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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**. >>

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Annexes

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 assurance⁹⁹. Vigeo Eiris also expressed an opinion on the issuer's overall approach to managing ESG issues, judging Terna to be at an "advanced" level¹⁰⁰. 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
<p>This category includes projects designed to boost renewable energy production:</p> <ul style="list-style-type: none"> • 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
<p>Projects designed to reduce the CO₂ emissions produced by the electricity system by reducing grid losses:</p> <ul style="list-style-type: none"> • grid infrastructure that enhances transmission efficiency (reducing the difference between power produced and energy consumed, all other conditions being equal). 	Energy efficiency
<p>Projects that aim to reduce soil use and the impact on terrestrial biodiversity:</p> <ul style="list-style-type: none"> • 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 provided 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 SATTIANO 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	15kV 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 RENEWABLE 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 CO₂ 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.

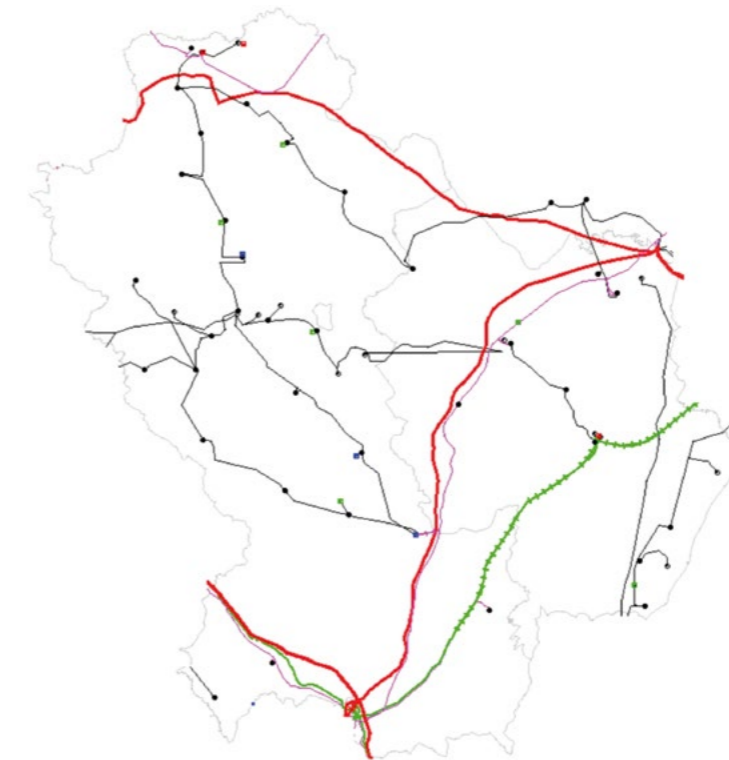
Category: Renewable Energy - New Genzano Electricity Substation

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"

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

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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*

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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 **

	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).

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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.

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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

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	UNIT	2019	2018	2017	CHANGE 19-18	% CHANGE 19-18
Total reports received*	no.	5	2	1	3	150
<i>Areas of operation for which reports received**</i>						
- 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.	-	-	-	-	-
<i>Outcome of reports</i>						
- 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	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

	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

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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 > 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

	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

	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 > 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
<i>Hours provided</i>						
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 SUBCONTRACTORS*

	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*

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	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

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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

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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
<i>Non-hazardous special waste</i>						
<i>Machinery, equipment, pylons, conductors and cables</i>						
- 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
<i>Packaging</i>						
- 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
<i>Other</i>						
- 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
<i>Hazardous special waste</i>						
<i>Machinery, equipment, pylons, conductors and cables</i>						
- 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
<i>Oils</i>						
- 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
<i>Lead batteries</i>						
- 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
<i>Waste consisting of materials containing asbestos</i>						
- quantity produced	tonnes	0.0	0.0	0.0	-	-
<i>Other</i>						
- 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*

	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

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	CO₂ in tonnes	68,404.4	62,999.2	75,792.9	5,405.2	8.6
<i>Indirect CO₂ emissions in tonnes</i>						
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 SF₆ (sulphur hexafluoride) and refrigerant gases into CO₂ 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 SF₆

	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

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CARBON INTENSITY - TONNES OF EQUIVALENT CO₂ / 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.

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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.

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INDIRECT CO₂ 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 CO₂ 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**

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	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.

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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

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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 INVESTMENT 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.