 are located in protected areas.

On this basis, potential threats from the risk of collision for bird species included in the IUCN Red List have been assessed.

The presence of power lines may have negative effects on birdlife. While the risk of electrocution regards LV and MV lines and therefore does not concern Terna's infrastructure, HV lines are associated with the risk of collision.

In order to minimise this risk, special devices called "deterrents" have been installed along sections of line with frequent bird traffic, which, with their visual impact and the noise they generate when blown by the wind, make the power lines easier to see for birds in flight.

BIRD DETERRENTS ON THE NTG

	UNIT	2019	2018	2017
Lines involved	no.	72	70	66
Total deterrents installed	no.	15,552	15,503	14,728

Over the years, Terna has promoted research and scientific studies to further investigate this issue and identify increasingly effective solutions. The first Italian study devoted to collisions, based on the results of an agreement between Terna and LIPU (the Italian League for the Protection of Birds), highlights a low risk of collision (see, for example, the 2010 Sustainability Report, page 116 "Terna-LIPU agreement: a study of the interaction between birdlife and the National Transmission Grid").

In order to support scientific research and the re-naturalisation of local areas, in collaboration with environmental associations, Terna carries out targeted projects. Over recent years, Terna has implemented the following projects.

Collision risk prevention tools

In 2018, Terna conducted a market survey - using the CESI research centre - on the availability of different types of deterrents, including a scientific study on their effectiveness. In 2019, the deterrents deemed suitable for installation on our electricity assets will be purchased and field-tested.

Radar monitoring of the passage of migratory birds along the "Sorgente-Rizziconi" power line (the last year) was completed, as was an assessment of the effectiveness of deterrents. Terna published the results of the monitoring on its website: www.terna.it.

Trials of AVIMON, the device that records bird strikes against ground wires on power lines, were completed on the "Villanova-Gissi" power line after a period of six months without registering any collisions. The experiment carried out on the section of the "Redipuglia-Planais" power line crossing the Isonzo river was completed as planned. A waveform analysis showed that it was the cause of only one collision, attributing the others to weather conditions. Nonetheless, onsite monitoring via ground observation did not report discoveries of any bird carcasses.

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304-4 >

Identification and monitoring of bird species on the IUCN Red List

Terna has carried out a study aimed at identifying the protected species included in the IUCN Red List that are potentially impacted by its infrastructure.
The IUCN Red List is the largest existing international database on the conservation status of thousands of plant and animal species, which are catalogued according to their risk of extinction. In its analysis, Terna specifically considered the presence of bird species on the IUCN Red List and at Natura 2000[97] sites, namely in protected areas with a high level of biodiversity (approximately 3,000 SPAs and SCIs).

The study selected the Natura 2000 areas affected by Terna power lines, then verified which protected species - among those included on the Red List and classified as Vulnerable, Endangered, Critically Endangered and Regionally Extinct - had chosen them as their habitat[98]. These species are conservation priorities as without specific measures to neutralise the threats they face, and in some cases to increase their populations, their extinction is a real prospect. The analysis showed that Terna's electricity infrastructure could interfere with the habitats of eight species. After checking scientific publications and via targeted consultations, no specific critical issues emerged regarding bird species except for a potential risk of collision for the corncrake (*Crex crex*), a species present in the Alpine area between Friuli-Venezia Giulia and Lombardy. A specific study on the ecology of the species is in progress with a view to mitigating this risk.

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[97] Natura 2000 is the main instrument of the European Union's biodiversity conservation policy. This ecological network which covers the entire territory of the European Union, was set up under the Habitats Directive (Council Directive 92/43/EEC) to ensure the long-term maintenance of natural habitats and of endangered or rare species of flora and fauna at EU level. The Natura 2000 network consists of Sites of Community Importance (SCIs), identified by Member States in accordance with the Habitats Directive, which are subsequently designated as Special Areas of Conservation (SACs), and also includes Special Protection Areas (SPAs) established under Directive 2009/147/EC "Birds" regarding the conservation of wild birds.

[98] There are 11 risk categories, ranging from Extinct (EX), applied to species for which there is a definite certainty that the last individual has died, to the Least Concern (LC) category, used for species that are not at risk of extinction in the short or medium term. The Extinct and Least Concern categories include categories under threat, which identify species at increasing risk of extinction in the short or medium term: Vulnerable (VU), Endangered (EN), Critically Endangered (CE) and Regionally Extinct (RE).

Alternative uses for electricity power lines

Terna, in partnership with environmental associations, has for some years been working on projects that aim to develop alternative uses for power lines. The most important, carried out in collaboration with the ornithological association, *Ornis italica*, is the **Nests among the pylons** project. This involves the installation of nest boxes, followed by annual surveys of the species that occupy the nests and the results of the breeding season. The project regards many species, including: the kestrel, peregrine falcon, scops owl, cuckoo, common roller, bat and stork. Launched in 2015, the GIS census (location via geographical coordinates) of the nests installed has registered a total of 384 nests.

GEOREFERENCED NESTS AT 31 DECEMBER 2019

LOCATION	NESTS		SPECIES CONCERNED*
	NUMBER OF NESTS	OF WHICH IN PROTECTED AREAS	
Abruzzo	30	0	Kestrel
Calabria	30	23	Kestrel
Campania	1	0	
Emilia-Romagna	95	31	Kestrel; scops owl, cuckoo common roller
Lazio	47	14	Kestrel, scops owl, common roller
Lombardy	15	0	
Piedmont	54	25	Common roller
Puglia	72	0	
Sicily	30	10	
Trentino-Alto Adige	8	0	
Veneto	1	1	
Overall total	**384**	**104**	

** The relevant species are identified by the type of nest box installed and by subsequent monitoring. However, the possibility that nests may be used by another unrecorded species cannot be excluded.*

As part of the contract regarding new nest box installations, in addition to the supply of boxes, Terna has also contracted out monitoring of occupation of the new boxes.

This activity is completed with the **Birdcam project**, involving the installation of cameras trained upon the artificial nests: the idea is to monitor the birds' reproductive period (online at www.birdcam.it and on Terna's website).

Atmospheric emissions and energy efficiency

At international level, convergence on the action to be taken to combat climate change was best reflected in the agreement signed at the United Nations Climate Conference (COP21) in Paris in December 2015. SDG 13 (Climate action) was also included in the UN's 17 sustainable development goals in the same year.

The guidelines in Terna's Strategic Plan are consistent with these positions and with the objective of facilitating transition to the production of energy from renewable sources and, more generally, the decarbonisation of production processes.

Climate change entails both risks and opportunities for Terna's business (see page 64) in terms of Regulated and Non-regulated Activities. In particular, with regard to the former, investment in grid development meets the need to facilitate the energy transition by strengthening transmission capacity and interconnections with other countries, while research and innovation are aimed at identifying smart and sustainable solutions to be offered to the customers of the Non-regulated Activities.

Terna has also carried out a number of trials focusing on battery storage, which could specifically encourage the use of renewable energy sources and, at the same time, solve problems with control of the grid deriving from sudden reductions in renewable electricity production.

With regard to the reduction of CO_2 emissions into the atmosphere by the electricity system as a whole, Terna's main contribution is to carry out the investment provided for in the NTG Development Plan (see page 143). In this section, the focus is on emissions relating to Terna's operating activities.

Direct and indirect CO_2 emissions

305-1 > 305-2 >

Direct greenhouse gas emissions (Greenhouse Gas Protocol, Scope 1) connected with Terna's activities derive mainly from SF_6 gas leaks (88% of total direct emissions in 2019), which are up from the previous year and due both to an increase in assets managed and to some faults reported at plants, for which extraordinary maintenance work has been planned. The remaining direct and indirect emissions (Scope 2) are due to energy consumption, especially electricity. There was a slight increase (2%) in indirect emissions, reflecting the rise in electricity consumption (see the specific section on page 215). It should be borne in mind that, for technical reasons, Terna's energy consumption is not attributable to a supply contract. This makes it impossible to reduce indirect emissions by selecting supplies from renewable sources and accounts for the need to use an average conversion factor for Italian electricity production.

TOTAL DIRECT AND INDIRECT GREENHOUSE GAS EMISSIONS - TONNES OF CO_2 EQUIVALENT*

	2019	2018	2017
Direct emissions			
Leakages of SF_6	60,162.2	54,846.1	67,371.4
Leakages of refrigerant gases (R407C, R410A)**	178.2	427.9	489.4
Petrol for motor vehicles	61.6	36.8	39.9
Diesel for motor vehicles	6,767.0	6,295.0	6,269.0
Jet fuel for helicopters	502.4	605.6	582.2
Natural gas for heating	305.5	316.0	419.9
Fuel oil for heating and generators	427.5	471.8	621.3
Total direct emissions	**68,404.4**	**62,999.2**	**75,792.9**
Indirect emissions			
Electricity* **	**65,246.9**	**64,050.5**	**72,489.3**

* *The conversion of direct energy consumption and leakages of SF_6 (sulphur hexafluoride) and refrigerant gases into equivalent CO_2 emissions has been carried out using the parameters indicated in the IPCC Fifth Assessment Report (AR5) and the Greenhouse Gas Protocol (GHG) Initiative.*

** *The significant reduction in leakages of refrigerant gases (R407C and R410A) mainly derives from the use of new gases having a lower environmental impact in machines and equipment, for which the correct monitoring method is currently being drawn up.*

*** *The conversion of indirect electricity consumption is carried out taking into account the share of total Italian electricity production represented by thermoelectric production in 2019. Allocation for the purposes of the production mix was based on the December 2019 issue of the "Monthly Report on the Electricity System" available on the website at www.terna.it.*

The increase in total direct and indirect CO_2 emissions, mainly linked to the rise in SF_6 leakages, is reflected in the slight upswing in the figure for carbon intensity, i.e. the ratio between direct and indirect emissions and revenue, within the context of a gradual downward trend.

CARBON INTENSITY - TONNES OF CO_2 EQUIVALENT/ REVENUE (€M)

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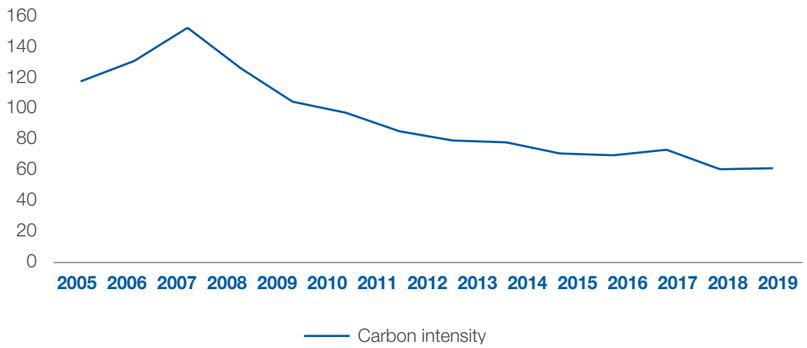
	2019	2018	2017
Total emissions (direct and indirect)	133,651.3	127,049.7	148,282.2
Ratio of total emissions to revenue	58.2	57.8	68.6

An alternative measure of carbon intensity is the ratio of direct emissions and value added, which for Terna, in 2019, amounts to 45.4 tonnes of CO_2 per million euros. This measure is comparable with the national figure: in 2017, it was 53.5 for Terna, whilst the Italian average was 178.3 tonnes of CO_2 per million euros (source: ISTAT, SDGs Report 2019).

CARBON INTENSITY CALCULATED ON REVENUES



Terna focuses its attention on a number of voluntary action programmes aimed at reducing its main sources of greenhouse gas emissions, which primarily regard curbing the SF_6 leakage rate, the energy efficiency of buildings and energy saving at electricity substations.

305-1 >

305-5 >

Containment of direct emissions: SF_6 leakage

SF_6 (sulphur hexafluoride) gas is used as insulation in certain electrical equipment (circuit breakers, current transformers and armoured equipment). Part of the gas in the equipment leaks into the atmosphere due to defective seals, when faults occur, and also sometimes during the re-pressurising process. SF_6 has a very powerful greenhouse effect, which is 23,500 times greater than CO_2: leakage into the atmosphere of 1 kg of SF_6 is equivalent to 23.5 tonnes of CO_2.

The amount of SF_6 present in the Group's infrastructure has risen steadily. This trend, which is common to many transmission grid operators, is linked to the better insulating performance of this gas and the smaller footprint of substations built with equipment containing SF_6 in comparison with more traditional solutions.

During the period from 2012 to 2017, the related target for the in which the SF_6 leakage rate was 0.60%, down 0.10% compared with the average for previous years.

In the light of the actual performance recorded until 2017, in the early months of 2018, the target was reformulated as follows: 0.47 for 2018 and 2019; 0.45 in subsequent years.

"TRANSMISSIONS IMPACTS" TARGET

KPIS AND TARGETS IN THE STRATEGIC PLAN 2020-2024

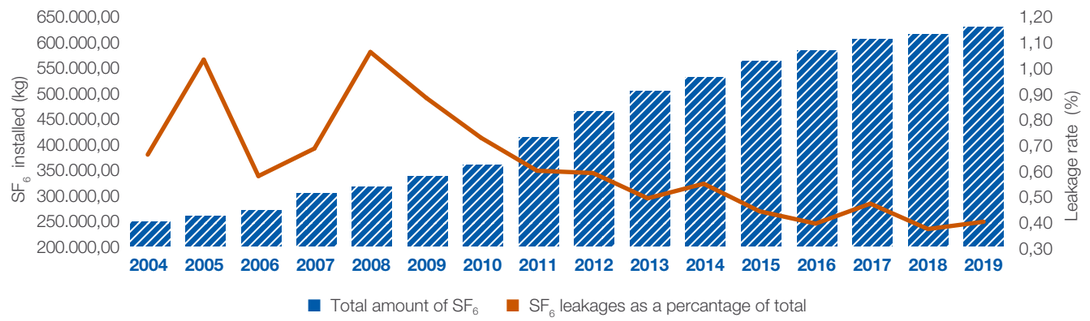
KPI			TARGET				
	2019		2020	2021	2022	2023	2024
	TARGET	RESULT					
SF_6 leakage rate* (%)	0.47	0.40	0.45	0.45	0.45	0.45	0.45

** Baseline: average for the five-year period 2013-2017 (0.47%).*

The target values should be qualified, bearing in mind the already substantial decrease recorded in the previous five-year period, and the higher average leakage rates of other leading European TSOs (0.7% in 2017).

In the following three-year period 2020-2022 the target will be even more challenging (0.45%), thanks to the expected effect of the additional containment measures implemented in the first two years.

SF_6 LEAKAGE



In 2019, the leakage rate regarding total equipment installed and cylinders was 0.40%, one of the all-time lows, even if up slightly from 2018. Routine and extraordinary maintenance activities have already been planned to resolve the most significant faults arising in 2019.

Consumption and cuts in emissions: energy efficiency

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The transmission of electricity only requires direct energy consumption for certain support activities, including:

- fuel for the Company's operational vehicles, cars and helicopters used for line inspections, fault repair and other line and substation maintenance activities (see "Asset management" on page 152);
- fuel oil for emergency generators that only come into operation in the event of a power failure. It is estimated that, nationwide, generators were used for a total of 4,107 hours (consumption equal to 0.5 GJ per hour);
- fuel oil and natural gas for office heating.

Indirect energy consumption coincides with the electricity used to run substations and operating equipment (86% of the total in 2019) and for office and laboratory use. The figure relating to office consumption is 97,278 GJ (down from 111,113 GJ in 2018) which, compared to the total number of Terna employees (less blue-collar workers), corresponds to per capita consumption of 34.0 GJ. This last figure is the latest in a constant downward trend (39.7 GJ in 2018 and 47,8 GJ in 2017), bearing out the effectiveness of the energy efficiency measures in offices and buildings described on page 218.

DIRECT AND INDIRECT ENERGY CONSUMPTION BY PRIMARY SOURCE (GIGAJOULE)*

	2019	2018	2017
Direct consumption in GJ			
Petrol for motor vehicles**	889.2	531.8	576.8
Diesel for motor vehicles**	91,433.4	85,056.6	84,704.5
Jet fuel for helicopters	7,027.2	8,470.0	8,193.5
Natural gas for heating	5,448.6	5,636.3	7,489.9
Fuel oil for generators and heating	5,776.5	6,375.2	8,394.2
Total direct consumption	**110,574.9**	**106,069.8**	**109,358.8**
Indirect consumption in GJ			
Electricity to power substations and offices***	697,600.2	684,672.4	703,737.8

* *Direct consumption data in tonnes and thousands of m^3 are shown in detail in the "Key indicator tables". To convert the volumes of primary resources into gigajoules, the parameters set out in the Global Reporting Initiative (GRI) protocols were used.*

** *Only the consumption of operating vehicles is taken into account and not the cars used by managers.*

*** *Allocation for the purposes of the production mix was based on the December 2019 issue of the "Monthly Report on the Electricity System" available on the website at www.terna.it.*

Compared with 2018, the overall trend in direct and indirect consumptions was up by 2%, reflecting, on the one hand, increases in electricity consumption to power both substations and asset monitoring equipment. Both increases are also linked to the scope of data recording, which expanded due to the addition of former RFI substations during the year (up by 67, see page 28) and, especially, to fuel consumption and stepped up monitoring with respect to 2018 (+34% monitoring of substations, + 37% monitoring of the cutting back of vegetation and + 8% inspections of underground cable routes). On the other hand, there was a reduction in other types of consumption, especially those linked to heating and the use of electricity in offices and sites. The improvements are primarily due to the effects of restructuring and the use of more efficient heating systems (see page 218).

Energy Management System

In line with its energy efficiency objectives, the Group has been certified in accordance with the UNI CEI EN ISO 50001:2011 standard since 2015.

After the installation of sensors to measure energy consumption in real time at 80% of Terna's main sites, the subsequent analysis using time bands unearthed numerous peculiarities regarding electricity use and enabled the definition of long-term improvement initiatives for all of the sites monitored (2017).

In 2018, a pilot project regarding the online monitoring of the electricity consumed by transformer stations was launched and, in 2019, this project was extended nationwide via a representative sample of 23 substations, broken down by type of activity. More than 20 meters are being installed in each station to accurately monitor the electricity used and, after monitoring, energy audits will be carried out to define improvement targets.

In compliance with Legislative Decree 102/2014 and in agreement with ENEA, a cluster of 14 substations and 5 sites of relevance to the Company were selected for the energy audit, the outcomes of which are available on the ENEA portal.

Collection and assessment of the data monitored online as well as energy audits for other Terna sites are planned also for 2020. The distinctive feature of the latter regards the fact that, over time, the Group has decided to continue carrying out energy audits internally, thereby improving staff's know-how and taking advantage of colleagues' longstanding experience in the area of electricity substations. Moreover, the Company plans to install sensors to measure energy consumption in office buildings so as to define possible ways to reduce consumption. As concerns substations, a target to reduce power consumption for auxiliary services is currently being defined for implementation following replacement of the autotransformers.

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Energy efficiency in substations and offices

At Terna, the development of energy efficiency programmes relating to the use of electricity in substations and offices is experimental, as the Company's electricity consumption falls within the category of "own transmission uses" which, according to the industry's regulator, are not to be included in operating costs.

In offices, the main sources of energy consumption relate to lighting, the data centre, air-conditioning and heating. Notably, a number of Terna's offices have either been refurbished or are newly built under a long-term programme, which aims to upgrade the energy efficiency class of buildings owned by the Group, thereby combining civil engineering works with improved energy performance.

Below is a description of initiatives launched in recent years to reduce energy consumption, of which the benefits are measurable:

- **Summary of previous years' initiatives**

  At 31 December 2019, the energy efficiency initiatives launched in 2014 had led to an overall reduction of around 706 tonnes of CO_2 (equal to 262 tonnes of CO_2 in 2019 alone).

- **Improving the efficiency of air conditioning systems**

  In January 2020, a geothermal heating system that uses flowing water began operating at the 380kV substation in Martignone (BO). The system, developed in collaboration with our technology partner, Ateneo from Bologna, will lead to a reduction of approximately 28 tonnes in annual CO_2 emissions.

- **Improving the efficiency of lighting systems**

  In 2019, the lighting system at the Company's office in Rome in Via Galbani was replaced with an LED lighting system: Terna expects to see a reduction of 37,519.36 kWh/annually, the equivalent of 153.33 tonnes of CO_2 a year.

- **Self-production of electricity from renewable sources**

  A plant for self-producing electricity has been in operation in Morigallo (GE) for the offices of the Infrastructure Unit in Genoa since January 2019, resulting in a reduction of around 25 tonnes of CO_2 via the production of 70,000 kWh of electricity.
  In 2018, the plant for self-producing electricity from renewables for the Turin Botticelli office (guard house) entered service, resulting in a reduction of approximately 2 tonnes of CO_2 via the production of 5,420 KWh of electricity.
  A self-production plant has been operating at the Camin (PD) Infrastructure Unit since 2017, resulting in an estimated savings of around 6 tonnes of CO_2 in 2019.

Vehicle fleet

The Company's operational vehicles are used nationwide to carry out power line inspections and, in general, to visit infrastructure and construction sites.

Terna's vehicle fleet consists of four helicopters, purchased in 2015, used to carry out scheduled and random inspections of power lines, and a fleet of cars that is frequently renewed, of which over 87% are equipped with Euro 6 and Euro 5 engines (for further information on vehicles and the related impact of the fleet, see the relevant table in the "Key indicator tables" on page 278).

Other indirect CO_2 emissions

< 305-3

In addition to emissions relating to electricity consumption, Terna's most significant indirect emissions are connected to grid losses. The indicators relating to emissions produced as a result of air travel by staff are shown on page 278.

Grid losses

< EU12

Grid losses are defined as the difference between energy injected by producers (including imported energy) and final consumption; the relevant losses for Terna are those associated with the transmission grid. The figures shown in the following table are based on direct measurement of the energy injected and withdrawn from the transmission system. In 2017, Terna became responsible for the direct measurement, whereas in previous years the Company had been responsible only for the measurement of energy injected into the NTG and not for the energy withdrawn, for which the distribution companies were responsible. The margin of uncertainty regarding the accuracy of the readings made tended to decrease over the years, as a result of cross-checks and the gradual elimination of discrepancies with distributors' data.

In order to reduce the risk of interpreting the effect of measurement errors and the related corrections as actual trends, it was decided to use the arithmetic moving average of losses with a three-year window as annual data (three-year period 2015-2017 for 2017, 2016-2018 for 2018). In order to maintain the consistency of the published data, the three-year moving average was also published for 2019.

GRID LOSSES

	2019		2018		2017	
	% Compared with energy demand	GWh	% compared with energy demand	GWh	% compared with energy demand	GWh
VHV and HV grid	1.4	4,555	1.4	4,613	1.4	4,583

Grid losses are a physical effect of the electricity lost as it passes through conductors and during transformation. Losses are influenced by the level of voltage, the volume of electricity transported, the materials used and the distance between the points at which the energy is produced and consumed. Terna can only determine the extent of the losses, which are not completely under its control.

Grid development activities, given the same structure of production, would lead to greater efficiency and thus a reduction in losses. However, the actual impact of development initiatives on losses is unpredictable and not under the control of the transmission operator, as it depends on concomitant changes in production capacity and electricity supply and demand at local level.

Dispatching operations, needed to guarantee a constant balance between injections and withdrawals and to prevent the occurrence of grid security problems and disruptions, are carried out in accordance with regulatory criteria within the production set-up created by the energy market. They cannot be influenced by Terna with the aim of minimising losses.

CO_2 emissions associated with grid losses amounted to 1,533,654 tonnes in 2019 (1,553,716 tonnes in 2018 and 1,699,607 in 2017). The trend differs from the one regarding losses measured in GWh due to changes in the conversion factor used to convert energy into CO_2 equivalent emissions, which in turn is affected by changes in the production mix among Italian power generators.

LCA studies on power lines

One of Terna's environmental objectives is to draft an initial assessment of the Group's overall carbon footprint. For this reason, Terna is conducting various Life Cycle Assessment (LCA) studies on components of the grid, with methodological support from Bocconi University. The assessments are carried out in accordance with UNI EN ISO 14040:2006 and UNI EN ISO 14044:2006 standards and in application of the Circular Footprint developed by the European Commission within the framework of the Product Environmental Footprint. In 2019, an initial assessment was made considering a 150kV single triad overhead power line. The LCA studies measure impacts based on different categories. The calculation method developed by the European Commission's Joint Research Centre is used to assess the relative importance of the impacts. This method enables identification of both the most important categories of impact and the most significant phases in the life cycle. It is based on materiality assessments evaluating the relative impact of the various categories as determined by experts in the sector. The analysis has revealed that:

- the most significant impact category is "Climate change", linked primarily to the presence of grid losses. The main cause of this impact relates to the production of electricity from fossil sources. The solution entails decarbonisation of the energy mix (see the paragraph on the effects of Terna's Development Plan);
- in moving towards decarbonisation, the "Climate change" category loses relative significance, whilst the category "Mineral, fossil & renewable resource depletion" gains in importance, refecting the production of materials used in conductors and pylons.

A possible reduction in these impacts involves considering changes on the supply chain side.

Environmental costs

Terna's commitment to the environment is reflected in the costs incurred for environmental reasons, in terms of both capital expenditure and operating costs. Separate representation of environmental costs is based on the definitions set out below, through aggregating information derived from the Company's general and management accounting. These definitions and the methodology described below are taken from the Terna Group's operating guidelines.

Accounting methodology

The identification of environmental costs is based primarily on available definitions, primarily those of ISTAT (Italy's Office for National Statistics), Eurostat and GRI, as well as the European Commission Recommendation on the recognition, measurement and disclosure of environmental data in annual accounts and annual reports (Recommendation 2001/453/EC). According to this Recommendation, the term "environmental expenditure" includes the cost of initiatives undertaken by a company, directly or via third parties, in order to prevent, reduce or repair damage to the environment caused by its operating activities.

Secondly, the relevant definitions have been cross-referenced with the environmental aspects assessed as being significant (e.g. substation noise, electromagnetic fields, etc.) within the Company's ISO 14001 certified Environmental Management System, in order to identify Terna's environmentally relevant operating and capital expenditure activities within the main business processes.

Many of Terna's activities described in this Report entail environmental expenditure. However, certain limitations have been introduced in determining the scope of reporting:

- the exclusion of integrated costs, namely those related to activities that have no exclusively environmental purpose (e.g. the use of pylons with innovative characteristics, also in terms of how well they blend into their surroundings) due to the subjective nature of accounting for environmental components only;
- the exclusion of additional costs linked to the consideration of environmental constraints and demands when planning and designing new lines (re-routings and sections of cable laid underground).

Additional conditions were also imposed if costs were significant, consistent with annual accounting requirements (a clear distinction between operating costs and capital expenditure) and directly measurable on the basis of the Company's existing accounting system.

The latter condition meets the need to minimise the use of estimates based on non-accounting procedures.

Capital expenditure and operating costs

The table below provides the best possible view of Terna's capital expenditure and operating costs in relation to the environment.

It should be noted that these costs exclude expenses relating to internal resources, and only take into account the cost of external supplies. An exception is the item "Environmental activities - Existing plant", which does include the cost of internal personnel.

Based on the methodology adopted and the footnotes to the table, it should be noted that the environmental costs shown represent a subset of the total environmental costs actually incurred, as defined above.

ENVIRONMENTAL COSTS - CAPITAL EXPENDURE AND OPERATING COSTS (€M)

	2019	2018	2017
Capital expenditure			
Environmental offsets [1]	8.7	7.1	7.9
Environmental impact studies [2]	3.8	3.5	4.2
Environmental activities - new plant [3]	5.5	3.9	4.8
Environmental activities - existing plant [4]	3.4	2.9	3.6
Demolitions [5]	1.7	2.2	0.8
Total capital expenditure	**23.1**	**19.6**	**21.2**
Costs			
Cost of environmental activities [6]	24.2	23.8	24.1
Total operating costs	**24.2**	**23.8**	**24.1**

[1] ***Environmental offsets**: these are amounts allocated to offset the works provided for in the Grid Development Plan, as identified by specific agreements signed with local authorities.*

[2] ***Environmental impact studies**: these relate to plants provided for in the Grid Development Plan that are under construction or awaiting the necessary consents from the competent authorities.*

[3] ***Environmental activities - new plant**: The amount shown is an estimated figure. Based on an analysis of certain large investment projects, it has been found that at least 1% of total project costs correspond to environmental items, usually deriving from regulatory requirements (for example, tree screens, noise barriers, the installation of bird deterrents, environmental monitoring, the testing of excavated soil and rocks). Therefore, a value of 1% of the capital expenditure cost for projects with similar characteristics has been taken into account.*

[4] ***Environmental activities - existing plant**: These are the costs of upgrading plants to comply with new legal requirements and regulations in the environmental field (e.g. noise and visual and landscape aspects).*

[5] ***Demolitions**: This is the cost of the final decommissioning of power lines as part of rationalisation programmes.*

[6] ***Cost of environmental activities**: This regards vegetation management, grass cutting, waste management and demolition/decommissioning activities, which represent small amounts and are not included under investment. These cost items, which are directly identifiable within the management accounts, do not cover all environmental operating costs, but do comprise the majority of such costs.*

9

Focus on the Tamini Group

The particular nature of the Tamini Group is reflected in the specific materiality analysis and its key environmental and social data.

>>

Tamini Group

The Tamini Group - acquired on 20 May 2014 by the subsidiary, Terna Plus - operates in the electromechanical sector and is a leader in the design, production, commercialisation and repair of power transformers for electricity transmission and distribution grids, of industrial transformers for the steel and metals industry and of special transformers for convertors used in electrochemical and electrolytic production. The Group's operations are based at six production plants located in Italy at Legnano (MI), Melegnano (MI), Novara, Valdagno (VI), Ospitaletto (BS) and Rodengo (BZ).

The Rodengo plant specialises in services, whilst the Novara production plant continues to manufacture coils, operating as a service centre for all the production sites that manufacture for both the Power and Industrial sectors.

TAMINI GROUP CERTIFICATIONS AND ACCREDITATIONS

TYPE	SCOPE	YEAR OF 1ST ISSUE	YEAR OF RELEASE	YEAR OF EXPIRY
ISO 9001:2015	Tamini Group	1993	2018	2021
ISO 14001:2015	Tamini Group - Legnano (MI), Valdagno (VI) and Ospitaletto (BS) plants	2015	2018	2021
BS OHSAS 18001:2007	Tamini Group	2015	2018	2021

Tamini Group's materiality analysis

As part of the process of progressively applying the Group's reporting standards to its subsidiary, Tamini, a materiality analysis was conducted for the Tamini Group in early 2019.

As described in the "Methodological note" (see page 28), in view of its business model and activities, the Tamini Group is considered to be unlike the rest of the Terna Group. For this reason, data for the Tamini Group is not aggregated with the data for the Terna Group. The materiality analysis represented an opportunity to take a closer look at the particular nature of the Tamini Group.

From a methodological viewpoint, as Terna has adopted the GRI Standards as the basis for its reporting, GRI Standard 103 also formed the basis for the analysis conducted for the Tamini Group. The materiality analysis entailed a series of activities that have enabled identification of the various aspects and processes that characterise the Tamini Group's business and its stakeholder relations. The process began with an analysis of documents, resulting in the mapping of content, projects and initiatives that play a major role in the Group's activities.

Following this analysis, the data obtained was organised and structured in order to produce two charts:

- a Topic Tree, consisting of 17 topics organised into five macro areas;
- a Stakeholder Map, showing fourteen categories of stakeholder, grouped into four areas based on the business context they belong to.

In order to determine the internal significance of topics, interviews were carried out with key departments to gain a further insight into activities and internal processes relating to:

- personnel management;
- supply chain relations and management;
- quality of processes;
- customer relations.

Having consulted the various departments, a meeting was held with Tamini's Chief Executive Officer.

Instead, as regards stakeholder opinions, an analysis of external sources (e.g., national media coverage, local press coverage, news releases issued by labour unions and trade associations) was conducted. These sources were then supplemented with the views of the Company's departments, resulting in an assessment of external significance.

The following chart shows a list of topics in order of internal significance for the Tamini Group.

TAMINI GROUP'S RELEVANT TOPICS

MACRO TOPIC	TOPIC DETAILS	INTERNAL SIGNIFICANCE
People and the community	Workers' health and safety and correct working practices	HIGH
Production, sale and installation	Marketing and level of service provided by the sales network	
Production, sale and installation	Quality of production to meet customers' needs	
Business management	Achievement of financial targets	
Production, sale and installation	Quality of product installation and after-sales service	
Business management	Quality and management of the supply chain	
Business management	Business development and diversification	
People and the community	Personnel development	
Environmental impact management	Reduction of consumption and energy efficiency initiatives	
Business management	Product and process innovation	AVERAGE
Production, sale and installation	Quality and competence of servicing of products not branded Tamini	
Production, sale and installation	Plant monitoring and implementation of maintenance systems	
Ethics and governance system	Robustness and integrity of governance system	
Environmental impact management	Monitoring of environmental emissions and reduction in ecological footprint	
People and the community	Promotion of initiatives benefitting local communities	LOW
Business management	Attentive risk management	
People and the community	Promotion of welfare, diversity and equal opportunities	

Taking into account the opinions of external stakeholders, the following topics are more significant: cuts to consumption and energy efficiency, the monitoring of emissions and the promotion of initiatives for the benefit of local communities.

With respect to the Terna Group's materiality analysis, there are certain specific topics relating to process, product, marketing and customer needs.

Key social data

COMPOSITION OF THE WORKFORCE AT 31 DECEMBER

	2019	2018	2017
Total	**351**	**355**	**368**
Senior managers	8	9	10
Middle managers	15	16	17
Office staff	125	121	129
Blue-collar workers	203	209	212

WORKFORCE TRENDS

	2019	2018	2017
Total employees	**351**	**355**	**368**
Employees recruited during the year	16	14	5
Employees leaving during the year	20	26	33
*Turnover rate (%)**	*6*	*7*	8

** The turnover rate shows the ratio of employees leaving the Company to the number of employees at 31 December of the previous year.*

PERSONNEL DEVELOPMENT

	2019	2018	2017
Hours of training provided	2,486	4,051	4,452
Percentage of employees undergoing performance appraisal	100	62	71

OCCUPATION INJURIES SUFFERED BY EMPLOYEES - GRI-ILO DEFINITIONS [1]

	UNIT	2019	2018	2017
Injury rate [2]		1.2	3.5	4.5
Lost day rate [3]		40.5	76.1	82.6
Injuries	no.	4	11	15
of which serious	no.	1	1	2
of which fatal	no.	0	0	0

[1] The figures for the two-year period 2018-2017 have been modified with respect to the previously published data as the criterion for defining serious injuries is not consistent with the basis used by the Parent Company, Terna S.p.A..

[2] The number of injuries resulting in the loss of at least one day divided by the number of hours worked during the year, multiplied by 200,000 (corresponding to 50 working weeks x 40 hours x 100 employees). To aid comparison with other sources, this indicator has also been calculated using a multiplication factor of 1,000,000 instead of 200,000 (thereby resulting in an injury rate 5 times the ILO injury rate). Based on this method of calculation, the injury rate **is 6.1 in 2019, 17.4 in 2018 and 22.5 in 2017.**

[3] The ratio of days lost due to injury to the number of hours worked during the year, multiplied by 200,000. The days lost are calendar days and are counted from the day on which the injury occurs. To aid comparison with other sources, this indicator has also been calculated using a multiplication factor of 1,000. Based on this method of calculation, the lost day rate **is 0.20 in 2019, 0.48 in 2018 and 0.41 in 2017.**

Key environmental data

CONSUMPTION

	UNIT	2019	2018	2017
Electricity	GWh	4.6	4.6	4.4
Natural gas	000's of m^3	1,183	1,047	970
Water	cubic metres	11,011	15,573	19,903

DIRECT AND INDIRECT ENERGY CONSUMPTION - GIGAJOULES*

	2019	2018	2017
Direct consumption in GJ			
Natural gas for heating	473	419	388
Indirect consumption in GJ			
Electricity	16,619	16,619	15,735

TOTAL DIRECT AND INDIRECT GREENHOUSE GAS EMISSIONS - TONNES OF CO_2 EQUIVALENT*

	2019	2018	2017
Direct emissions			
Natural gas for heating	27	23	22
Indirect emissions			
Electricity**	**1,548**	**1,556**	**1,621**

** To convert consumption into CO_2 equivalent emissions, the parameters set out in the IPCC Fifth Assessment Report (AR5) and Greenhouse Gas Protocol (GHG) Initiative were used.*

*** The conversion of indirect electricity consumption is carried out taking into account the share of total Italian electricity production represented by thermoelectric production in 2019. Allocation for the purposes of the production mix was based on the December 2019 issue of the "Monthly Report on the Electricity System", available on the website at www.terna.it.*

WASTE BY TYPE - IN TONNES

	2019	2018	2017
Waste produced*	**1,045.3**	**1,027.7**	**1,151.4**
of which hazardous	159.7	145.8	278.4
of which non-hazardous	885.6	881.9	873.1
Waste sent for recovery	**1,045.4**	**1,046.2**	**773.6**
of which hazardous	163.7	164.3	-
of which non-hazardous	881.7	881.9	773.6
Waste sent for disposal	**18**	**2**	**377.8**
of which hazardous	14	2	278.4
of which non-hazardous	4	-	99.4

** Only special waste produced during production processes is included, not waste produced by services (urban waste). The data for waste is based on the figures in the Environmental Declaration forms for 2018 and 2017. As a result, the waste shown in the table was produced during the two-year period 2017-2016.*

10

GRI Content index

The index of all the disclosures included in this Report associated with the matching indicators and their links with the ten Global Compact principles.

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GRI Standards Content Index

The GRI content index is a table showing the pages in the document in which the information relating to each disclosure requirement can be found. The page references refer to the disclosures required by the GRI standards. In certain cases, reference is also made to the key indicator tables provided in the annex and which, whilst not falling within the scope of the "Non-financial Statement", enable the reader to obtain a more detailed view of the data presented in the document.

GRI 102: GENERAL DISCLOSURES

	INDICATOR	PAGE AND NOTES
Organisational profile	102-1	39
	102-2	39, 43-45, 52-55, 57-59
	102-3	39
	102-4	43-45, 52-55, 57-59
	102-5	46
	102-6	52-55, 57-59
	102-7	39, 43-45, 172
	102-8	172-174, 275-276
	102-9	92-98, 190-191
	102-10	43-45
	102-11	198-211
	102-12	14-15, 40-41, 74-76, 82, 123-125, 206
	102-13	82, 124-125
Strategy	102-14	4-5
	102-15	32-33, 34-35, 64-67, 75-81
Ethics and integrity	102-16	14, 74, 102; Report on Corporate Governance and Ownership Structures
	102-17	87, 119-120, 207, 271; Code of Ethics: 44-45
Governance	102-18	48-49, 75-76; Report on Corporate Governance and Ownership Structures
	102-19	48-49, 75-76; Report on Corporate Governance and Ownership Structures
	102-20	48-49, 75-76; Report on Corporate Governance and Ownership Structures
	102-21	Report on Corporate Governance and Ownership Structures
	102-22	48-49; Report on Corporate Governance and Ownership Structures
	102-23	Report on Corporate Governance and Ownership Structures
	102-24	Report on Corporate Governance and Ownership Structures
	102-25	Report on Corporate Governance and Ownership Structures
	102-26	48-49, 75-76; Report on Corporate Governance and Ownership Structures
	102-28	Report on Corporate Governance and Ownership Structures
	102-29	31-33, 48-49, 64-67, 75-81, 88-89; Report on Corporate Governance and Ownership Structures
	102-30	Report on Corporate Governance and Ownership Structures
	102-31	29-31, 75-78, 88
	102-32	26-31
	102-35	Report on Corporate Governance and Ownership Structures
	102-36	Report on Corporate Governance and Ownership Structures
	102-37	Report on Corporate Governance and Ownership Structures
Stakeholder engagement	102-40	103
	102-41	177
	102-42	103
	102-43	29-31, 103
	102-44	29-33, 103, 112-122, 175-177
Reporting practices	102-45	28, 43-45
	102-46	26-31
	102-47	29-33
	102-48	28
	102-49	29-31
	102-50	28
	102-51	26, 28
	102-52	26, 28
	102-53	119
	102-54	26
	102-55	234
	102-56	26, 242

GRI 103: MANAGEMENT APPROACH

	103-1	28-33
	103-2	The following section on the GRI topic specific standards includes page references for the information on standards 103-2 and 103-3 for each material topic
	103-3	

GRI Topic Specific Standards

GRI 200: ECONOMIC TOPICS

CODE	TOPIC / INDICATOR	PAGE	LIMITATION AND NOTES
ECONOMIC PERFORMANCE		64-65, 68-70, 140-141	
201-1	Direct economic value generated and distributed.	68, 263	*A description of how Terna determines value added and its distribution is provided on page 68.*
201-2	Financial implications for the organization's activities due to climate change.	64	
201-3	Coverage of the organisation's defined benefit plan obligations.	182	
201-4	Financial assistance received from government.	60	
INDIRECT ECONOMIC IMPACTS		68-70,120-121	
203-1	Infrastructure investments and services supported.	120-121	
PROCUREMENT PRACTICES		92-98	
204-1	Proportion of spending on local suppliers.	92, 264	
ANTI-CORRUPTION		84-86	
205-1	Proportion of business units assessed for risks related to corruption and risks identified.	84	
205-2	Communication and training about anti-corruption policies and procedures.	87, 270	*Information on suppliers is provided on page 92; for the members of the Board of Directors, see the "Report on Corporate Governance and Ownership Structures".*
205-3	Confirmed incidents of corruption and actions taken.	83	
ANTI-COMPETITIVE BEHAVIOUR		39, 88, 113-114	
206-1	Total legal actions for anti-competitive behaviour, antitrust and monopoly practices and related judgements.	83	

GRI 300: ENVIRONMENT TOPICS

CODE	TOPIC / INDICATOR	PAGE	LIMITATION AND NOTES
MATERIALS		197, 203	
301-1	Materials used by weight or volume.	203, 280	
ENERGY		197, 218	
302-1	Energy consumption within the organization.	215, 279	
302-3	Energy intensity.	215	
BIODIVERSITY		197-199, 201	
304-1	Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas.	208, 277	
304-4	Total number of IUCN red list species and national conservation list species with habitats in areas affected by operations, by level of extinction risk.	210	
EMISSIONS		197, 212, 214	
305-1	Direct greenhouse gas emissions by weight (scope I).	212-213, 214, 277	
305-2	Indirect greenhouse gas emissions by weight (scope II).	212-213, 277	
305-3	Other indirect greenhouse gas emissions (scope III).	219, 278	
305-4	Carbon intensity.	213, 278	
305-5	Initiatives to reduce greenhouse gas emissions and results achieved.	214-215	
EFFLUENTS AND WASTE		197, 203	
306-2	Total weight of waste by type and disposal method.	205-206, 276	
306-3	Total number and volume of significant spills.	206	
ENVIRONMENTAL COMPLIANCE		83, 197	
307-1	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations.	83	
SUPPLIER ENVIRONMENTAL ASSESSMENT		92, 190, 191, 197	
308-1	Percentage of new suppliers that were screened using environmental criteria.	92	
308-2	Significant negative environmental impacts identified in the supply chain and actions taken.	92	

GRI 400: SOCIAL TOPICS

CODE	TOPIC / INDICATOR	PAGE	LIMITATION AND NOTES
EMPLOYMENT		171, 190	
401-1	Total number and rates of new employee hires and employee turnover.	172-173, 269	
401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees.	182	
401-3	Parental leave.	183	
LABOUR/MANAGEMENT RELATIONS		171, 177	
402-1	Minimum notice periods regarding operational changes including whether these are specified in collective agreements.	177	
OCCUPATIONAL HEALTH AND SAFETY		76, 177, 185, 190	
403-1	Percentage of total workforce represented in health and safety committees.	185	
403-2	Type of injury and rates of injury, occupational diseases, lost days, and absenteeism, and total number of work-related fatalities, by region.	188-189, 273	
403-4	Health and safety topics covered in formal agreements with trade unions.	185	
TRAINING AND EDUCATION		178-179	
404-1	Average hours of training per year per employee by gender and by employee category.	180, 270	
DIVERSITY AND EQUAL OPPORTUNITIES		177, 192	
405-1	Composition of governance bodies and breakdown of employees per employee category according to gender, age group, minority group membership, and other indicators of diversity.	48, 172, 192, 262, 269 275	
405-2	Ratio of basic salary and remuneration of women to men by employee category, by significant locations of operation.	192, 275	
NON-DISCRIMINATION		90-91	
406-1	Total incidents of discrimination and actions taken.	90, 265	
FREEDOM OF ASSOCIATION AND COLLECTIVE BARGAINING		90, 92, 190	
407-1	Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk and actions taken.	95	
HUMAN RIGHTS ASSESSMENT		90	
412-1	Operations that have been subject to human rights reviews or impact assessments.	90	
412-3	Total number and percentage of significant investment agreements and contracts that include human rights clauses.	90	*All suppliers are required to give a contractual undertaking to comply with Terna's Code of Ethics. See page 92.*
LOCAL COMMUNITIES		105-111	
413-1	Percentage of operations with implemented local community engagement, impact assessments, and development programs.	105	
413-2	Operations with significant actual and potential negative impacts on local communities.	107, 198-199	
SUPPLIER SOCIAL ASSESSMENT		92-98,190-191	
414-1	New suppliers that were screened using social criteria.	92	
414-2	Significant negative social impacts identified in the supply chain and actions taken.	92	*The qualitative description is provided on page 92.*
POLITICAL DONATIONS		120	
415-1	Total financial donations and benefits to parties, politicians and institutions by country and recipient/beneficiary.	120	
CUSTOMER PRIVACY		89, 158	
418-1	Total number of complaints regarding breaches of customer privacy and losses of customer data.	158	
SOCIOECONOMIC COMPLIANCE		83	
419-1	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with laws and regulations.	83	

List of material performance indicators required to meet sector disclosure requirements for the electric utilities sector (EUSS)

CODE	TOPIC / INDICATOR	PAGE	LIMITATION AND NOTES
ORGANISATIONAL PROFILE			
EU3	Number of residential, commercial and industrial customers.	116, 264	
EU4	Length of above and underground transmission and distribution lines by voltage.	267	
SYSTEM EFFICIENCY			
EU12	Transmission and distribution losses as a percentage of total energy.	219	
BIODIVERSITY			
EU13	Biodiversity of offset habitats compared to the biodiversity of the affected areas.	201, 208	
EMPLOYMENT			
EU15	Percentage of employees eligible to retire in the next 5 and 10 years broken down by job category and by region.	174	
EU17	Days worked by contractor and subcontractor employees involved in construction, operation & maintenance activities.	190, 272	
EU18	Percentage of contractor and subcontractor employees that have undergone relevant health and safety training.	190	
LOCAL COMMUNITIES			
EU22	Number of people physically or economically displaced due to new or expanded generation plants or transmission lines and compensation.	107	
CUSTOMER HEALTH AND SAFETY (COMMUNITIES)			
EU25	Number of injuries and fatalities to the public involving company assets, including legal judgments, settlements and pending legal cases of diseases.	83	
ACCESS			
EU28	Power outage frequency.	136, 268	
EU29	Average power outage duration.	136, 268	

List of other GRI performance indicators published

In line with previous years, the Group has opted to publish certain indicators despite the fact that they are judged to fall below the materiality threshold (see the specific section on materiality on page 12).

CODE	INDICATOR	PAGE
202-2	Proportion of senior management hired from the local community.	192
303-1	Total water withdrawal by source.	203, 280
408-1	Operations and suppliers identified as having significant risk for incidents of child labour, and measures taken to contribute to the effective abolition of child labour.	90, 95
409-1	Operations and suppliers identified as having significant risk for incidents of forced or compulsory labour, and measures to contribute to the elimination of all forms of forced or compulsory labour.	95

Links between

the GRI indicators and the Global Compact principles

This table shows the links between the GRI Standards performance indicators applicable to Terna and each of the ten Global Compact Principles, with the aim of helping interested stakeholders find the relevant information to enable them to assess Terna's implementation of the principles.

AREA	GLOBAL COMPACT PRINCIPLE	GRI TOPIC AND DISCLOSURES		PAGE OF THE REPORT
Human Rights	**Principle 1** Businesses should **support and respect the protection of internationally proclaimed human rights**	**Human rights**		
		"Investment" Aspect	412-3	90, 236
		"Assessment" Aspect	412-1	90, 236
		Society		
		"Local Communities" Aspect	413-1	105, 236
			413-2	107, 198, 236
	Principle 2 Businesses should **make sure that they are not complicit in human rights abuses**	**Human rights**		
		"Investment" Aspect:	412-3	90, 236
		"Supplier Human Rights Assessment" Aspect	414-1	92, 236
			414-2	92, 236
Labour	**Principle 3** Businesses should **uphold the freedom of association** and the effective recognition of the right to collective bargaining	**Human rights**		
		"Investment" Aspect	412-3	90, 236
		"Supplier Human Rights Assessment" Aspect	414-1	92, 236
			414-2	92, 236
			407-1	95, 236
		Labour		
		"Labour/Management Relations" Aspect	402-1	177, 236
	Principle 4 Businesses should **eliminate all forms of forced and compulsory labour**	**Human rights**		
		"Force or Compulsory Labour" Aspect	409-1	95, 237
	Principle 5 Businesses should **effectively abolish child labour**	**Human rights**		
		"Child Labour" Aspect	408-1	90, 95, 237
	Principle 6 Businesses should **eliminate all forms of discrimination** in respect of employment and occupation	**Economy**		
		"Market Presence" Aspect	202-2	192, 237
		Correct labour practices		
		"Employment" Aspect	401-1	172, 173 236, 269
		"Training" Aspect	404-1	180, 236 270
		"Equal Opportunities" Aspect	405-1	48, 172 192, 236 262, 269 275
		"Equal Remuneration for Men and Women" Aspect	405-2	192, 236 275
		Human rights		
		"Non-Discrimination" Aspect	406-1	90, 236 265

AREA	GLOBAL COMPACT PRINCIPLE	GRI TOPIC AND DISCLOSURES		PAGE OF THE REPORT
Environment	**Principle 7** **Businesses should support a precautionary approach to environmental challenges**	**Environment**		
		"Materials" Aspect	301-1	235, 280
		"Water" Aspect	303-1	203, 237, 280
		"Emissions" Aspect	305-1	212, 214 235, 277
			305-2	212, 235, 277
			305-3	219, 235, 278
	Principle 8 Businesses should undertake initiatives to promote **greater environmental responsibility**	**Environment**		
		"Materials" Aspect	301-1	235, 280
		"Water" Aspect	303-1	203, 237, 280
		"Biodiversity" Aspect	304-1	208, 235, 277
			304-4	210, 235
		"Effluents and Waste" Aspect	306-2	205, 235, 276
			306-3	206, 235
		"Compliance" Aspect	307-1	83, 235
		"Supplier Environmental Assessment" Aspect	308-1	92, 235
			308-2	92, 235
	Principle 9 Businesses should encourage the **development** and **diffusion of environmentally friendly technologies**	**Environment**		
		"Energy" Aspect	302-3	215, 235
		"Emissions" Aspect	305-4	213, 235, 278
			305-5	214, 235
Combatting corruption	**Principle 10** Businesses should **work against corruption in all its forms**, including extortion and bribery	**Society**		
		"Anticorruption" Aspect	205-2	87, 235, 270
			205-3	83, 235
		"Public Policy" Aspect	415-1	120, 236

11

Report

Independent Auditors' report on the Consolidated Non-financial Statement for 2019.

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Independent Auditor's report on the consolidated non-financial statement

pursuant to article 3, paragraph 10, of Legislative Decree 254/2016 and article 5 of CONSOB Regulation 20267 of January 2018

Terna SpA

Year ended 31 December 2019

Independent Auditor's report on the consolidated non-financial statement

pursuant to article 3, paragraph 10, of Legislative Decree 254/2016 and article 5 of CONSOB Regulation 20267 of January 2018

To the Board of Directors of Terna SpA

Pursuant to article 3, paragraph 10, of Legislative Decree 254 of 30 December 2016 (the "Decree") and article 5 of CONSOB Regulation 20267, we have performed a limited assurance engagement on the Sustainability Report and Consolidated Non-Financial Statement of Terna SpA and its subsidiaries (hereafter the "Group" or "Terna Group") for the year ended 31 December 2019, in accordance with article 4 of the Decree and approved by the Board of Directors convened on 10 March 2020 (hereafter the "NFS").

Responsibility of the Directors and the Board of Statutory Auditors for the NFS

The Directors are responsible for the preparation of the NFS in accordance with article 3 and 4 of the Decree and with the GRI - Sustainability Reporting Standards, defined in 2016 (hereafter "GRI Standards"), identified as the reporting standards.

The Directors are responsible, in the terms prescribed by law, for such internal control as management determines is necessary to enable the preparation of a NFS that is free from material misstatement, whether due to fraud or errors.

The Directors are responsible for identifying the content of the NFS, within the matters mentioned in article 3, paragraph 1, of the Decree, considering the activities and characteristics of the Group and to the extent necessary to ensure an understanding of the Group's activities, performance, results and related impacts.

The Directors are responsible for defining the business and organisational model of the Group and, with reference to the matters identified and reported in the NFS, for the policies adopted by the Group and for the identification and management of risks generated and/or faced by the Group.

The Board of Statutory Auditors are responsible for overseeing, in the terms prescribed by law, compliance with the Decree.

PricewaterhouseCoopers SpA

Sede legale e amministrativa: Milano 20149 Via Monte Rosa 91 Tel. 0277851 Fax 027785240 Cap. Soc. Euro 6.890.000,00 i.v., C.F. e P.IVA e Reg. Imp. Milano 12979880155 Iscritta al n° 119644 del Registro dei Revisori Legali - Altri Uffici: **Ancona** 60131 Via Sandro Totti 1 Tel. 0712132311 - **Bari** 70122 Via Abate Gimma 72 Tel. 0805640211 - **Bergamo** 24121 Largo Belotti 5 Tel. 035229691 - **Bologna** 40126 Via Angelo Finelli 8 Tel. 0516186211 - **Brescia** 25121 Viale Duca d'Aosta 28 Tel. 0303697501 - **Catania** 95129 Corso Italia 302 Tel. 0957532311 - **Firenze** 50121 Viale Gramsci 15 Tel. 0552482811 - **Genova** 16121 Piazza Piccapietra 9 Tel. 01029041 - **Napoli** 80121 Via dei Mille 16 Tel. 08136181 - **Padova** 35138 Via Vicenza 4 Tel. 049873481 - **Palermo** 90141 Via Marchese Ugo 60 Tel. 091349737 - **Parma** 43121 Viale Tanara 20/A Tel. 0521275911 - **Pescara** 65127 Piazza Ettore Troilo 8 Tel. 0854545711 - **Roma** 00154 Largo Fochetti 29 Tel. 06570251 - **Torino** 10122 Corso Palestro 10 Tel. 011556771 - **Trento** 38122 Viale della Costituzione 33 Tel. 0461237004 - **Treviso** 31100 Viale Felissent 90 Tel. 0422696911 - **Trieste** 34125 Via Cesare Battisti 18 Tel. 0403480781 - **Udine** 33100 Via Poscolle 43 Tel. 043225789 - **Varese** 21100 Via Albuzzi 43 Tel. 0332285039 - **Verona** 37135 Via Francia 21/C Tel. 0458263001 - **Vicenza** 36100 Piazza Pontelandolfo 9 Tel. 0444393311

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Auditor's Independence and Quality Control

We are independent in accordance with the principles of ethics and independence set out in the Code of Ethics for Professional Accountants published by the International Ethics Standards Board for Accountants, which are based on the fundamental principles of integrity, objectivity, competence and professional diligence, confidentiality and professional behaviour. Our audit firm adopts International Standard on Quality Control 1 (ISQC Italy 1) and, accordingly, maintains an overall quality control system which includes processes and procedures for compliance with ethical and professional principles and with applicable laws and regulations.

Auditor's responsibilities

We are responsible for expressing a conclusion, on the basis of the work performed, regarding the compliance of the NFS with the Decree and with the GRI Standards. We conducted our engagement in accordance with International Standard on Assurance Engagements 3000 (Revised) – Assurance Engagements Other than Audits or Reviews of Historical Financial Information (hereafter "ISAE 3000 Revised"), issued by the International Auditing and Assurance Standards Board (IAASB) for limited assurance engagements. The standard requires that we plan and apply procedures in order to obtain limited assurance that the NFS is free of material misstatement. The procedures performed in a limited assurance engagement are less in scope than those performed in a reasonable assurance engagement in accordance with ISAE 3000 Revised, and, therefore, do not provide us with a sufficient level of assurance that we have become aware of all significant facts and circumstances that might be identified in a reasonable assurance engagement.

The procedures performed on the NFS were based on our professional judgement and consisted in interviews, primarily of company personnel responsible for the preparation of the information presented in the NFS, analyses of documents, recalculations and other procedures designed to obtain evidence considered useful.

In particular, we performed the following procedures:

1. analysis of the relevant matters reported in the NFS relating to the activities and characteristics of the Group, in order to assess the reasonableness of the selection process used, in accordance with article 3 of the Decree and the with the reporting standard adopted;
2. analysis and assessment of the criteria used to identify the consolidation area, in order to assess their compliance with the Decree;
3. comparison of the financial information reported in the NFS with that reported in the Group's Consolidated Financial Statements;
4. understanding of the following matters:
   - business and organisational model of the Group, with reference to the management of the matters specified by article 3 of the Decree;
   - policies adopted by the Group with reference to the matters specified in article 3 of the Decree, actual results and related key performance indicators;
   - main risks generated or faced by the Group, with reference to the matters specified in article 3 of the Decree.

   With reference to those matters, we compared the information obtained with the information presented in the NFS and carried out the procedures described under point 5 a) below;

5. understanding of the processes underlying the preparation, collection and management of the significant qualitative and quantitative information included in the NFS. In particular, we held meetings and interviews with the management of Terna SpA and the personnel of Terna Rete Italia SpA, and we performed limited analyses of documentary evidence, to gather information about the processes and procedures for the collection, consolidation, processing and submission of the non-financial information to the function responsible for the preparation of the NFS.

   Moreover, for material information, considering the activities and characteristics of the Group:

   - at parent company level,
     a) with reference to the qualitative information included in the NFS, and in particular to the business model, the policies adopted and the main risks, we carried out interviews and acquired supporting documentation to verify their consistency with available evidence;
     b) with reference to quantitative information, we performed analytical procedures as well as limited tests, in order to assess, on a sample basis, the accuracy of consolidation of the information;
   - at a site/plant level, Direzione Territoriale Nord Est – Area Operativa Trasmissione Firenze (Terna Rete Italia SpA), which was selected on the basis of its activities, its contribution to the performance indicators at a consolidated level and its location, we carried out site visits and walk through procedures during which we met local management and gathered supporting documentation regarding the correct application of the procedures and calculation methods used for the key performance indicators.

Conclusions

Based on the work performed, nothing has come to our attention that causes us to believe that the NFS of Terna Group as of 31 December 2019 has not been prepared, in all material respects, in compliance with articles 3 and 4 of the Decree and with the GRI Standards.

Rome, 16 April 2020

PricewaterhouseCoopers SpA

Signed by

Luca Bonvino
(Partner)

Signed by

Paolo Bersani
(Authorised signatory)

This report has been translated from the original, which was issued in Italian, solely for the convenience of international readers. We have not performed any verification procedures on the English translation of the NFS of Terna Group as of 31 December 2019.

12

Annexes

This section of “Annexes” includes the **Green Bond Report 2019**, accompanied by the assurance report from the Independent Auditors, PricewaterhouseCoopers, and the **Key Indicator Tables**.

>>

Green Bond Report 2019

In the two-year period 2018-2019, Terna issued three green bonds as part of its €8,000,000,000 Euro Medium Term Notes (EMTN) programme:

- on 16 July 2018, Terna successfully launched its first green bond issue, worth €750 million and having a 5-year term;
- on 10 January 2019, the Company launched a fixed-rate green bond issue in the form of a private placement, amounting to €250 million, having reopened the bond issue announced to the market on 16 July 2018;
- on 3 April 2019, the Company launched an issue of euro-denominated green bonds with a total nominal value of €500 million and a 7-year term.

The net proceeds from the three issues are being used to fund the Company's Eligible Green Projects, selected on the basis of the "Green Bond Principles 2018" published by the ICMA - International Capital Market Association.

In this regard, Terna has drawn up and published a "Green Bond Framework" in order to enhance the transparency and the quality of the green bonds issued. This Framework and the second party opinion provided by the independent advisor, Vigeo Eiris, are available to the public on the Company's website (www.terna.it).

Vigeo Eiris assessed the bonds' contribution to sustainability, assigning them a "reasonable" level of assurance[99]. Vigeo Eiris also expressed an opinion on the issuer's overall approach to managing ESG issues, judging Terna to be at an "advanced" level[100]. In addition, Vigeo Eiris considered the Eligible Green Projects to be in line with the UN SDGs:

Ensure universal access to affordable, reliable and modern energy services.

Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation.

Take urgent action to combat climate change and its impacts.

Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.

[99] Level of evaluation used by Vigeo Eiris - Level of Assurance: Reasonable, Moderate, Weak.
[100] Level of evaluation used by Vigeo Eiris - Performance: Advanced, Robust, Moderate, Weak.

With this report, Terna is delivering on its commitment, made at the time of the bond issues, to report annually on its use of the proceeds and the environmental benefits resulting from the projects financed with those proceeds.

Compared with the Green Bond Report for 2018, in addition to updating the report on the issue of July 2018, information is provided for the first time about the issues carried out in 2019.

The indicators shown in the following tables have been determined in accordance with the "Green Bond Framework", showing the relevant amounts, how the proceeds have been allocated and the main environmental benefits for each environmental category within which the projects must fall in order to qualify as "eligible".

The various categories of environmental benefit indicated in the Green Bond Framework are shown below:

Description	Category of environmental benefit
This category includes projects designed to boost renewable energy production: • connecting renewable energy plants (grid infrastructure designed to directly connect renewable energy plants to the transmission grid); • integrating renewable energy production (grid infrastructure that enables a greater volume of renewable energy to be injected into the transmission grid, by, for example, relieving congestion in a certain part of the grid).	Renewable energy
Projects designed to reduce the CO_2 emissions produced by the electricity system by reducing grid losses: • grid infrastructure that enhances transmission efficiency (reducing the difference between power produced and energy consumed, all other conditions being equal).	Energy efficiency
Projects that aim to reduce soil use and the impact on terrestrial biodiversity: • improvements to the grid resulting from the replacement of existing overhead power lines with underground cable and/or the demolition of existing lines. These improvements reduce the permanent occupation of land by overhead lines and the need to cut back the surrounding vegetation. The greatest impact occurs when overhead lines cross areas of environmental interest, such as nature reserves, wetlands and other protected areas. These projects also eliminate the albeit low risk of birds colliding with power lines.	Soil use & biodiversity

Allocation reporting

Information on how the proceeds from the bond issues of July 2018 and January and April 2019 have been used is provide below, showing aggregate amounts and data for each Eligible Green Project.

The following tables also show, for the three bonds, the percentage of the proceeds allocated to refinance parts of projects yet to be completed and to refinance projects (or parts thereof) already completed between 1 January 2014 and the date of the bond issue (% refinanced out of the total) and the balance of unallocated funds and/or funds still held by the issuer.

Issue of 16 July 2018

DESCRIPTION OF INDICATOR	AMOUNT
Total amount for basket of projects included in the Green Bond	€749,189,085
- % of basket refinanced	92
Net Green Bond proceeds	€745,552,500
Green Bond proceeds allocated at 31 December 2019	€735,532,181
Funds/equivalent funds held by the issuer at 31 December 2019	€10,020,319

CATEGORY OF ELIGIBLE GREEN PROJECT	ELIGIBLE GREEN PROJECT	AMOUNT INCLUDED IN GB (€)	PROCEEDS ALLOCATED AT 31 DECEMBER 2019 (€)
Renewable energy	FERRERO S.P.A. WIND FARM	7,830,803	7,730,803
Renewable energy	150kV LANUVIO SUBSTATION	8,385,739	8,388,783
Renewable energy	REORGANISATION OF THE SORRENTO PENINSULA	9,322,958	9,293,052
Renewable energy	UPGRADE OF POWER LINE CAPACITY IN THE NORTH-WEST	60,926,784	54,907,691
Renewable energy	380/150kV GENZANO SUBSTATION	21,196,986	20,681,851
Renewable energy	150kV MAIN POWER LINE BENEVENTO II VOLTURARA CELLE SAN VITO	55,619,662	55,061,733
Renewable energy	150kV MAIN POWER LINE BENEVENTO II -MONTECORVINO	52,232,710	51,426,171
Renewable energy	ASCOLI SATRIANO SUBSTATION	7,609,473	8,589,743
Renewable energy	150kV MACCHIALUPO SUBSTATION	14,508,653	14,592,467
Renewable energy	150kV TURSI SUBSTATION	5,641,361	5,822,366
TOTAL Renewable energy		***243,275,129***	***236,494,661***
Energy efficiency	NEW 380kV COLUNGA-CALENZANO LINE	1,825,822	1,334,763
Energy efficiency	RATIONALISATION IN CITY OF MILAN	7,831,115	8,183,491
Energy efficiency	380kV FOGGIA - VILLANOVA POWER LINE	13,591,442	14,614,682
Energy efficiency	REORGANISATION OF ROME METROPOLITAN AREA	48,682,974	44,842,138
Energy efficiency	REORGANISATION OF 220kV GRID IN CITY OF NAPLES	10,731,274	10,731,274
Energy efficiency	REORGANISATION OF PALERMO METROPOLITAN AREA	4,989,791	4,992,583
Energy efficiency	NEW 220kV ELECTRICITY SUBSTATION AT MUSOCCO	49,745,876	49,756,174
Energy efficiency	WORK ON RENEWABLE ENERGY COLLECTION IN FOGGIA-BARLETTA AREA	17,431,610	17,471,040
TOTAL Energy efficiency		***153,004,082***	***145,867,420***
Soil use & biodiversity	380kV SORGENTE - RIZZICONI POWER LINE	256,662,235	256,307,168
Soil use & biodiversity	380kV TRINO - LACCHIARELLA POWER LINE	75,758,734	75,956,034
Soil use & biodiversity	132kV STAZZONA-VERDERIO POWER LINE	18,663,082	14,848,175
TOTAL Soil use & biodiversity		***351,084,051***	***347,111,376***
GRAND TOTAL		**749,189,085**	**735,532,181**

The sums of the individual items and the sub-totals shown in the table may differ due to the process of rounding the data presented.

Compared with the data presented in the Green Bond Report for 2018 in relation to the issue of 16 July 2018, a number of projects originally included in the related basket have been replaced (in line with the Green Bond Framework) with other eligible projects, also resulting in a difference in the total amount for projects to be financed by the bond issue. In particular, "Rationalisation of the Valle Sabbia" (in the "Renewable energy" category) has been replaced by the following projects: Ferrero S.p.A. wind farm, Lanuvio substation, reorganisation of the Sorrento Peninsula ("Renewable energy" category) and the new Colunga-Calenzano line ("Energy efficiency" category).

Issue of 10 January 2019

DESCRIPTION OF INDICATOR	AMOUNT
Total amount for basket of projects included in the Green Bond	€256,146,248
- % of basket refinanced	71
Net Green Bond proceeds	€250,464,075
Green Bond proceeds allocated at 31 December 2019	€250,627,408
Funds/equivalent funds held by the issuer at 31 December 2019	At 31 December 2019, the bond has been fully allocated

CATEGORY OF ELIGIBLE GREEN PROJECT	ELIGIBLE GREEN PROJECT	AMOUNT INCLUDED IN GB (€)	PROCEEDS ALLOCATED AT 31 DECEMBER 2019 (€)
Renewable energy	132kV GORIZIA SUBSTATION	2,201,861	2,201,861
Renewable energy	SOUTH SAN SOSTENE WIND FARM	4,874,980	4,874,980
Renewable energy	FINALE EMILIA SUBSTATION	4,518,572	4,637,749
Renewable energy	15kKV VAGLIO SUBSTATION AND CONNECTIONS	5,933,549	5,966,980
Renewable energy	CIRÒ E-VENTO WIND FARM	5,780,589	5,894,823
Renewable energy	150kV AVIGLIANO SUBSTATION AND CONNECTIONS	8,239,310	7,998,089
TOTAL Renewable energy		***31,548,861***	***31,574,482***
Energy efficiency	REORGANISATION OF THE UPPER BELLUNESE AREA	1,333,410	1,338,027
Energy efficiency	MONTECORVINO-BENEVENTO	33,717,865	34,297,401
Energy efficiency	REORGANISATION OF FLORENCE METROPOLITAN AREA	11,301,932	10,688,511
TOTAL Energy efficiency		***46,353,206***	***46,323,940***
Soil use & biodiversity	NEW CAMIN-DOLO LINE	53,209,996	53,519,748
Soil use & biodiversity	VALCAMONICA (PHASE A1)	30,490,491	30,505,116
Soil use & biodiversity	NEW 380kV UDINE WEST-REDIPUGLIA LINE	94,543,694	88,704,123
TOTAL Soil use & biodiversity		***178,244,181***	***172,728,986***
GRAND TOTAL		**256,146,248**	**250,627,408**

The sums of the individual items and the sub-totals shown in the table may differ due to the process of rounding the data presented.

Issue of 3 April 2019

DESCRIPTION OF INDICATOR	AMOUNT
Total amount for basket of projects included in the Green Bond	€530,422,373
- % of basket refinanced	33
Net Green Bond proceeds	€498,430,000
Green Bond proceeds allocated at 31 December 2019	€290,862,056
Funds/equivalent funds held by the issuer at 31 December 2019	€207,567,944

CATEGORY OF ELIGIBLE GREEN PROJECT	ELIGIBLE GREEN PROJECT	AMOUNT INCLUDED IN GB (€)	PROCEEDS ALLOCATED AT 31 DECEMBER 2019 (€)
Renewable energy	CAPRI-MAINLAND AND SORRENTO INTERCONNECTION	67,446,846	59,708,985
Renewable energy	150kV OPPIDO SUBSTATION	5,419,541	5,560,760
Renewable energy	150kV FOGGIA SUBSTATION/ CONNECTION OF RENEWABLES	3,850,529	3,970,115
Renewable energy	UPGRADE 150kV PUGLIA WIND FARM COLLECTOR	14,430,564	4,029,563
Renewable energy	380kV FOGGIA - BENEVENTO II POWER LINE	74,088,460	74,770,149
Renewable energy	REORGANISATION NORTH CALABRIA GRID	5,998,089	
Renewable energy	380kV SORGENTE - RIZZICONI POWER LINE	3,810,065	3,402,481
Renewable energy	CARDANO-NEW ARMOURED CABLE	9,611,345	9,767,234
Renewable energy	150kV CASTROCUCCO - MARATEA LINE	2,000,000	
Renewable energy	380kV SUBSTATION FOR FOGGIA-BENEVENTO AREA WIND FARMS	55,849,694	
Renewable energy	RATIONALISATION 220/132kV IN VALLE SABBIA	35,012,603	
Renewable energy	WIND ENERGY S.R.L. BONORVA PLANT	4,578,795	4,585,850
Renewable energy	RENEWABLE ENERGY COLLECTOR IN SICILY	10,674,566	10,367,239
Renewable energy	150kV FIUME SANTO-PORTO TORRES LINE	4,801,527	
Renewable energy	PHOENIX RENEWABLES CANINO PHOTOVOLTAIC PLANT	203,605	260,216
Renewable energy	132kV PIETRAMALA (FI) - ALL. PARCO E SUBSTATION	6,592,286	6,684,240
Renewable energy	220kV GLORENZA SUBSTATION	2,918,236	
Renewable energy	380kV BRINDISI SOUTH SUBSTATION	1,936,947	1,975,768
Renewable energy	380kV GARAGUSO SUBSTATION AND CONNECTIONS	6,490,626	351,219
Renewable energy	EISACKWERK RIO PUSTERIA	3,405,397	147,340
Renewable energy	WORK ON GRID IN NAPLES-CASERTA AREA	4,028,000	179,470
Renewable energy	150kV PICERNO SUBSTATION FOR CONNECTIONS	233,663	
Renewable energy	GRID TO COLLECT RENWABLE ENERGY IN FOGGIA-BARLETTA AREA	6,339,481	455,110
Renewable energy	150kV SAN SEVERO SUBSTATION FOR CONNECTIONS	12,394,098	12,136,037
Renewable energy	SEDAMYL SUBSTATION	2,245,241	
TOTAL Renewable energy		***344,360,204***	***198,351,777***
Energy efficiency	UPGRADE OF UMBRIA GRID	5,006,665	4,954,141
Energy efficiency	ITALY-AUSTRIA INTERCONNECTION	3,901,548	3,931,584
Energy efficiency	RATIONALISATION 132kV PIOMBINO AREA	6,270,246	5,833,803
Energy efficiency	MONTECORVINO - BENEVENTO	7,030,552	1,838,714
Energy efficiency	PATERNÒ - PANTANO - PRIOLO	66,871,640	20,148,037
Energy efficiency	NEW CONNECTION IN PROVINCE OF TREVISO	10,043,436	9,506,194
Energy efficiency	RATIONALISATION 220kV CITY OF TURIN	38,997,412	17,093,645
Energy efficiency	220kV SCHIO SUBSTATION	347,463	347,463
Energy efficiency	REORGANISATION OF HV TERAMO VILLANOVA GRID	4,645,945	4,795,571
Energy efficiency	220kV GLORENZA-TIRANO-PREMADIO LINE	8,787,424	
TOTAL Energy efficiency		***151,902,332***	***68,449,152***
Soil use & biodiversity	REORGANISATION 220kV GRID CITY OF NAPLES	31,995,143	23,885,144
Soil use & biodiversity	REORGANISATION FLORENCE METROPOLITAN AREA	2,164,694	175,982
TOTAL Soil use & biodiversity		***34,159,837***	***24,061,127***
GRAND TOTAL		**530,422,373**	**290,862,056**

The sums of the individual items and the sub-totals shown in the table may differ due to the process of rounding the data presented.

The above tables show the names of eligible projects, coinciding with wide-ranging, complex interventions made up of numerous individual projects and minor works. Each bond (July 2018, January and April 2019) may have been used to finance different parts of the same project. For this reason, the following eligible projects, represented by different amounts, have been financed by more than one bond: the Sorgente-Rizziconi power line, Montecorvino-Benevento, the reorganisation of Florence Metropolitan Area, the reorganisation of the grid serving the city of Naples.

Impact reporting

This section details the impact and the benefits associated with the three categories of Eligible Green Project financed by each of the three Green Bonds issued by Terna. The percentages indicate the proportion of the benefits that can be associated with the stage of completion of the projects (works that have entered service) at 31 December 2019.

For a better understanding of the data relating environmental impacts, the following should be taken into account:

- the impact of the projects in columns A, B and C in the following tables that involve “Connections to renewable energy plants”, “Increased production from renewable sources” and a “Reduction in grid losses” are measured in MW and MWh. The benefit resulting from completion of these projects may also be measured in terms of greenhouse gas emission savings, amounting to over 4 million tonnes of CO_2 a year;

  The above data does not derive from ex-post measurement of the impact of the projects carried out, but - with the exception of connections to renewable energy plants - are the result of grid simulations, conducted using models that permit a comparison of the ex-ante operation of the electricity system and the related environmental impacts with and without the individual projects. The results of the grid simulations are then used in the cost-benefit analysis applied to the main projects included in the Grid Development Plan. Given that there may be several years between the planning of a project and the start-up of work, the cost-benefit analysis (CBA) for a project may be repeated to take into account new scenarios and the environmental impacts may change over time. If there are significant changes to the environmental benefits connected with the projects financed by the Green Bonds, these will be noted in future Green Bond Reports;
- the environmental benefits underpinning the selection of eligible projects - data for which is provided in the following tables - are calculated at the level of each project, which, however, generally consists of a series of works that may require many years to complete. The proceeds from the Green Bonds may be used to finance or refinance a part of the previously planned works that have a part to play in completion of the selected projects in the three baskets and, in this sense, in obtaining the environmental benefits associated with the projects. Considering, in relation to projects financed by the Green Bonds, all the expenses - both those incurred at the time of the issue and those that are expected to be incurred in future years - the Green Bonds finance:
  - approximately a quarter of the total expenditure in the case of the first and second Green Bonds (issued on 16 July 2018 and 10 January 2019, respectively);
  - approximately 15% of the total expenditure in the case of the third Green Bond (issued on 3 April 2019).

Focusing, instead, on expenditure relating to works that have been completed, or that are expected to be completed, over the lives of the three Green Bonds (from 2014 to when all the proceeds have been allocated), the portion financed exceeds 40% in the case of the first Green Bond, over 60% in the case of the second and approximately 30% in the case of the third.

None of the selected projects is the subject of significant proceedings (administrative or final court judgements) resulting in Terna being ordered to pay fines or to act or not act (e.g. prohibitions), or in its employees being found guilty of a criminal offence (full compliance in environmental and socio-economic matters). Finally, there were no environmental disputes resulting in a negative outcome for Terna in 2019.

Issue of 16 July 2018

CATEGORY OF ELIGIBLE GREEN PROJECT	OUTPUT & IMPACT INDICATORS									
	A		B		C		D		E	
	Connections to renewable energy plants (MW)	% at 31/12	Increased production from renewable sources (MWh)	% at 31/12	Reduction in grid losses (MWh)	% at 31/12	Laying of underground cables (km)	% at 31/12	Demolition of lines (km)	% at 31/12
Renewable energy	1,425	100	3,397,499	100						
Energy efficiency					611,434					
Soil use & biodiversity							59	100	198	100

Issue of 10 January 2019

CATEGORY OF ELIGIBLE GREEN PROJECT	OUTPUT & IMPACT INDICATORS									
	A		B		C		D		E	
	Connections to renewable energy plants (MW)	% at 31/12	Increased production from renewable sources (MWh)	% at 31/12	Reduction in grid losses (MWh)	% at 31/12	Laying of underground cables (km)	% at 31/12	Demolition of lines (km)	% at 31/12
Renewable energy	423	64	964,440	64						
Energy efficiency					104,254					
Soil use & biodiversity							170	65	304	53

Issue of 3 April 2019

CATEGORY OF ELIGIBLE GREEN PROJECT	OUTPUT & IMPACT INDICATORS									
	A		B		C		D		E	
	Connections to renewable energy plants (MW)	% at 31/12	Increased production from renewable sources (MWh)	% at 31/12	Reduction in grid losses (MWh)	% at 31/12	Laying of underground cables (km)	% at 31/12	Demolition of lines (km)	% at 31/12
Renewable energy	1,079	93	7,068,279	88						
Energy efficiency					91,211	33				
Soil use & biodiversity							30		47	

Examples of Eligible Green Projects

The following pages show key technical and financial data and details of the environmental benefits for three representative projects in the three categories of benefit taken into account.

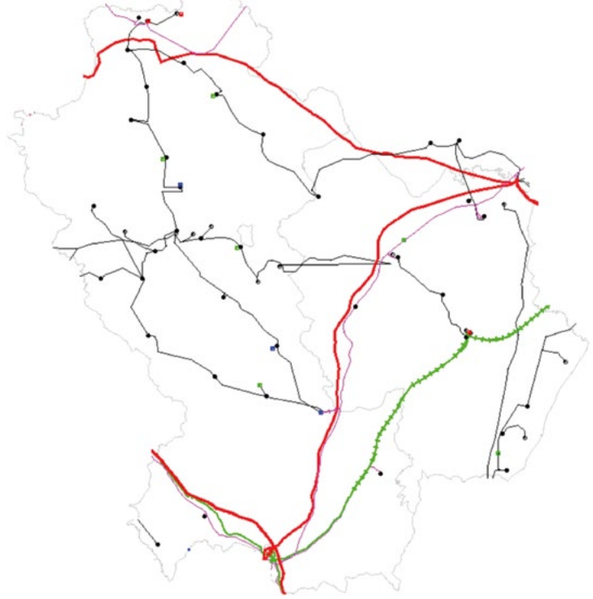
Category: Renewable Energy - New Genzano Electricity Substation

The new 380kV Genzano substation has been built to connect renewable energy plants in the Basilicata region to the HV Matera-Santa Sofia line.

Applications for the connection of renewable energy plants to the NTG (the National Transmission Grid) have been received from 24 plants, making a total of 1 GW. The expected increase in renewable energy integrated into the NTG is **1,951,680 MWh per year.**

DESCRIPTION OF INDICATOR	AMOUNT
Total value of the project included in the Bond at 16 July 2018 (planned amount)	€21,196,986
Proceeds from the green bond allocated to the project at 31 December 2019 (final amount)	€20,681,851
Connections of renewable energy plants	856 MW
Increase in renewable energy production	1,951,680 MWh

The amounts in the table have been revised with respect to those published in the previous document to take into account both the stage of completion of the project and the effective number of valid applications for connection at 31 December 2019.



New Genzano Electricity Station - category: "Renewable energy"

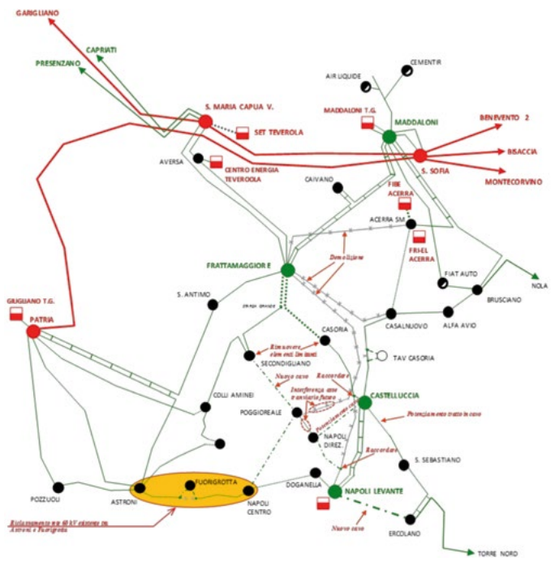
Category: Energy Efficiency - Grid Reorganisation in the City of Naples

In order to improve the security of the grid in Naples and eliminate operational constraints, the Company has devised a development plan involving the construction of three new 220kV power lines, reconstruction of the “Main Naples - Caselluccia” line and the demolition of extensive sections of the “Casoria - Naples Levante” line.

The “Central Naples” distribution substation is of strategic importance and will be involved in work designed to boost the reliability of the grid.

Thanks to the above works, we expect to be able to reduce grid losses by **17,700 MWh per year**. The same project is also bringing benefits in terms of freeing up land, as the following table shows.

DESCRIPTION OF INDICATOR	AMOUNT
Total value of the project included in the Bond at 16 July 2018 (planned amount)	€10,731,274
Proceeds from the green bond allocated to the project at 31 December 2019 (final amount)	€10,731,274
Reduction in grid losses	17,700 MWh
Construction of underground cables	17 km
Demolition of lines	33 km



City of Naples 220kV Grid Reorganisation - category: “Energy efficiency”

Category: environmentally sustainable management of land use - rationalisation of the 220/132kv Piedmont - Lombardy grid

Following the entry into service of the HV 380kV “Trino-Lacchiarella” line in January 2014, the Company has planned a series of measures designed to rationalise the grid in order to minimise the presence of infrastructure in the area.

Thanks to the “Trino-Lacchiarella” line, grid flexibility and security have been improved, reducing the risk of grid congestion.

In addition, the rationalisation has enabled us to **demolish 80 km of overhead lines and lay 50 km of underground cable.**

DESCRIPTION OF INDICATOR	AMOUNT
Total value of the project included in the Bond at 16 July 2018 (planned amount)	€75,757,745
Proceeds from the green bond allocated to the project at 31 December 2019 (final amount)	€75,956,034
Construction of underground cables	50 km
Demolition of lines	80 km

Piedmont and Lombardy 220/132kV High Voltage Grid Rationalisation

Independent auditor's report on the Green Bond Report 2019

To the Board of Directors of Terna SpA

we have performed a limited assurance engagement on the Green Bond Report of Terna SpA for the year ended 31 December 2019 (hereafter the "Report"), approved by the Board of Directors on 10 March 2020 and prepared pursuant to the "Terna – Green Bond Framework" (hereafter the "Framework") issued by Terna SpA on 16 July 2018, respect to:

- the application of the eligibility criteria in the projects financed and refinanced by the Bond described in the Framework and the final list of projects financed and refinanced;
- the allocation of the proceeds obtained through the Bond to the projects financed by it and that the capital invested in the projects financed or refinanced is attributable to the Bond;
- the verification that sustainability indicators are prepared in accordance with the methodology defined in the Framework.

The Report, as required by the Framework, is an annex of the "Sustainability Report – Consolidated Non Financial Statement 2019" of Terna Group.

Responsibility of the Directors

The Directors are responsible for the preparation, the contents and for issuing the Green Bond Report, pursuant the Framework that describes the criteria for eligibility, allocation of the proceeds and sustainability indicators.

The Directors are responsible for such internal control as management determines is necessary to enable the preparation of a Report that is free from material misstatement, whether due to fraud or unintentional errors.

The Directors, furthermore, are responsible for defining, implementing and maintaining systems through which the information necessary for the preparation of the Report are obtained.

Auditor's Independence and Quality Control

We are independent in accordance with the principles of ethics and independence set out in the Code of Ethics for Professional Accountants published by the International Ethics Standards Board for Accountants, which are based on the fundamental principles of integrity, objectivity, competence and professional diligence, confidentiality and professional behaviour. Our audit firm adopts International Standard on Quality Control 1 (ISQC Italy 1) and, accordingly, maintains an overall quality control system which includes processes and procedures for compliance with ethical and professional principles and with applicable laws and regulations.

PricewaterhouseCoopers SpA

Sede legale e amministrativa: Milano 20149 Via Monte Rosa 91 Tel. 0277851 Fax 027785240 Cap. Soc. Euro 6.890.000,00 i.v., C.F. e P.IVA e Reg. Imp. Milano 12979880155 Iscritta al n° 119644 del Registro dei Revisori Legali Altri Uffici: **Ancona** 60131 Via Sandro Totti 1 Tel. 0712132311 **Bari** 70122 Via Abate Gimma 72 Tel. 0805640211 **Bergamo** 24121 Largo Belotti 5 Tel. 035229691 **Bologna** 40126 Via Angelo Finelli 8 Tel. 0516186211 **Brescia** 25121 Viale Duca d'Aosta 28 Tel. 0303697501 **Catania** 95129 Corso Italia 302 Tel. 0957532311 **Firenze** 50121 Viale Gramsci 15 Tel. 0552482811 **Genova** 16121 Piazza Piccapietra 9 Tel. 01029041 **Napoli** 80121 Via dei Mille 16 Tel. 08136181 **Padova** 35138 Via Vicenza 4 Tel. 049873481 **Palermo** 90141 Via Marchese Ugo 60 Tel. 091349737 **Parma** 43121 Viale Tanara 20/A Tel. 0521275911 **Pescara** 65127 Piazza Ettore Troilo 8 Tel. 0854545711 **Roma** 00154 Largo Fochetti 29 Tel. 06570251 **Torino** 10122 Corso Palestro 10 Tel. 011556771 **Trento** 38122 Viale della Costituzione 33 Tel. 0461237004 **Treviso** 31100 Viale Felissent 90 Tel. 0422696911 **Trieste** 34125 Via Cesare Battisti 18 Tel. 0403480781 **Udine** 33100 Via Poscolle 43 Tel. 043225789 **Varese** 21100 Via Albuzzi 43 Tel. 0332285039 **Verona** 37135 Via Francia 21/C Tel. 0458263001 **Vicenza** 36100 Piazza Pontelandolfo 9 Tel. 0444393311

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Auditor's responsibilities

We are responsible for expressing a conclusion, on the basis of the work performed, regarding the compliance of the Report with the Framework. We conducted our engagement in accordance with International Standard on Assurance Engagements 3000 (Revised) – Assurance Engagements Other than Audits or Reviews of Historical Financial Information (hereafter "ISAE 3000 Revised"), issued by the International Auditing and Assurance Standards Board (IAASB) for limited assurance engagements. The standard requires that we plan and apply procedures in order to obtain limited assurance that the Report is free of material misstatement. The procedures performed in a limited assurance engagement are less in scope than those performed in a reasonable assurance engagement in accordance with ISAE 3000 Revised and, therefore, do not provide us with a sufficient level of assurance that we have become aware of all significant facts and circumstances that might be identified in a reasonable assurance engagement.

The procedures performed on the Report were based on our professional judgement and consisted in interviews, primarily of company personnel responsible for the preparation of the information presented in the Report, analyses of documents, recalculations and other procedures designed to obtain evidence considered useful.

In particular, we performed the following procedures:

1. meetings with the personnel of Terna's functions that were involved in preparing the Report, in order to understand the characteristics of the financed and refinanced projects by the Bond and to evaluate the reasonableness of the process and of the internal data management procedures and information;
2. the verification of the application of the eligibility criteria to the financed and refinanced projects by the Bond as described in the Framework;
3. the verification of the traceability in the allocation of the proceeds obtained through the Bond to the projects financed or refinanced by them and the attribution to the Bond of the capital in the projects themselves;
4. the verification of collection, aggregation, processing and transmission process of data relating to the sustainability indicators included in the Report and their verification through sample tests.

Conclusions

Based on the work performed, nothing has come to our attention that causes us to believe that the Green Bond Report of Terna SpA as of 31 December 2019 has not been prepared, in all material respects, in compliance with the Framework, with reference to:

- the application of the eligibility criteria in the projects financed and refinanced by the Bond described in the Framework and the final list of projects financed and refinanced;
- the allocation of the proceeds obtained through the Bond to the projects financed by it and that the capital invested in the projects financed or refinanced is attributable to the Bond;
- the verification that sustainability indicators are prepared in accordance with the methodology defined in the Framework.

Drafting criteria and use and distribution

Without changing our conclusions, we draw attention to the Terna – Green Bond Framework where the criteria of project eligibility, allocation of proceeds and sustainability indicators are described. The Report has been prepared for the purposes illustrated in the first paragraph. As a result, the Report may not be suitable for other purposes. Our report has been prepared exclusively for the purposes indicated in the first paragraph and, therefore, we assume no responsibility towards third parties other than Terna SpA.

Rome, 16 April 2020

PricewaterhouseCoopers SpA

Luca Bonvino
(Partner)

This report has been translated from the original, which was issued in Italian, solely for the convenience of international readers. We have not performed any verification procedures on the English translation of the Green Bond Report of Terna SpA as of 31 December 2019.

Key indicator tables

The following tables present the indicators provided for in the Global Reporting Initiative standards, together with other indicators that Terna believes it is important to publish to illustrate its performance. Certain data already included in the body of the Report are shown for the sake of completeness.

For each indicator, the tables show:

- the unit of measurement;
- the data for 2019, 2018 and 2017;
- if material, the absolute change between 2019 and 2018;
- if material, the percentage change between 2019 and 2018. This change may not match the change calculated on the basis of the figures in the table which, in general, have been rounded to one decimal place.

In general, the figures have been calculated at 31 December and refer to the full year in the case of flow indicators.
To facilitate the reader, definitions of the units of measurement used to report the indicators are defined below. Reference should also be made to the table of acronyms provided after the indicators.

KEY TO UNITS OF MEASUREMENT

#	Category
%	Percentage
€	Euro
€/000	Thousands of euros
€/m	Millions of euros
GJ	Gigajoule
GWh/year	Gigawatt hours per year
GWh	Gigawatt hour
H	Hours
Kg	Kilogrammes
Km	Kilometres
M^3	Cubic Metre
Min	Minutes
MVA	Mega Volt Ampere
MW	Megawatt
MWh	Megawatt hour
no.	Number
Ton	Tonnes
Ton CO_2	Carbon dioxide in tonnes
Y	Years

Profile and activities

Corporate governance*

405-1 >

COMPOSITION OF THE BOARD OF DIRECTORS AS AT 10 MARCH 2020

	UNIT	2019	2018	2017	CHANGE 19-18	% CHANGE 19-18
Men	%	55.6	55.6	55.6	-	-
Women	%	44.4	44.4	44.4	-	-
Under the age of 30	%	-	-	-		
Between the ages of 30 and 50	%	22.2	22.2	22.2	-	-
Over the age of 50	%	77.8	77.8	77.8	-	-

** Further details of Terna S.p.A.'s corporate governance are provided in the "Report on Corporate Governance and Ownership Structures", published on the website (www.terna.it).*

Shareholders

COMPOSITION OF THE SHAREHOLDER BASE

	UNIT	2019	2018	2017	CHANGE 19-18	% CHANGE 19-18
CDP Reti S.p.A.*	%	29.85	29.85	29.85	-	-
Other institutional + retail investors	%	70.15	70.15	70.15	-	-
of which significant institutional investors**	%	5.12	5.12	5.12	-	-

** A subsidiary of Cassa Depositi e Prestiti S.p.A..*

*** Shareholders who, based on the available information and notifications received from the CONSOB, own interests in Terna S.p.A. that are above the notifiable threshold established by CONSOB Resolution 11971/99.*

SOCIALLY RESPONSIBLE INVESTMENTS*

	UNIT	2019	2018	2017	CHANGE 19-18	% CHANGE 19-18
% of share capital held by identifiable institutional investors owned by SRIs	%	15	13	11	2.5	20

** In addition to more traditional criteria, these investments are also based on an approach that takes into account ESG (Environmental, Social, Governance) aspects. Further details of SRIs are provided on page 47 in the section of this Report entitled "Profile and activities".*

SHAREHOLDER RETURN

	UNIT	2019	2018	2017	CHANGE 19-18	% CHANGE 19-18
Total Shareholder Return (TSR)						
- since the IPO	%	724.3	558.8	513.9	165.5	29.6
- since the beginning of the year	%	25.1	7.3	15.9	17.8	243.8

Economic performance

GROUP FINANCIAL HIGHLIGHTS*

	UNIT	2019	2018	2017	CHANGE 19-18	% CHANGE 19-18
Revenue**	(€m)	2,295.1	2,197.0	2,162.8**	98.1	4.5
EBITDA	(€m)	1,741.2	1,650.6	1,603.9	90.6	5.5
EBIT	(€m)	1,155.1	1,096.5	1,077.4	58.6	5.3
EBT	(€m)	1,077.4	1,007.7	988.6	69.7	6.9
Net profit	(€m)	757.3	706.6	688.3	50.7	7.2

** The above amounts have been taken from the Group's reclassified income statement for 2019.*

*** In line with the basis of presentation used for 2019 and 2018, and without modifying the results, revenue from International Activities in 2017 directly includes the margin earned on overseas concessions.*

Value added*

MEASUREMENT AND REDISTRIBUTION OF VALUE ADDED **

< 201-1

	UNIT	2019	2018	2017	CHANGE 19-18	% CHANGE 19-18
A - Remuneration of employees	€	334,976,124	313,038,619	322,058,429	21,937,505	7
B - Payments to the government	€	310,119,263	302,842,820	301,533,096	7,276,443	2
C - Payments to credit providers	€	96,611,961	104,044.756	97,746,883	-7,432,795	-7
D - Payments to providers of risk capital***	€	501,493,004	468,730,134	442,198,240	32,762,870	7
E - Retained by the Company	€	262,448,402	242,888,183	252,011,601	19,560,219	8
TOTAL NET VALUE ADDED	€	1,505,648,753	1,431,544,513	1,415,548,249	74,104,240	5

** Value added measure the value created by an enterprise, but also by an entire economy, over a certain period, usually a year. In corporate accounting terms, value added is calculated by subtracting the costs of purchasing the intermediate goods and services used in operations from the value of production (revenue attributable to the goods and services produced during the year). These costs do not include personnel expenses, which instead form part of the value added by the enterprise to the intermediate goods and services as a result of its operations. The difference between revenue generated by the sale of the final product and the cost of the raw materials (and the related support services) is the value added, which, in addition to personnel expenses, also includes any profit and the share of income used to pay the interest on debt and income tax.*

*** Amounts relating to the creation and distribution of value added have been taken from the consolidated financial statements prepared in accordance with IFRS/IAS. In particular, the Terna Group has used IFRS/IAS since 2005.*

**** Payments to capital providers in 2019 regard the interim dividend paid in November 2019 (€169.2 million) and the final dividend that the Board of Directors decided on 10 March 2020 to propose to shareholders at the Annual General Meeting (€332.3 million).*

Responsible business management

Electric utilities

EU3 >

CUSTOMER ACCOUNTS REGULATED MARKET

	UNIT	2019	2018	2017	CHANGE 19-18	% CHANGE 19-18
Interruptible users	no.	221	243	288	-22	-0.1
Distributors directly connected with the NTG	no.	54*	51*	27	3	0.1
Supply-side dispatching service users (producers and traders)	no.	130	135	140	-5	-0.0
Demand-side dispatching service users (traders and end users, including the Single Buyer)	no.	187	187	186	-	-

** In addition to licensed distributors, the figure also includes the Operators of Closed Distribution Systems for Internal User Networks directly connected with the NTG.*

204-1 >

Suppliers

NUMBER AND QUALIFICATION OF SUPPLIERS

	UNIT	2019	2018	2017	CHANGE 19-18	% CHANGE 19-18
Number of suppliers						
Number of contracted suppliers	no.	2,251	2,148	1,978	103	4.8
Procurement of materials and services						
Goods	(€m)	839	656	292	183	27.9
Works	(€m)	388	340	228	48	14.2
Services	(€m)	257	188	136	70	37.2
Supplier origin (% of total)						
Italian suppliers	%	88.0	92.8	96.3	-4.8	-5.2
Overseas suppliers	%	12.0	7.2	3.7	4.8	66.7
Award procedures*						
European tenders	%	77.8	74.9	65.5	2.9	3.8
Non-European tenders	%	13.2	10.9	15.6	2.3	21.1
Fixed	%	7.5	12.0	12.1	-4.5	-37.6
One-off contracts**	%	1.6	2.2	6.9	-0.6	-28.3
Qualification						
Companies on list of approved suppliers	no.	508	414	404	94	22.7
Qualified categories	no.	47	45	45	2	4.4
Number of audits	no.	766	1,214	604	-448	-36.9

* *Based on the percentage of the value of contract awards.*

** *The "One-off contracts" category primarily includes sponsorship and donations, fees paid to public entities and trade bodies and contracts awarded to previously qualified suppliers by Terna Plus.*

Credit providers

DEBT

	UNIT	2019	2018	2017	CHANGE 19-18	% CHANGE 19-18
Financial debt	(€m)	8,259	7,899	7,796	359	5
Equity*	(€m)	4,232	4,054	3,829	178	4
Debt to Equity	%	195.2	194.8	203.6	-	-

** The figures for equity at 31 December 2019, 2018 and 2017 include non-controlling interests in the Tamini Group and the subsidiaries, Terna Interconnector, Avvenia and SPE Transmissora de energia Linha Verde II S.A. (acquired on 11 November 2019).*

Reports and complaints

IMPLEMENTATION OF THE CODE OF ETHICS

< 406-1

	UNIT	2019	2018	2017	CHANGE 19-18	% CHANGE 19-18
Total reports received*	no.	5	2	1	3	150
*Areas of operation for which reports received***						
- Treatment of employees	no.	-	2	-	-2	-100
- Supplier management	no.	5	-	1	5	-
- Environment and Safety	no.	-	-	-	-	-
- Corruption/ Corporate loyalty	no.	-	-	-	-	-
- Terna's Compliance /Other	no.	-	-	-	-	-
Outcome of reports						
- Without grounds	no.	3	2	1	1	50
- Action taken***	no.	2	-	-	2	-
- Under investigation	no.	-	-	-	-	-

* *The reports received in 2019 were sent to the Audit department by mail, and one via the Whistleblowing portal. The reports received in 2018 were sent to the Audit department. The report received in 2019 was sent to the Audit department.*

** *Each report or infringement may relate to any number of areas of operation.*

*** *Action may take the form of a sanction and/or another form - such as, for example, the revision of procedures, internal controls, etc. - with the aim of avoiding a repetition of the event giving rise to the report.*

ENVIRONMENTAL COMPLAINTS

	UNIT	2019		2018		2017		CHANGE 19-18	% CHANGE 19-18
		RECEIVED	DEALT WITH	RECEIVED	DEALT WITH	RECEIVED	DEALT WITH	RECEIVED	DEALT WITH
Total complaints received	n°	20	17	26	24	25	20	3	18
Environmental aspect of complaints received									
- Waste	no.	-	-	-	-	1	1	-	-
- Noise	no.	6	4	12	11	13	9	2	50
- Biodiversity	no.	-	-	-	-	-	-	-	-
- Landscape	no.	-	-	-	-	-	-	-	-
- Electrical and magnetic fields	no.	3	3	8	8	4	3	-	-
- Lighting	no.	-	-	-	-	-	-	-	-
- Vegetation management	no.	9	8	4	3	3	3	1	13
- Other	no.	2	2	2	2	4	4	-	-

Litigation

ENVIRONMENTAL LITIGATION

	UNIT	2019	2018	2017	CHANGE 19-18	% CHANGE 19-18
Pending	no.	88	85	96	3	3.5
In progress	no.	10	7	8	3	42.9
Settled	no.	7	18	8	-11	-61.1

SUPPLIER LITIGATION

	UNIT	2019	2018	2017	CHANGE 19-18	% CHANGE 19-18
Pending	no.	23	29	23	-6	-20.7
In progress	no.	2	6	4	-4	-66.7
Settled	no.	8	0	3	8	-

CUSTOMER LITIGATION

	UNIT	2019	2018	2017	CHANGE 19-18	% CHANGE 19-18
Pending	no.	11	15	15	-4	-26.7
In progress	no.	3	0	1	3	-
Settled	no.	7	0	3	7	-

LITIGATION WITH EMPLOYEES

	UNIT	2019	2018	2017	CHANGE 19-18	% CHANGE 19-18
Pending	no.	8	11	10	-3	-27.3
In progress	no.	4	3	5	1	33.3
Settled	no.	7	2	7	5	250.0

Electricity service and innovation

Grid

ELECTRICITY SUBSTATIONS

< EU4

	UNIT	2019	2018	2017	CHANGE 19-18	% CHANGE 19-18
380kV						
Substations	no.	165	164	164	1	0.6
Power transformed	MVA	117,504	115,258	114,008	2,246	1.9
220kV						
Substations	no.	149	150	150	-1	-0.7
Power transformed	MVA	31,996	31,417	31,317	579	1.8
Lower voltages (≤ 150kV)						
Substations	no.	574	567	557	7	1.2
Power transformed	MVA	3,884	3,914	3,890	-30	-0.8
TOTAL						
Substations	no.	888	881	871	7	0.8
Power transformed	MVA	153,384	150,589	149,215	2,795	1.9

POWER LINES

	UNIT	2019	2018	2017	CHANGE 19-18	% CHANGE 19-18
380kV						
Length of circuits	km	12,854	12,496	12,487	358	2.9
Length of lines	km	11,673	11,315	11,305	358	3.2
220kV						
Length of circuits	km	11,845	11,915	11,915	-70	-0.6
Length of lines	km	9,473	9,549	9,549	-76	-0.8
Lower voltages (≤ 150kV)						
Length of circuits	km	49,969	50,031	50,123	-62	-0.1
Length of lines	km	46,761	46,806	46,852	-45	-0.1
TOTAL						
Length of circuits	**km**	**74,669**	**74,442**	**74,525**	**226**	**0.3**
underground cables	km	2,091	1,945	1,880	146	7.5
submarine cables	km	1,762	1,454	1,463	308	21.2
200, 400 and 500kV direct current	km	2,435	2,077	2,077	358	17.2
Length of lines	**km**	**67,907**	**67,671**	**67,706**	**237**	**0.4**
underground cables	km	2,091	1,945	1,880	146	7.5
submarine cables	km	1,762	1,454	1,463	308	21.2
200, 400 and 500kV direct current	km	2,115	1,757	1,757	358	20.4

Quality of service

GRID EFFICIENCY

	UNIT	2019	2018*	2017	CHANGE 19-18	% CHANGE 19-18
Power supplied	GWh/yr	319,597	321,431	320,458	-2,313	-0.7

** The figure for 2018 has been recalculated with the final data for that year and is, therefore, different from the figure shown in the 2018 Sustainability Report. The figure for power supplied in 2019 is provisional.*

EU28 >

EU29 >

TECHNICAL QUALITY

	UNIT	2019	2018	2017	CHANGE 19-18	% CHANGE 19-18
ASA (Average Service Availability)*	%	99.99980	99.99989	99.99971	-0.000087	-0.0001
SAIFI + MAIFI (System Average Interruption Frequency Index) Terna**	no.	0,33	0,27	0,26	0.06	21.51
AIT (Average Interruption Time) Terna***	min.	0,94	1,03	1,36	-0.9	-87.7
RENS (Regulated Energy Not Supplied) Terna****	MWh	625	344	918	281	81.69

* *ASA measures the availability of the NTG. It is calculated as the ratio of the sum of energy not supplied to users connected to the NTG (ENS) and the energy fed into the grid. At the date of preparation of this document, the figures for 2019 are not yet final and have not been approved by the regulator (ARERA).*

** *The number of short and long outages. It is calculated as the ratio of the number of users connected directly to the NTG involved in the outages and the number of users of the NTG. At the date of preparation of this Report, the figures for 2019 are not yet available.*

*** *The average duration of electricity system (NTG) outages in a year. It is calculated as the ratio of the energy not supplied in a certain period (ENS) and the average power absorbed by the electricity system in the period in question. The figures for 2019 are not yet available at the time of publication of this Report.*

**** *The indicator also includes energy not supplied to directly connected users due to events on other grids not forming part of the NTG and a share of the energy not supplied due to events of force majeure or major incidents (a "major incident" is any outage where the energy not supplied exceeds 250 MWh). The share included in the RENS indicator is a percentage that declines as the amount of energy not supplied in the individual major increases. The lower the indicator, the better the service performance. The final figure for RENS for 2019, to be provided by the regulator (ARERA), is not yet available at the time of publication.*

People

Size and composition of the workforce

WORKFORCE TRENDS

< 401-1

	UNIT	2019	2018	2017	CHANGE 19-18	% CHANGE 19-18
Total employees	**no.**	**3,872**	**3,843**	**3,508**	**29**	**0.8**
Employees recruited during the year	no.	287	420	243	-133	-31.7
Employees leaving during the year	no.	258	85	203	173	203.5
- men	no.	233	76	187	157	206.6
- women	no.	25	9	16	16	177.8
- below the age of 30	no.	21	16	6	5	31.3
- between the ages of 30 and 50	no.	24	16	14	8	50.0
- over the age of 50	no.	213	53	183	160	301.9
Turnover rate*						
TOTAL	**%**	**6.7**	**2.4**	**5.9**	**4.3**	**177.1**
- men	%	6.1	2.2	5.4	3.9	179.9
- women	%	0.7	0.3	0.5	0.4	153.6
- below the age of 30	%	0.6	0.5	0.2	0.1	19.8
- between the ages of 30 and 50	%	0.6	0.5	0.4	0.2	36.9
- over the age of 50	%	5.5	1.5	5.3	4.0	266.9

* *The turnover rate shows the ratio of employees leaving the Company to the number of employees at 31 December of the previous year.*

COMPOSITION OF THE WORKFORCE

< 405-1

	UNIT	2019	2018	2017	CHANGE 19-18	% CHANGE 19-18
Total employees	**no.**	**3,872**	**3,843**	**3,508**	**29**	**0.8**
By type of contract						
- permanent	no.	3,869	3,842	3,508	27	0.7
- fixed-term	no.	3	1	0	2	200.0
By type of employment						
- full-time	no.	3,854	3,822	3,478	32	0.8
- part-time	no.	18	21	30	-3	-14.3
By gender						
- men	no.	3,334	3,326	3,076	8	0.2
- women	no.	538	517	432	21	4.1
By age						
- below the age of 30	no.	987	885	706	102	11.5
- between the ages of 30 and 50	no.	1,733	1,681	1,553	52	3.1
- over the age of 50	no.	1,152	1,277	1,249	-125	-9.8
Average age of employees and years of service						
Average age	yrs	40.8	41.8	42.6	-	-
Average years of service*	yrs	14.1	15.3	16.4	-	-

* *In the case of employees joining Terna as a result of the acquisition of a business unit, the average for years of service takes into account previous employment.*

COMPOSITION OF THE WORKFORCE BY CATEGORY

	UNIT	2019	2018	2017	CHANGE 19-18	% CHANGE 19-18
Total	**no.**	**3,872**	**3,843**	**3,508**	**29**	**0.8**
Senior managers	no.	61	57	61	4	7.0
Middle managers	no.	597	614	550	-17	-2.8
Office staff	no.	2,200	2,124	1,873	76	3.6
Blue-collar workers	no.	1,014	1,048	1,024	-34	-3.2

COMPOSITION OF THE WORKFORCE BY TYPE OF QUALIFICATION

	UNIT	2019	2018	2017	CHANGE 19-18	% CHANGE 19-18
University degree	%	35.4	32.5	28.6	3.0	9.1
High-school diploma	%	50.5	51.2	53.1	-0.7	-1.3
Vocational qualification	%	9.9	10.9	11.9	-1,0	-9.2
Elementary / Middle school	%	4.2	5.5	6.5	-1.3	-23.5

Personnel development

404-1 >
205-2 >
412-2 >

TRAINING

	UNIT	2019	2018	2017	CHANGE 19-18	% CHANGE 19-18
Average hours of training						
- per employee*	hrs	47	55	50	-8	-14.5
By category**						
- senior managers	hrs	40	29	17	11	37.9
- middle managers	hrs	28	32	36	-4	-12.5
- office staff	hrs	43	59	43	-16	-27.1
- blue-collar workers	hrs	66	64	73	2	3.1
By gender***						
- men	hrs	47	53	50	-6	-11.3
- women	hrs	30	47	32	-17	-36.2
Proportion of employees involved****	%	98	100	100	-2	-2.0
Hours provided						
Total	**hrs**	**183,193**	**203,556**	**178,856**	**-20,363**	**-10.0**
- hours led by internal trainers	hrs	91,406	140,509	106,900	-49,103	-34.9
Participants in courses on 231 Model	no.	461	1,795	2,102	-1,334	-74.3

* *Ratio of total hours of training to the average number of employees.*

** *Ratio of total hours of training by category to the average number of employees by category.*

*** *Ratio of total hours of training by gender to the total number of employees during the year (including those working for the Company for less than a year) by gender.*

**** *Percentage of employees who have attended at least one training course during the year.*

COMPENSATION

	UNIT	2019	2018	2017	CHANGE 19-18	% CHANGE 19-18
Average cost per employee*	€	78,529	80,475	79,733	-1,946	-2.4
Personnel included in Long-Term Incentive (LTI) plan	no.	75	72	65	3	4.2
Variable pay as a percentage of fixed pay**	%	11	11	11	0	2.1
MBO	no.	319	315	212	4	1.3

* *The term "employee" refers to each employee of the Company including senior managers.*

** *The amounts regard the incentives paid to all employees, including senior managers, and exclude fringe benefits.*

ORGANISATIONAL CLIMATE

	UNIT	2019	2018	2017	CHANGE 19-18	% CHANGE 19-18
Total spontaneous resignations	no.	43	34	17	9	27
Absences per employee*	hrs	51	53	47.5	-2	-4
Absentee rate**		6,378.6	6,937.4	6,239.9	-558.9	-8

* *This refers to non-contractual forms of absence (illness, injury, leave, strikes, unpaid leave) during the year.*

** *This refers to the number of days of absence due to illness, strikes and injury out of the number of days worked during the same period, multiplied by 200,000. To aid comparison with other sources, this indicator has also been calculated as a percentage of days worked. Under this method of calculation, the absentee rate is* ***3.1 in 2019, 3.5 in 2018 and 3.1 in 2017.*** *The causes of absence taken into account do not include maternity leave, marriage leave, study leave, trade union activities, other forms of paid leave and suspensions.*

AVERAGE YEARS OF SERVICE OF EMPLOYEES LEAVING THE COMPANY*

	UNIT	2019	2018	2017	CHANGE 19-18	% CHANGE 19-18
Total leavers	**yrs**	**31.6**	**23.3**	**32.5**	**8.3**	**35.4**
Men	yrs	33.3	24.8	34.1	8.5	34.2
Women	yrs	20.8	13.7	21.1	7.1	52.2
Below the age of 30	yrs	1.5	0.6	0.5	0.9	146.7
Between the ages of 30 and 50	yrs	6.8	6.9	5.8	-0.1	-1.6
Over the age of 50	yrs	38.0	35.7	36.2	2.3	6.5

* *In the case of employees joining Terna as a result of the acquisition of a business unit, the average for years of service takes into account previous employment.*

Employee engagement

UNIONISATION OF EMPLOYEES

	UNIT	2019	2018	2017	CHANGE 19-18	% CHANGE 19-18
Unionisation rate	%	45.0	46.1	49.9	-1.2	-2.6

UNION AGREEMENTS

	UNIT	2019	2018	2017	CHANGE 19-18	% CHANGE 19-18
Union agreements signed during the year	no.	18	9	14	9	100

FLEXIBLE EMPLOYMENT CONTRACTS AND TERMS

	UNIT	2019	2018	2017	CHANGE 19-18	% CHANGE 19-18
Interns and apprentices working at Terna	no.	18	29	33	-11	-38
Incidence of part-time contracts	%	0.5	0.5	0,9	-0.1	-15
Incidence of overtime	%	10.0	9.6	8.8	0.4	4

EU17 >

EMPLOYEES OF CONTRACTORS AND SUBSCONTRACTORS*

	UNIT	2019	2018	2017	CHANGE 19-18	% CHANGE 19-18
Days worked	no.	594,949	559,247	561,348	35,702	6.4
Full-time equivalents (FTEs)	no.	2,704	2,542	2,552	162.0	6.4

** The figures take into account the duration of contracts and the variable nature of the related workforce and relate to the different types of contract awarded by Terna, ranging from major works to those for the cutting back of vegetation located under power lines. The number of days worked and FTEs are estimated on the basis of the average daily attendances at the largest sites and the value of the works contracted out at smaller sites. Further information about the types of contract used by contractors is not available.*

Health and safety

OCCUPATION INJURIES SUFFERED BY EMPLOYEES - GRI-ILO DEFINITIONS*

< 403-2

	UNIT	2019	2018	2017	CHANGE 19-18	% CHANGE 19-18
Injury rate		0.98	1.28	0.81	-0.30	-23
Lost day rate**		39.31	34.40	27.62	4.91	14
Occupational disease rate***		0	0	0	-	-
Number of injuries	no.	34	40	24	-6	-15
- of which serious, where the initial prognosis is more than 40 days	no.	0	0	1	-	-
- of which fatal	no.	0	0	0	-	-

* ***Injury rate**. The number of injuries registered and reported to the competent social security office, divided by the number of hours worked during the year, multiplied by 200,000 (corresponding to 50 working weeks x 40 hours x 100 employees). To aid comparison with other sources, the injury rate is also calculated in accordance the UNI 7249:2007 Standard. This indicator has been calculated using a multiplication factor of 1,000,000 instead of 200,000 (thereby resulting in an injury rate 5 times the ILO injury rate). Based on this method of calculation, the injury rate **is 4.9 in 2019, 6.4 in 2018 and 4.0 in 2017.***

** ***Lost day rate**. The ratio of days lost due to injury to the number of hours worked during the year, multiplied by 200,000. The days lost are calendar days and are counted from the day on which the injury occurs. To aid comparison with other sources, the injury rate is also calculated in accordance the UNI 7249:2007 Standard. This indicator has been calculated using a multiplication factor of 1,000. Based on this method of calculation, the lost day rate **is 0.20 in 2019, 0.17 in 2018 and 0.14 in 2017.***

*** **Occupational diseases rate**. *The total number of cases of occupational disease divided by the number of hours worked during the year, multiplied by 200,000.*

Calculation of the lost day rate took into account days of absence due to injuries occurring in 2017 and any cases of absence due to injuries occurring in previous years, accounting for days of absence on an accruals basis.

As in previous years, there were no cases of occupational disease among Terna's employees in 2019. Terna's operations do not entail the types of work, as defined by law, associated with the potential occurrence of occupational diseases. Terna's occupational disease rate therefore remains at zero.

OCCUPATION INJURIES SUFFERED BY EMPLOYEES - BY GENDER

	UNIT	2019	2018	2017	CHANGE 19-18	% CHANGE 19-18
Number of injuries	no.	34	40	24	-6.00	-15.0
- of whom men	no.	33	39	23	-6.00	-15.4
- of whom women	no.	1	1	1	0.00	-
Injury rate - male employees		1.06	1.42	0.87	-0.35	-24.8
Injury rate - female employees		0.23	0.28	0.32	-0.04	-15.9
Lost day rate - male employees		43.63	38.87	26.05	4.76	12.3
Lost day rate - female employees		2.80	0.28	40.99	2.52	909.0

AUDITS AND INSPECTIONS

	UNIT	2019	2018	2017	CHANGE 19-18	% CHANGE 19-18
Periodic health inspections	no.	3,377	2,959	2,968	418	14
Medical examinations by appointed doctor	no.	271	233	255	38	16
Inspections and audits*	no.	113	72	66	41	57

** Audits conducted by personnel responsible for Prevention and Protection and by managers responsible for Transmission Operations.*

OCCUPATION INJURIES SUFFERED BY EMPLOYEES OF CONTRACTORS AND SUBCONTRACTORS*

	UNIT	2019	2018	2017	CHANGE 19-18	% CHANGE 19-18
Occupational injuries suffered by contractors' employees	no.	44	21	9	23	110
- of which serious	no.	2	2	1	-	-
- of which fatal	no.	1	1	0	-	-
Injury rate**		1.95	0.99	0.42	0.96	97

* *It should be noted that the increase in the number of occupational injuries suffered by contractors in 2019 is connected with a new monitoring model and the application of the contractual clause set out on page 191.*

** *The number of injuries resulting in the loss of at least one day divided by the number of hours worked during the year, multiplied by 200,000 (corresponding to 50 working weeks x 40 hours x 100 employees). To aid comparison with other sources, this indicator has also been calculated using a multiplication factor of 1,000,000 instead of 200,000 (thereby resulting in an injury rate 5 times the ILO injury rate). Based on this method of calculation, the injury rate* ***is 9.7 in 2019, 4.9 in 2018 and 2.1 in 2017.***

Equal opportunities

< 405-1

< 405-2

EQUAL OPPORTUNITIES FOR MEN AND WOMEN

	UNIT	2019	2018	2017	CHANGE 19-18	% CHANGE 19-18
Women out of total employees						
- women out of total	%	13.9	13.4	12.3	0.5	3.3
- women out of total, net of operating personnel	%	18.8	18.5	17.4	0.3	1.8
- women in senior management roles out of total senior managers	%	11.5	14.0	16.4	-2.6	-18.2
- women in senior and middle management roles out of total senior and middle managers	%	19.8	19.7	17.5	0.1	0.5
Growth in employment						
- annual change: women	%	4.3	19.7	6.2	-15.4	-78.4
- annual change: men	%	0.2	8.1	0.5	-7.9	-97.4
Leavers*						
- women leaving the Company	%	4.8	2.1	3.9	2.8	132.1
- men leaving the Company	%	7.0	2.5	6.1	4.5	183.5
Hires*						
- women joining the Company	%	9.1	21.8	10.1	-12.7	-58.2
- men joining the Company	%	7.2	10.6	6.6	-3.4	-31.9
Management positions						
- senior female managers out of total women	%	1.3	1.6	2.3	-0.3	-15.9
- senior male managers out of total men (excluding blue-collar workers)	%	2.3	2.2	2.5	0.2	8.2
Promotions**						
- promotions to middle management as in percentage of previous category - women	%	0.0	5.9	0.0	-5.9	-100.0
- promotions to middle management as in percentage of previous category - men	%	0.2	12.5	1.2	-12.2	-98.2
Pay gap between women and men***						
- senior managers	%	83.0	78.9	79.4	4.1	5.2
- middle managers	%	94.6	93.9	96.6	0.8	0.8
- office staff	%	99.4	97.7	97.3	1.7	1.7
Remuneration gap between women and men******						
- senior managers	%	81.4	74.3	72.1	7.1	9.5
- middle managers	%	95.1	95.0	99.0	0.2	0.2
- office staff	%	96.4	93.6	94.0	2.8	3.0

* *The percentage of leavers (hires) for women and men shows the ratio of employees by gender leaving (hired by) the Company during the period to the total number of employees by gender at 31 December of the previous year.*

** *The figure is based on the ratio of promotions to middle manager during the year to the number of personnel categorised as office staff in the previous year, calculated by category (men/women). Promotions of blue-collar workers to an administrative position or of middle managers to senior management are not taken into account as the numbers are immaterial on an annual basis.*

*** *The figure is based on the annual basic pay of women in the different categories as a percentage of the annual basic pay of men in the same categories. The figure has not been calculated for blue-collar workers as there are no women in this category.*

**** *The figure is based on the total annual pay of women in the different categories as a percentage of the total annual pay of men in the same categories. In addition to basic pay, total pay also includes productivity bonuses, various forms of incentive and the value of benefits received during the year.*

Environment

Waste

306-2 >

WASTE MANAGEMENT*

	UNIT	2019	2018	2017	CHANGE 19-18	% CHANGE 19-18
WASTE PRODUCED	**tonnes**	**5,912.8**	**6,774.2**	**4,801.5**	**-861.4**	**-12.7**
WASTE RECOVERED	**%**	**94**	**86**	**87**	**8**	**9**
Non-hazardous special waste						
Machinery, equipment, pylons, conductors and cables						
- quantity produced	tonnes	1,832.2	2,073.0	1,818.6	-240.8	-11.6
- quantity sent for recovery	tonnes	1,801.4	2,136.0	1,764.9	-334.6	-15.7
Packaging						
- quantity produced	tonnes	318.8	365.2	356.4	-46.3	-12.7
- quantity sent for recovery	tonnes	315.2	365.4	354.3	-50.2	-13.7
Other						
- quantity produced	tonnes	479.3	847.9	375.8	-368.6	-43.5
- quantity sent for recovery	tonnes	259.7	357.6	236.9	-97.9	-27.4
TOTAL NON-HAZARDOUS SPECIAL WASTE						
- quantity produced	**tonnes**	**2,630.3**	**3,290.0**	**2,550.8**	**-659.7**	**-20.1**
- quantity sent for recovery	**tonnes**	**2,376.3**	**2,863.1**	**2,356.0**	**-486.7**	**-17.0**
Hazardous special waste						
Machinery, equipment, pylons, conductors and cables						
- quantity produced	tonnes	2,381.5	2,014.9	1,608.6	366.5	18.2
- quantity sent for recovery	tonnes	2,335.2	2,024.1	1,351.2	311.1	15.4
Oils						
- quantity produced	tonnes	849.7	1,347.0	534.4	-497.2	-36.9
- quantity sent for recovery	tonnes	801.7	803.0	396.3	-1.3	-0.2
Lead batteries						
- quantity produced	tonnes	27.1	37.2	36.8	-10.1	-27.2
- quantity sent for recovery	tonnes	27. 0	36.5	36.8	-9.5	-26.0
Waste consisting of materials containing asbestos						
- quantity produced	tonnes	0. 0	0.0	0.0	-	-
Other						
- quantity produced	tonnes	24.3	85.1	70.9	-60.8	-71.5
- quantity sent for recovery	tonnes	17.9	72.5	47.8	-54.7	-75.4
TOTAL HAZARDOUS SPECIAL WASTE						
- quantity produced	**tonnes**	**3,285.8**	**3,484.2**	**2,250.6**	**-198.4**	**-5.7**
- quantity sent for recovery	**tonnes**	**3,181.7**	**2,936.1**	**1,832.1**	**245.7**	**8.4**

** Only special waste produced during production processes is included, not waste produced by services (urban waste). Excavated soil and rocks, effluents and waste from septic tanks, produced by substations not connected to the sewer network, are not included; the quantity of these forms of waste was **578 tonnes in 2019, 388 tonnes in 2018, and 617 tonnes in 2017.***

Biodiversity

BIRD DETERRENTS ON THE NTG

	UNIT	2019	2018	2017	CHANGE 19-18	% CHANGE 19-18
Lines involved	no.	72	70	66	2	2.9
Total deterrents installed	**no.**	**15,552**	**15,503**	**14,728**	**49**	**0.3**

POWER LINES IN PROTECTED AREAS*

< 304-1

	UNIT	2019	2018**	2017	CHANGE 19-18	% CHANGE 19-18
Lines impacting on protected areas	km	6,746	6,730	6,024	16	0.2
Lines with an impact as a percentage of total lines operated by Terna	%	10.5	10.4	10.0	0	1.0

** To calculate the percentage of lines impacting on protected areas, the Company has used "ATLARETE" data, which may contain differences compared with the data presented in the tables showing indicators of the number of lines.*

*** The figures for 2018 have been revised to take into account the km of impacting overhead lines, as well as the impacting underground submarine lines, in accordance with the 2019 calculation.*

Quantities and emissions

< 305-1

< 305-2

TOTAL DIRECT AND INDIRECT GREENHOUSE GAS EMISSIONS*

	UNIT	2019	2018	2017	CHANGE 19-18	% CHANGE 19-18
Leakages of SF_6	CO_2 in tonnes	60,162.2	54,846.1	67,371.4	5,316.1	9.7
Leakages of refrigerant gases (R22. R407C. R410A)	CO_2 in tonnes	178.2	427.9	489.4	-249.7	-58.4
Petrol for motor vehicles	CO_2 in tonnes	61.6	36.8	39.9	24.8	67.4
Diesel for motor vehicles	CO_2 in tonnes	6,767.0	6,295.0	6,269.0	472.0	7.5
Jet fuel for helicopters	CO_2 in tonnes	502.4	605.6	582.2	-103.2	-17.0
Natural gas for heating	CO_2 in tonnes	305.5	316.0	419.9	-10.5	-3.3
Fuel oil for heating and generators	CO_2 in tonnes	427.5	471.8	621.3	-44.3	-9.4
TOTAL DIRECT EMISSIONS	**CO_2 in tonnes**	**68,404.4**	**62,999.2**	**75,792.9**	**5,405.2**	**8.6**
Indirect CO_2 emissions in tonnes						
Electricity	CO_2 in tonnes	65,246.9	64,050.5	72,489.3	1,196.4	1.9

** The conversion of direct energy consumption and leakages of SF_6 (sulphur hexafluoride) and refrigerant gases into CO_2 equivalent emissions has been carried out using the parameters indicated in the IPCC Fifth Assessment Report (AR5) and the Greenhouse Gas Protocol (GHG) Initiative. The conversion of indirect electricity consumption is carried out taking into account the share of total Italian electricity production represented by thermoelectric production in 2019. Allocation for the purposes of the production mix was based on the December 2019 issue of the "Monthly Report on the Electricity System", available on the website at www.terna.it.*

QUANTITIES AND EMISSIONS OF SF_6

	UNIT	2019	2018	2017	CHANGE 19-18	% CHANGE 19-18
Quantity of SF_6	kg	636,132.0	619,167.2	610,939.6	16,964.8	2.7
- in operating equipment	kg	589,728.3	575,912.7	565,664.1	13,815.7	2.4
- in cylinders	kg	46,403.7	43,254.5	45,275.5	3,149.2	7.3
SF_6 leakage rate	%	0.40	0.38	0.47	0.03	6.8
SF_6 greenhouse gas emissions	kg	2,560.1	2,333.9	2,866.9	226.2	9.7

305-4 >

CARBON INTENSITY - TONNES OF EQUIVALENT CO_2 / REVENUE (€M)

	UNIT	2019	2018	2017*	CHANGE 19-18	% CHANGE 19-18
Ratio of total emissions (direct and indirect) to revenue	CO_2 in tonnes / (€m)	58.2	57.8	68.6	0.4	0.7

** The figure for 2017 differs from the one published in previous reports as the amount of revenue has been aligned with the figure for 2017 reported in the Group's reclassified income statement in 2018.*

305-6 >

REFRIGERANT GASES - QUANTITIES AND EMISSIONS

	UNIT	2019	2018	2017	CHANGE 19-18	% CHANGE 19-18
Quantity of R22	kg	38	39	59	-1	-4
Leakages of R22	kg	0	0	0	-	-
Quantity of R407C	kg	2,386.5	2,711.9*	2,770.3	-325	-12
Leakages of R407C	kg	5	173	174	-168	-97
Quantity of R410A	kg	10,033.6	9,526.6	8,612.8	507	5
Leakages of R410A	kg	88	76	107	12	15
Quantity of other refrigerant gases	kg	2,148.7	1,354.6	1,715.1	794	59

** The figure for 2018 differs from the one indicated in the previous report due to the emergence of evidence after publication.*

305-3 >

INDIRECT CO_2 EMISSIONS FOR AIR TRAVEL BY EMPLOYEES*

	UNIT	2019	2018	2017	CHANGE 19-18	% CHANGE 19-18
Total emissions	CO_2 in tonnes	4,297	1,560	2,699	2,736	175

** The conversion factors indicated in the Greenhouse Gas Protocol Initiative were used to quantify the CO_2 resulting from air travel by employees. The reduction in 2019 is primarily linked to activities beyond Europe, especially the contracts in Latin America.*

QUANTITIES AND EMISSIONS FOR MOTOR VEHICLES*

	UNIT	2019	2018	2017	CHANGE 19-18	% CHANGE 19-18
Total motor vehicles	no.	1,429	1,436	1,344	-7	-0.5
Nitrogen oxide (NO_x) emissions**	kg	7,315	7,594	7,631	-279	-3.7

** The table shows the vehicles in Terna's fleet that, in the period in question, were refuelled on at least one occasion, based on claims for fuel expenses. Consumption data for fleet vehicles is shown in the following tables.*

*** The figure is calculated on the basis of the data provided by motor manufacturers and included in registration certificates, as well as on estimates of the mileage covered by the vehicles. The figure shown in the table for 2019 refers to **88.0% of the Company's operating vehicles** (83% in 2018 and 85% in 2017).*

Consumption

DIRECT AND INDIRECT ENERGY CONSUMPTION BY PRIMARY SOURCE

< 302-1

	UNIT	2019	2018	2017	CHANGE 19-18	% CHANGE 19-18
Petrol for motor vehicles*	tonnes	19.9	11.9	12.9	8.0	67.2
Diesel for motor vehicles*	tonnes	2,110	1,963.0	1,954.9	147.2	7.5
Jet fuel for helicopters	tonnes	157.6	190.0	183.8	-32.4	-17.0
Natural gas for heating	000's of m^3	139.7	144.5	187.3	-4.8	-3.3
Fuel oil for generators and heating	tonnes	133.3	147.1	193.7	-13.8	-9.4
Electricity	GWh	193.8	190.2	195.5	3.6	1.9

** Only the consumption of operating vehicles is taken into account.*

DIRECT AND INDIRECT ENERGY CONSUMPTION BY PRIMARY SOURCE - GIGAJOULES

	UNIT	2019	2018	2017	CHANGE 19-18	% CHANGE 19-18
Petrol for motor vehicles*	GJ	889	532	577	357	67
Diesel for motor vehicles*	GJ	91,433	85,057	84,705	6,376	7
Jet fuel for helicopters	GJ	7,027	8,470	8,194	-1,443	-17
Natural gas for heating	GJ	5,449	5,636	7,490	-187	-3
Fuel oil for generators and heating	GJ	5,777	6,375	8,394	-598	-9
TOTAL DIRECT CONSUMPTION	**GJ**	**110,575**	**106,070**	**109,359**	**4,505**	**4**
Electricity to substations and offices**	GJ	697,600	684,672	703,738	12,928	2

* *Only the consumption of operating vehicles is taken into account.*

** *Allocation for the purposes of the production mix was based on the December 2019 issue of the "Monthly Report on the Electricity System", available on the website at www.terna.it.*

301-1 >

WATER CONSUMPTION

	UNIT	2019	2018	2017	CHANGE 19-18	% CHANGE 19-18
Water withdrawn by source	m^3	175,116	179,722	171,074	-4,606	-2.6

301-1 >

PAPER CONSUMPTION

	UNIT	2019	2018	2017	CHANGE 19-18	% CHANGE 19-18
Certified paper (100% recycled)	tonnes	58	61	50	-2.4	-3.9

CONCENTRATION OF PCBs

	UNIT	2019	2018	2017	CHANGE 19-18	% CHANGE 19-18
PCB > 500 ppm	tonnes	0	0	0	-	-
50 ppm < PCB < 500 ppm	tonnes	0.15	0.05	0.05	0.1	222

Environmental costs

ENVIRONMENTAL COSTS - CAPITAL INVESTIMENT AND OPERATING COSTS*

	UNIT	2019	2018	2017	CHANGE 19-18	% CHANGE 19-18
CAPITAL EXPENDITURE						
Environmental offsets	(€m)	8.7	7.1	7.9	1.6	23
Environmental impact studies	(€m)	3.8	3.5	4.2	0.3	9
Environmental activities - new plant	(€m)	5.5	3.9	4.8	1.6	41
Environmental activities - existing plant	(€m)	3.4	2.9	3.6	0.5	17
Demolitions	(€m)	1.7	2.2	0.8	-0.5	-23
Total capital expenditure	**(€m)**	**23.1**	**19.6**	**21.2**	**3.5**	**18**
Costs						
Cost of environmental activities	(€m)	24.2	23.8	24.1	0.4	2
Total operating costs	**(€m)**	**24.2**	**23.8**	**24.1**	**0.4**	**2**

* *Details of the accounting method used are provided on page 221.*

Annual Report
Integrated Report

Sustainability Report
Non-Financial Statement

REPORTING PROCESS 2019

The purpose of the reports is to provide Terna's internal and external stakeholders with an understanding and overview of the Company and its businesses and operations.

They are the end result of a series of deliberate choices in terms of transparency, communication, accuracy, completeness and the linking of disclosures, and mark the culmination of a sequence of complex processes involving a large number of people from across the Company.

Report on Corporate Governance and Ownership Structures

Report on the Remuneration Policy and Remuneration paid

Information Circular on Terna S.p.A.'s Performance Share Plan 2020-2023

Production of first mock-up

Annual Report Integrated Report:
6 February 2020

Sustainability Report
Non-Financial Statement:
6 February 2020

Output for Directors pre-Board meeting
3 March 2020

Printed versions for Board of Directors
10 March 2020

Publication on Borsa Italiana's website
24 April 2020

Printing
4 May 2020

Annual General Meeting
27 April 2020*

** The Annual General Meeting of 27 April 2020, which was later cancelled, has been rescheduled for 18 May 2020.*

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