



2019

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01 — MESSAGE FROM THE CHAIRMAN OF THE EXECUTIVE BOARD



RTE is a public service company: 24 hours a day, 7 days a week, it transports electricity and maintains the balance between power generation and power consumption. Its infrastructure is vital, and its activities are regulated in the interests of customers and an efficient electricity market.

However, the company's operation depends on a whole environment, which naturally includes weather conditions but also French energy policy – the multi-year energy programme⁽¹⁾ at national level and renewable energy connection plans⁽²⁾ at regional level – and European regulations, which are constantly evolving.



Finally, the energy mix for France is changing completely, with closures of coal-fired plants, the unavailability of certain nuclear reactors, growth in onshore wind farms and photovoltaic power – two renewable energy output records were broken this year (wind power reached 13,288 MW at 4 pm on 14 March, and solar power reached 7,626 MW at 2 pm on 13 May) – and soon, the start of offshore wind farms. Electric vehicles and self-consumption are also set to become much more widespread in the next few years.

Given these developments, a paradigm shift is necessary at RTE.

Also, discussions concerning electricity tariffs (for the TURPE 6 network access tariff) have already begun, and costs are being tightly controlled to ensure minimum impact on the tariff.

Against this background with its many constraints, we must always be ready to respond and take bold action: the future will be shaped by forward thinking, and thus innovation.

2019 was first and foremost the year of a Europe-wide approach to electricity:

- Hervé Laffaye, RTE's Deputy Managing Director in charge of European and International Affairs, was elected President of ENTSO-E, and began his term of office in June;
- the club of the CEOs of the largest European TSOs, initiated by myself, is growing and meets regularly. Our joint declaration calls for greater coordination between member states' energy policies to ensure permanent resilience in the European electricity system;
- the European Commission gave a €530 million grant to finance the France-Ireland electricity interconnector project.

This project was supported by the French and Irish heads of state and both countries' regulators, and once again, the French energy regulator CRE⁽³⁾ stood by us from start to finish. The "Celtic Interconnector" marks a new stage in the construction of an ever more robust and mutually supportive European electricity network;

- the interruptible load procedure was activated twice this year. On 10 January and 7 October 2019, RTE called on all industrial consumers with interruptible load contracts to instantly reduce their electricity consumption by the equivalent of the consumption by the city and conurbation of Lyon in order to rebalance European frequency and avoid the risk of power cuts in France and Europe.

(1) *Programmation pluriannuelle de l'énergie.*

(2) *Schémas régionaux de raccordement au réseau des énergies renouvelables.*

(3) *Commission de régulation de l'énergie.*

2019 also saw a new milestone for offshore wind power: thanks to its experience of undersea interconnectors and its investments in offshore facilities, RTE is ready to connect offshore wind farms and now has exclusive competence for such operations in France. Work on connecting the Saint-Nazaire offshore wind farm has already begun.

Like many other projects, the Saint-Nazaire project has been the target of a large number of legal challenges, although all channels for contestation have now been exhausted. We constantly have to deal with contradictory court orders as the environmental question is often instrumentalised... and the appeals are nearly always a stalling technique!

The investments that will be required for new offshore wind power are set out in the new-generation ten-year network development plan⁽¹⁾. We now need to increase our competences, notably for incorporating renewable energies into the national grid, while planning for renewal of the network in order to provide the same level of performance. RTE thus has a detailed industrial roadmap that meets the objectives France has set itself.

We must be open about the major challenges still facing us on safety issues, although the number of “core business” accidents declined in 2019. Around 2,100 safety inspections were carried out this year, and work was stopped on 315 sites due to lack of compliance with safety requirements.

After a period of promotion and internalisation of our 11 “rules that save lives”, it is now time to put those rules into practice day to day, with the involvement and daily commitment of every manager and employee at RTE and in its contractor firms. We must make progress together to reduce this risk as much as possible.

Finally, the positive opinion issued in the autumn by the Central Works Committee on the company’s strategic priorities is a strong signal of adhesion to RTE’s corporate mission statement, “Impetus and Vision”. We now need to continue the dialogue with the company’s managers, employees and union bodies.

In 2019, more than 500 employees took part in the 30 industrial working groups set up to implement the corporate mission statement. An open collaborative platform was also made available to all employees from 1 October to encourage everyone to get involved in the rollout of Impetus and Vision. So far, some 2,200 employees have logged on.

2019 was an eventful and fruitful year for RTE. This is the last management report by the current Executive Committee, and I must applaud its remarkable collective accomplishments of the last five years, which have benefited from the complementary approaches this collaborative style of operation allows. I also wish to thank the Supervisory Board for the quality of our interactions.

François Brottes,
Chairman of RTE’s Executive Board

(1) Schéma décennal de développement du réseau (SDDR)

02 — PRESENTATION OF RTE

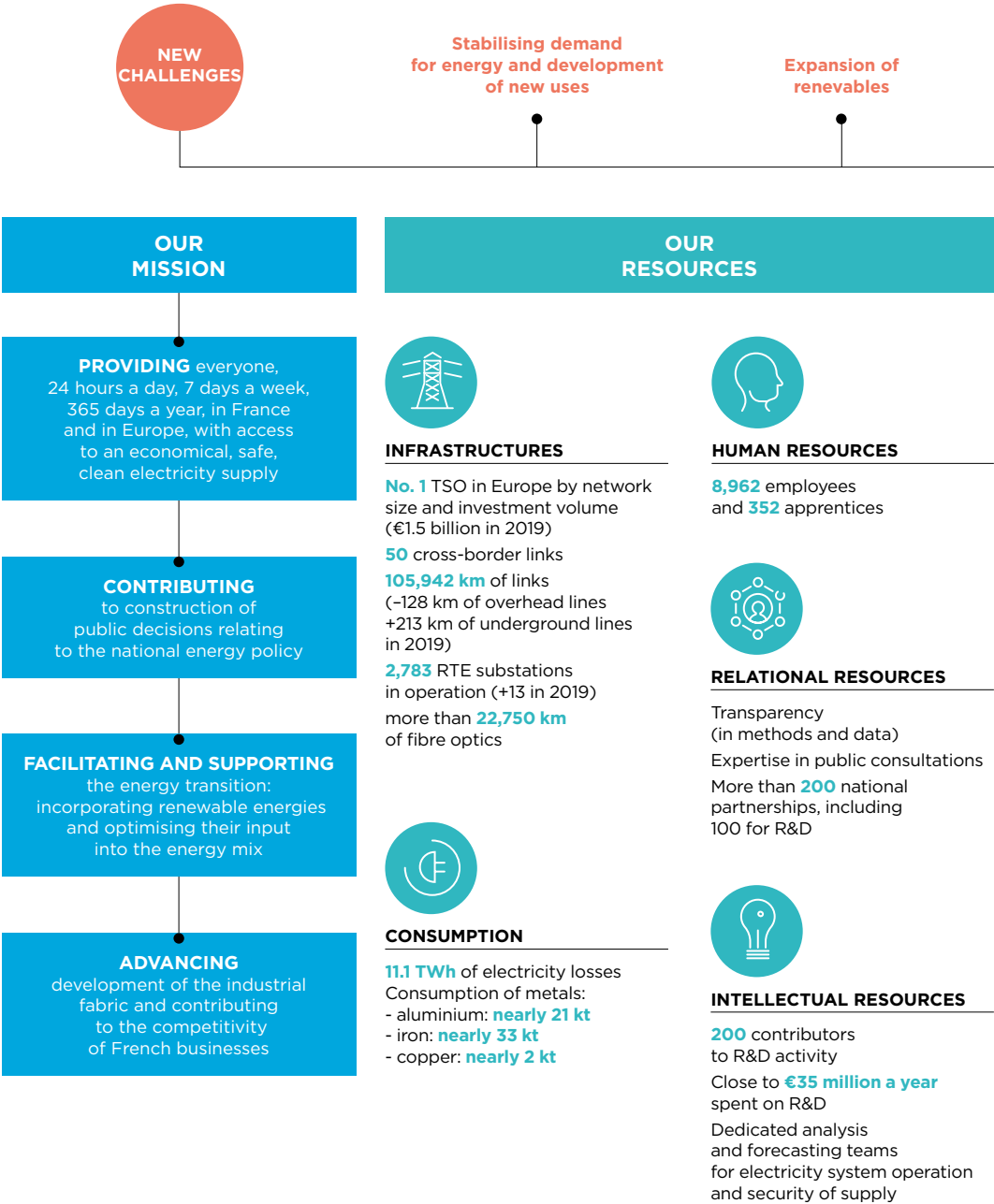


RTE, Réseau de transport d'électricité ("RTE" in the rest of this document) is the company that manages France's electricity transmission network.

RTE's essential missions are operating the public electricity transmission network and maintaining balance at all times in the electricity flows through the network.

2.1 BUSINESS MODEL

FIGURES AT 31 DECEMBER 2019



Decentralisation
of generation,
self-consumption
and storage

Digital
transition

Responding to societal
demands
as infrastructures
are upgraded

OUR EXPERTISE



Managing the infrastructure

RTE constructs, operates and maintains the electricity transmission network, which is constantly evolving to increase capacity, develop new cross-border links, connect renewable energies and reinforce the quality of supply.



Designing market mechanisms

RTE organises the electricity markets with mechanisms to ensure the least costly available sources of generation are used, all over Europe.



Monitoring the electricity system

RTE adjusts electricity output and consumption in real time, is in charge of security of supply and guarantees electricity solidarity between different areas of France and Europe.



Researching, innovating and coupling power with digital technologies

RTE integrates digital technologies to increase network flexibility.

VALUE CREATED

FOR RTE

€4,856 million of sales
€2,182 million of EBITDA
S&P rating: **A** (stable)

FOR THE ECONOMY

72,450 jobs supported⁽¹⁾
€6.8 billion of GDP in France⁽¹⁾

FOR OUR CUSTOMERS

99.9994% continuity in the electricity supply
87% customer satisfaction rate
Producers: **467.3 TWh** of injections
Distributors: **15.6 TWh** of injections
345.3 TWh of withdrawals
Market actor: **28.3 TWh** of imports,
84 TWh of exports
Industrial and railway customers:
4.5 TWh of injections,
62.1 TWh of withdrawals

FOR OUR EMPLOYEES

16th/500 in the Best Employer in France rankings (by *Capita*/magazine)
1:15 ratio between the lowest and highest salary

FOR REGIONS AND LOCAL AREAS

48,663 MW of renewable energies connected to the high-voltage and very high-voltage lines in France

FOR THE ENVIRONMENT

85.1% of waste recycled
1,161 ha of land made biodiversity-friendly

⁽¹⁾ Source: survey of RTE's socio-economic footprint in France in 2016, conducted in March 2017.

“RTE, A COMPANY THAT SERVES ECONOMIC DEVELOPMENT, LOCAL DEVELOPMENT AND THE GENERAL INTEREST.”

As the owner and operator of the French public electricity transmission network, RTE is a key actor in the French economy, which is growing increasingly sensitive to the cost and quality of energy. RTE has monopoly status regulated by the French energy regulator CRE, which decides on its revenues and investments. As well as delivering energy, the electricity transmission network pools the various generation and consumption sources. RTE constantly adjusts the quantities of electricity injected at all points of the territory covered, and the quantities of electricity with drawn. This mission is made more important by the fact that electricity cannot be stored on a large scale. RTE thus has an essential role to play in national energy policies, as well as a central role in coordination of networks at European level.

RTE's principal missions as a major player in the electricity market are:

- providing everyone, at all times, with access to an economical, safe, clean electricity supply;
- contributing to construction of public decisions relating to the national energy policy;
- facilitating and supporting the energy transition: incorporating renewable energies and optimising their input into the energy mix;
- advancing development of the industrial fabric and contributing to the competitiveness of the French economy.

Providing everyone, at all times, with access to an economical, safe, clean electricity supply

France's electricity transmission network covers voltages from 63 kV to 400 kV and is the largest in Europe, with more than 100,000 km of links and approximately 2,700 substations in operation.

Due to the scale of the network, the quality of the electricity it carries and the geographical position of France, RTE is a key component of Europe's electricity landscape.

Around fifty cross-border lines connect the French network to neighbouring countries' networks, and more are under construction or planned. RTE's network thus enables France to import or export electricity as appropriate to its own requirements, and the requirements of other European countries.

As a result RTE plays a major role in cooperation between network operators, structuring and developing market mechanisms, and implementation of the European legislative package on “clean energy for all Europeans”. The increase in such interconnections is an additional factor in the safety, flexibility and competitiveness of electricity in France.

RTE's business activity, providing competitive, quality, clean electricity supplies is undeniably a lever for the French economy.

- Thanks to its interconnections, the transmission network supports access to the least costly sources of energy available throughout Europe. The cost of electricity transmission remains moderate in France, at around 8% of final users' electricity bills.
- In addition to cost considerations, RTE maintains a very good quality supply of electricity, with 99.9994% continuity in 2019.

This quality is achieved through constant dedication by RTE's teams. Over 4,000 people are specifically assigned to network maintenance, working daily to keep it running smoothly. The maintenance teams are based across all the regions and *départements* of mainland France, and can thus respond very rapidly to any unforeseen event on the network.

Significant investments are made every year to maintain the network's structural role in the high quality of electricity.

Quality is also supported by the dispatching centres that monitor the network to limit the impact of incidents, and are constantly adjusting the balance between supply and demand for electricity while also attending to voltage stability and preserving frequency levels.

Finally, analysis and planning teams use the latest technological innovations to optimise the operation and security of the electricity system.

RTE also offers consumers access to the cleanest sources of energy, contributing to achievement of France's objectives set out in its national low-carbon strategy⁽¹⁾. RTE is working to support the expansion of renewable energies (notably onshore and offshore wind power, photovoltaic solar power and hydropower), closures of coal-fired power plants and changes in nuclear power facilities, as laid out in France's multi-year energy programme adopted by the national authorities.

(1) *Stratégie nationale bas carbone (SNBC).*

Contributing to construction of public decisions relating to the national energy policy

RTE conducts and publishes prospective analyses of changes in the electricity system as part of its legal missions. These analyses concur with the objectives of France's multi-year energy programme, and provide information for the authorities and all stakeholders about the energy transition, supply security, and required adjustments to the network.

- *Regional plans for reorganisation, sustainable development, and regional equality (SRADDET⁽¹⁾)*

RTE works with and advises regional authorities as they prepare their SRADDET plans for reorganisation, sustainable development, and regional equality. SRADDET plans guide regional public policies for the energy transition, biodiversity protection and enhancement, reduction of land consumption, economic development and digital coverage.

They are applied through "S3REnR" regional renewable energy connection plans under the responsibility of RTE, with the aim of programming achievement of the national and regional objectives for increasing the portion of renewable energies in the energy mix.

- *Generation adequacy report⁽²⁾*

RTE's annual review of the security of electricity supplies, called the "generation adequacy report", exists to identify risks of imbalance between mainland France's requirements and the available electricity. RTE publishes an updated edition each year.

- *Ten-year network development plan ("SDDR")*

RTE also presented a new ten-year network development plan (SDDR) in 2019. The SDDR has been completely redesigned as the network-focused companion report to the generation adequacy report to provide a basis for debate concerning the major orientations for network development.

Facilitating and supporting the energy transition: incorporating renewable energies and optimising their input into the energy mix

The growing proportion of renewable energies entails a new geographical distribution in electricity generation. These new generation zones tend to be located outside the existing network, and thus need new connections.

The French authorities put RTE in charge of drawing up "S3REnR" regional renewable energy connection plans. One S3REnR plan is established for each region of France after a broad consultation process, and they are essential for proposing the best technical, economic and environmental solutions to connect future renewable energy sources to the network. RTE is also adapting its systems and forecastings flexibility requirements due to the intermittent nature of electricity generation from renewable sources.

The level of renewable energy connected to RTE's network has risen by 25% in three years to 53 GW in 2019. RTE is also in charge of connecting offshore wind farms, from the offshore electricity substation to the onshore electricity network. These connections are receiving new financial support through a contractual framework negotiated with the French State in 2018. France's first offshore wind farm is expected to be commissioned in 2022.

Advancing development of the industrial fabric and contributing to the competitiveness of the French economy

To respond to new local and regional issues, RTE has structured its relations with local authorities around three focal points: local and regional development, support for the energy transition, and economic development.

RTE plays a major role in local development. With its extensive infrastructure and many establishments, the company is present in half of all French municipalities. Thanks to a network covering the whole country, RTE guarantees provision of the same services in all areas regardless of their demographic or industrial situation.

RTE delivers energy directly to nearly 500 industrial sites that account for 60% of French industrial electricity consumption. The quality of the electricity supply is fundamentally important to these sites and RTE ensures it is able to respond to the needs of a range of industrial sectors: chemicals, paper and cardboard, iron and steel, metallurgy, automaking,

⁽¹⁾ Schémas régionaux d'aménagement, de développement durable et d'égalité des territoires.

⁽²⁾ Bilan prévisionnel.

and agrifood. A secure electricity supply is also important for small- and medium-sized business end-users which are not directly connected to the electricity transmission network but are still dependent on its operation.

One key challenge for RTE is promoting new types of electricity use (electric mobility, industry 4.0, etc.) that can support regional economic strategies.

The availability of competitively-priced, safe and clean electricity strengthens the appeal of the French regions. The short waiting time for connection to the national network is a further factor of attraction, as illustrated by recently-established data centres in France, especially in the Île-de-France region around Paris. There are more than 180 commercial data centres in France, 75% of them in the Paris region, and they are contributing to a dynamic national digital economy, supporting creation of R&D centres and preserving banks' social centres. As well as the specific example of data centres, electricity supply quality is an advantage more generally for local regions and helps to conserve France's industrial fabric.

Finally, RTE actively supports the French economy, providing over 72,000⁽¹⁾ directly and indirectly supported jobs and contributing more than €500 million in local taxes (including over €250 million of pylon taxes).

More details of RTE's services to local regions are given in section 4.5.3 "Stronger regional and local ambitions".

In 2019, RTE participated in the national effort for economic competitiveness in France and its local regions through its business functions and development projects. Thanks to interconnections with neighbouring European countries, RTE maintained the balance between electricity supply and demand, including renewable energies and optimising their contribution by making use of the extensive network coverage from local to European level. By conscientiously fulfilling its mission on a daily basis, RTE is able to provide highly reliable access to electricity, with an efficient infrastructure serving the needs of industry and local communities.

2.2 HISTORY OF RTE

Historically, electricity transmission was carried out by Électricité de France (EDF), which had a monopoly on generation, transmission, distribution, export and import of electricity by virtue of the law of 1946 on nationalisation of electricity and gas companies⁽²⁾.

The law of 10 February 2000⁽³⁾ transposing the European directive of 19 December 1996⁽⁴⁾ lays down the principal rules for the internal energy market which had recently been opened up to competition at the time. To avoid any risk of discrimination between network users, the law provided for formation of a new network operator entity, independent of EDF, and in June 2000, an independent department named "Réseau de transport d'électricité" was set up at EDF, with separate management and accounts.

A further step was taken when a separate legal entity was established, in application of the law of 9 August 2004⁽⁵⁾ transposing the European directive of 2003. RTE, a *société anonyme* (French-domiciled publicly-traded limited company) governed by an Executive Board and a Supervisory Board, was officially formed on 1 September 2005 by means of a partial business transfer from EDF, and became a wholly-owned subsidiary of EDF⁽⁶⁾.

Since December 2016, the entire share capital of RTE has been held by Coentreprise de transport d'électricité (CTE), itself held by the following shareholders since 31 March 2017:

- EDF (50.1%);
- Caisse des dépôts et consignations (CDC) (29.9%);
- CNP Assurances (20%).

RTE has set up joint ventures with its foreign counterparts to construct interconnections with neighbouring countries:

- Celtic Interconnector, with the Irish transmission network operator EirGrid;
- IFA2, with the British transmission network operator National Grid;
- Inelfe with the Spanish transmission network operator REE.

(1) Source: March 2017 survey of RTE's socio-economic footprint in France in 2016.

(2) French law no. 46-628 of 8 April 1946 on nationalisation of electricity and gas.

(3) French law no. 2000-108 of 10 February 2000 on the modernisation and development of the public electricity service.

(4) Directive 96/92/EC of 19 December 1996 concerning common rules for the internal market in electricity.

(5) Law no. 2004-803 of 9 August 2004 on the public electricity and gas service and electricity and gas companies.

(6) RTE was named "RTE EDF Transport" until 2012.

RTE also has five subsidiaries that operate outside its public service missions:

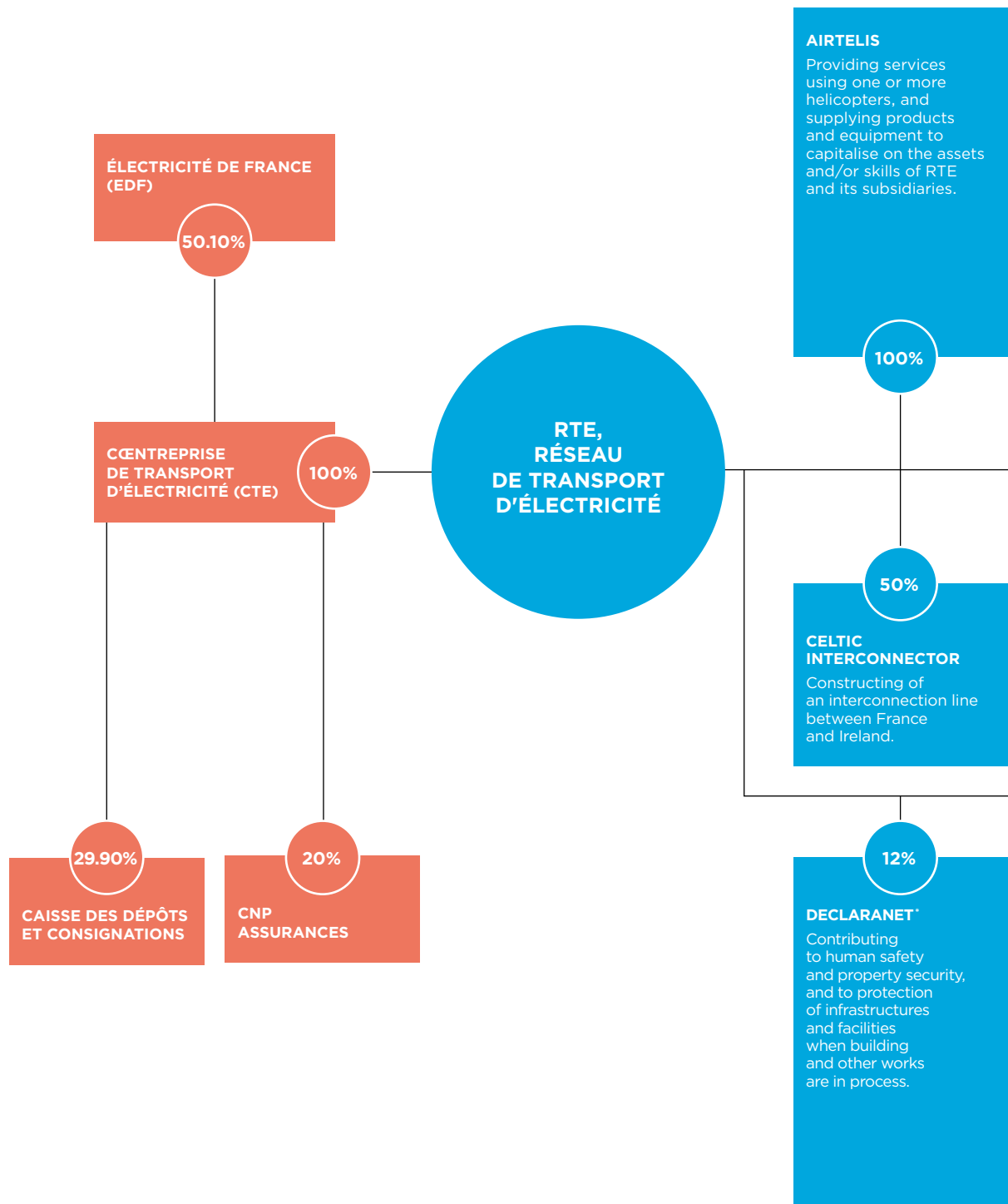
- Airtelis, which provides overhead work and training and consulting services;
- Arteria, a telecommunications company involved in local digital development that capitalises on high points on the electricity network;
- Cirtéus, which provides services, studies and advice in the competitive sector of the market for maintenance, operation and development of high-voltage and very high-voltage electricity installations in France;
- RTE Immo, which undertakes real estate operations, acquisitions, asset management, sales, execution of work and consulting services related to assets owned directly or by RTE⁽³⁾;
- RTE International, which provides engineering and consulting services in all areas of an electricity transmission system operator's business.

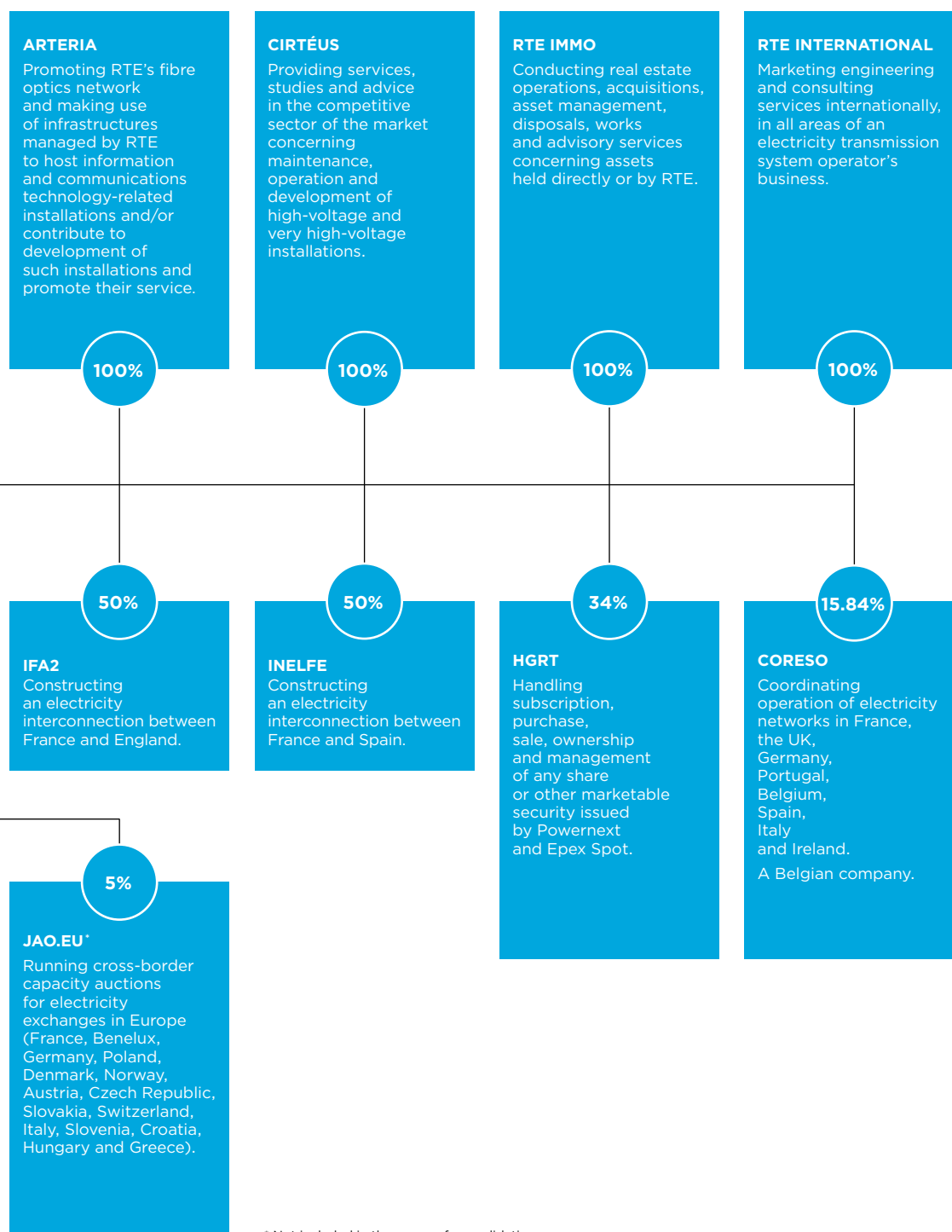
Framework agreements concerning the pricing methods for services sold by RTE to its subsidiaries are submitted to the regulator for approval.

Finally, RTE holds investments in companies that enable it to fulfil the missions assigned to it by the law:

- Coreso, which coordinates operation of the electricity networks covering France, the United Kingdom, Ireland, Germany, Portugal, Belgium, Spain and Italy;
- Declaranet (Protys), which contributes to human safety and property security, and to the protection of infrastructures and facilities when work is being done in the public domain;
- HGRT, a holding company for the European electricity market Epex Spot, owned together with the EEX group;
- JAO.EU, which implements the cross-border capacity auctions for electricity trading in Europe.

(3) RTE Immo carried out no activities in 2019.





* Not included in the scope of consolidation.

2.3 GOVERNANCE OUTLINE

Fully-independent corporate governance

RTE is a *société anonyme*, a French-domiciled publicly-traded limited company, governed by an Executive Board and a Supervisory Board. It has certain specific features due to its status as operator of the French public electricity transmission network (a TSO). RTE's bylaws and governance methods safeguard its autonomy, independence of management and neutrality.

Governance bodies

Supervisory Board

Role: the Supervisory Board examines and issues an opinion on matters relating to the company's major strategic, economic, financial and technological orientations, subject to the Executive Board's exclusive competence for decisions concerning network management and work necessary for implementation of the ten-year network development plan. It also monitors RTE's management by the Executive Board, in compliance with the provisions of the French Energy Code (*Code de l'énergie*).

Economic Supervision and Audit Committee

Role: in preparation for Supervisory Board meetings, this committee studies all financial aspects of the company, notably the budget and the economic and financial prospects, the annual financial statements and half-year results, the risk monitoring and management policy, particularly risk mapping, and the audit programme, audit outcomes, action plan follow-up and internal control.

Remuneration Committee

Role: issues an opinion on the setting of all kinds of remuneration that may be paid to key corporate officers for their duties.

Members of the Supervisory Board

The Supervisory Board consists of:

- six members representing the shareholder, CTE;
- two members representing the French State, appointed by virtue of articles 4 and 5 of ordinance no. 2014-948 of 20 August 2014 on governance and capital transactions by companies with public investment;
- four members representing employees.

Some Supervisory Board members must meet specific requirements which the CRE verifies prior to their appointment to reinforce the network management's independence of generation and supply entities⁽¹⁾.

Compliance officer

In accordance with European regulations and the French Energy Code (*Code de l'énergie*), RTE has a designated compliance officer. Subject to competences attributed specifically to the CRE, the compliance officer is in charge of ensuring that RTE's practices comply with its obligations regarding independence of other companies included in the Vertically Integrated Enterprise.

Olivier Herz has been RTE's compliance officer since 1 October 2016. He is entitled to attend General Shareholders' Meetings, Supervisory Board meetings, specialist committee meetings and all meetings relevant to his duties.

He has all powers to investigate documents on site for execution of his mission. Apart from the information he must report to the CRE, he has a professional duty of discretion regarding commercially-sensitive information collected in the course of his duties.

(1) A list of all the roles and functions occupied by each Board member, regulated agreements and capital increases is provided in the corporate governance report.

After seeking the opinion of the French energy regulator CRE, the Supervisory Board appoints the members of the

Executive Board

Role: the Executive Board has the broadest powers to act in the company's name in all circumstances, subject to the rights of the shareholders at a General Meeting and the Supervisory Board. It is the only body with competence to implement operations directly contributing to operation, maintenance and development of the public electricity transmission network within the scope of the missions assigned to the company.

Executive Committee

Role: the Executive Committee examines all corporate matters that require oversight or a decision in the orientation, commitment, implementation and monitoring stage.

Members of the Executive Board



1 François Brottes,
Chairman of
the Executive Board

**2 Valérie
Champagne,**
RTE's Deputy
Managing Director
in charge of Finance
and Purchases

3 Olivier Grabette,
RTE's Deputy
Managing Director
in charge of
Planning, Expertise
and Solutions

4 Clotilde Levillain,
RTE's Deputy
Managing Director
in charge of
Development
and Engineering,
Operation and
Services

**5 Xavier
Piechaczyk,**
RTE's Deputy
Managing Director
in charge of
Networks,
Customers and
Regional Activities

2.4 CORPORATE MISSION STATEMENT: IMPETUS AND VISION

2.4.1 Ambitions

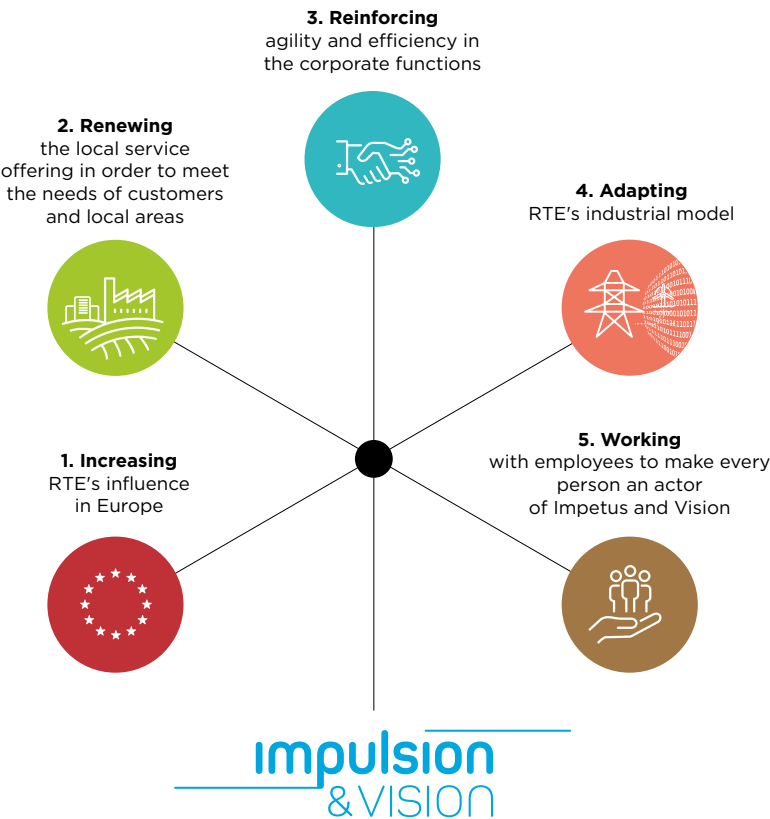
From the European Union to French regional and local authorities, the declared ambitions for the energy transition are wide-ranging and will entail profound changes in the electricity sector as a whole: the expansion of renewable energies, higher volumes of energy trade between European countries, new consumer behaviours, self-consumption, emergence of new uses, development of electricity storage, etc. These changes are also part of a technological and digital revolution bringing new forms of communication, dematerialisation, artificial intelligence, geolocation, etc.

In response to these transformations and new customer demands, RTE must adapt, make preparations and reinvent itself as a driving force in the coming transitions.

The following major principles underpin the 2025 target of the Impetus and Vision corporate mission statement:

- efficient, responsible performance for a modernised public service;
- bold action and innovation for a successful transformation of the industrial system;
- agility and openness to support initiatives.

The corporate mission statement provides the stimulus for constructing RTE's future. It sets a common course that is meaningful for all employees, consisting of five strategic priorities:



2.4.2 Missions and projects

To embody the project's implementation phase and begin to reflect on determination of the trajectory to achieve the its strategic priorities' objectives, RTE has defined a number of cross-functional missions and projects for better oversight of its ambitions and fulfilment of its commitments. They include the following:



The “Interconnections” mission

Positioning RTE as a major European actor for interconnection projects

→ Cf. section 4.1.2



The “Renewable Marine Energies” mission

Making RTE a key actor for connecting Renewable Marine Energies

→ Cf. section 4.2.1



The “Strategy and forward planning” mission

Building a base of principles concerning changes in the energy sector and RTE's role



The “Economic and regional/local development” mission

Strengthening RTE's local ties with regional and local economic environments and actors

→ Cf. section 4.5.3



The “24-hour control centres” project

Overseeing work on implementation of the future 24-hour control centres

→ Cf. section 4.3.1



The “Electricity system of 2025” project

Inventing the major principles of operation and development for the electricity system of the future



The “Corporate functions” project

Repositioning corporate functions as partners to the different areas of RTE's business



The “Asset management 2025” mission

Defining and applying a new technical/economic approach to asset lifecycle management

→ Cf. section 4.3.1



The “Europe and internal coordination” project

Coordinating RTE's actions in its European dimension

→ Cf. section 4.1

2.4.3 Principal actions of 2019

Most of the actions in 2019 are presented in section 4 "Our commitments to meet the major challenges of a fast-changing world".

Increasing RTE's influence in Europe

- Reinforcing RTE's presence in the Europe of electricity: cf. actions reported in section 4.1.1 "Reinforcing cooperation at European level".
- Launching the "Europe and internal coordination" project: cf. actions reported in section 4.1.1 "Reinforcing cooperation at European level".
- Continuing to adjust European network codes: cf. actions reported in section 4.1.3 "Rolling out market mechanisms".

Renewing the local service offering in order to meet the needs of customers and local areas

- Renewing the customer service offering: cf. actions reported in section 4.5.4 "Supporting and facilitating customer change".
- Defining a range of services for regions and more local areas: cf. actions reported in section 4.5.3 "Stronger regional and local ambitions".

Reinforcing agility and efficiency in the corporate functions

- Launching the digital transformation programme for the corporate functions.
- Introducing of new systems and procedures to facilitate employees' everyday work from 2019, including electronic signatures, dematerialisation of orders (putting an end to the circulation of 40,000 order validation files), dematerialisation of supplier invoices, installation of IT helplines to assist employees having computer problems, etc.

Adapting RTE's industrial model

- Cf. actions reported in section 4.3 "Maintaining and adapting the network for the electric landscape of the future".

Working with employees to make every person an actor of Impetus and Vision

- Cf. actions reported in section 4.6 "Looking after employees, rewarding and developing talents".

2.5 SIGNIFICANT EVENTS OF 2019

January 2019

First activation of the French interruptible load procedure to protect the stability of the European electricity system (followed by a second activation in October)

Electricity frequency provides a real-time indication of the stability of the European electricity system in terms of the balance between production and consumption. In normal circumstances the frequency is 50 Hz.

On Thursday 10 January at around 9 pm, the European transmission network experienced disturbance when the frequency dropped to 49.81 Hz.

For the first time, RTE was obliged to call on all "interruptible load" industrial consumers to instantly reduce their electricity consumption by more than 1,500 MW (equivalent to electricity consumption by the city of Lyon and its conurbation). A similar situation arose on 7 October, and consumption was reduced by 1,400 MW.

In both cases, these activations of the interruptible load procedure were the outcome of a change in frequency caused by modification of commercial trading schedules on the hour. Other unforeseeable factors also played a part: in January, a mismeasurement of physical energy exchanges between Germany and Austria; and in October, an unscheduled drop in generation levels following an incident at a power plant.

The interruptible load procedure was triggered automatically. It was the most appropriate response to the situation and contributed to a rapid return to 50-Hz frequency.

RTE received the Responsible Supplier Relations and Purchasing label⁽¹⁾

RTE has a duty to promote sustainable overall performance, and the company has followed a responsible purchasing principle for several years, beginning with the signature of the Responsible Supplier Relations Charter in 2010 (under the supervision of the interfirm mediation and national purchasing council). It also established a Responsible Purchasing Charter in 2016.

On 10 January 2019, the committee in charge of the Responsible Supplier Relations and Purchasing label made a unanimous decision to award the label to RTE. This public recognition of RTE's commitment to responsible purchasing is a commendation of its supplier relations practices.

⁽¹⁾ Label "Relations fournisseurs et achats responsables".

The Responsible Supplier Relations and Purchasing label was created in 2012 and is designed to reward companies that have demonstrably sustainable, balanced relations with their suppliers.

Based on ISO 20400 criteria since 2017, it is the only label of its kind awarded by France's public authorities, for a three-year period. In view of the demanding requirements, only around forty companies currently hold the Responsible Supplier Relations and Purchasing label.

RTE organised Energy and Digitisation, a European conference on the digitisation of electricity systems

Since September 2017, when the e-Energy declaration was signed by a variety of European electricity system actors (institutions, associations, private companies) to promote awareness of the importance of digitisation of electricity systems to support the energy transition, several conferences have been held to discuss this topic. RTE organised the fourth conference which took place at RTE on 29 January 2019.

At this conference, the example of electric mobility was used to re-examine the issues of electricity system digitisation to guarantee an efficient energy transition. The initial results of studies conducted jointly by RTE and Avere-France⁽¹⁾, an association for development of electric mobility, were presented at the event.

Their reports asserted that large-scale use of the network for the purpose of electric vehicles can be an opportunity for RTE and also for electricity consumers, as long as the resulting increase in connections is properly managed.

February 2019

Commissioning of the Quatre-Seigneurs-Saumade 225-kV underground link

The Quatre-Seigneurs-Saumade 225-kV underground link in southern France came into operation in late February after sixteen months of work. This new 7.8-km line has made it possible to develop an electricity "ring road" around Montpellier, where population growth has brought with it significant electricity requirements.

March 2019

Hauts-de-France became France's leading region for renewable energies

The new renewable energy connection plan signed on 21 March 2019 for the Hauts-de-France region (in the north of the country) concerns 3,000 MW of additional renewable energy capacity.

This plan illustrates the dynamic development in France's top region for renewable energy connection. It is the culmination of extremely extensive work done over two years by RTE and the distribution network operators, in conjunction with energy producers.

SME Purchasing Forums in RTE's seven regions

In 2019, the amount of purchases by RTE from small- and medium-sized enterprises was €338 million or 21% of the company's total purchases. RTE aims to reach a proportion of 25% by 2025.

To further enhance RTE's collaboration with current and future SMEs, each of the company's regional Purchasing Agencies held an SME forum in March 2019. These forums raised RTE employees' awareness of the issues, and practical steps to make it easier for SMEs to win RTE contracts, build SME loyalty, and shorten payment times. The participating SMEs described their experiences, stressing that the ambition of consolidating RTE's local relationships as laid down in the corporate mission statement is very welcome: it meets their demands and is positive for local areas.

These measures for SMEs are a clear expression of the commitments made by RTE in its Responsible Purchasing Charter.

Laying of the first stone for the "Campus Transfo"

The Campus Transfo project concerns a new campus for training and expertise with a focus on connection between the electricity and digital networks.

It will group all of RTE's training resources on a single site with greater resources, including modern training rooms, accelerators for development of multimedia devices, layouts conducive to collaborative working, etc. The employees of RTE's training department will be joined on the campus by teams from the network expertise department and IT and telecommunications teams, doing work with a highly technical content for the digital equipment that is now an essential part of network management (command and control systems, power electronics, telecommunications and information systems, etc.).

⁽¹⁾ Association nationale pour le développement de la mobilité électrique.

Campus Transfo will give all RTE employees and the company's external partners good conditions for execution of their missions, promoting openness and innovation in a working environment of exemplary sustainability. This project is an extension of RTE's existing training site at Jonage.

The first stone of the campus building was laid on 5 April 2019, and the teams concerned are expected to begin working there in September 2020.

The 30,000-m² site will be adjustable and modifiable in the long term, providing workstations for 370 trainees and experts, and room for an average 7,000 RTE trainees each year.

May 2019

As European institutions were renewed, thirteen network operators published a "joint declaration"

On 10 May 2019, RTE published a "joint declaration" by the managers of the principal European electricity transmission network operators (Germany, Austria, Belgium, Spain, France, Greece, Italy, Montenegro, the Netherlands, Portugal, Romania, Slovakia and Switzerland). This declaration called for greater coordination of member states' energy policies for the long-term operation of the European electricity network. The objective of this common appeal is to:

- raise awareness in future representatives of European institutions;
- convince the public authorities of the benefits of a stronger Europe of electricity, which are not always clearly grasped.

Transmission network operators are in charge of system safety, whereas security of power supply is the responsibility of the member states. The operators thus wanted to remind the authorities of the serious difficulties Europe could face if the states do not coordinate their electricity mix more closely.

RTE-Avere-France report on the consequences of electric mobility

On Wednesday 15 May 2019, RTE and Avere-France (an association for development of electric mobility) published the results of a study entitled "The challenges for the electricity system of the rise in electric mobility". The initial findings of this study had been presented at the European Energy and Digitisation conference on 29 January (see significant events of January).

The principal findings were that:

- the electricity system is able to absorb development of electric mobility provided that charging is well/managed, for example by locating electric vehicle recharging points close to sources of variable renewable energies;
- whatever the scenario studied, the rise in use of electric vehicles has major ecological and economic benefits;
- electric mobility is a means of flexibility for electricity network management.

Start of operation for the Montgros 225-kV substation

After two and a half years of work, the 225-kV substation at Montgros in the Lozère area of southern France began operation to secure electricity supplies in this rural area and reinforce North/South network traffic.

June 2019

Start of an offshore wind farm project near Saint-Nazaire

On Friday 14 June, François de Rugy, France's Minister for the Ecological and Inclusive Transition, was in Saint-Nazaire on the west coast of France for the official inauguration of France's first offshore wind farm project. One week earlier, the Council of State had decided to reject the final appeal against this 80-turbine wind farm to be developed by EDF Renewables, for which the turbines will be constructed in the same region by General Electric. The objective is to achieve connection to the electricity transmission network by around 2022-2023.

The Minister explicitly mentioned RTE for its role in connection of the Saint-Nazaire wind farm and for its contribution to defining the new framework for expansion of wind power.

At the same occasion, the Minister announced the winner of the contract for the future Dunkirk wind farm: EDF Renewables, in a consortium with the German Innogy and the Canadian Enbridge. This wind farm will comprise some 45 wind turbines.

Finally, Mr de Rugy announced that the targets for offshore wind power were being raised in the national multi-year energy programme. This programme sets the target for new wind power projects launched and awarded at an average 1,000 MW per year by 2024. In January, the government had envisaged an average 750 MW per year via six tender offers, three for fixed wind turbines and three for floating wind turbines.

The Bay of Biscay project route to be adapted due to the Capbreton submarine canyon

In the preliminary studies for construction of the new interconnection between France and Spain via the Bay of Biscay, RTE and REE undertook geological analysis of the undersea environment. In-depth studies revealed significant instability in the seabed close to the Capbreton submarine canyon.

RTE and REE must therefore conduct further analyses of the potential routes across this area to identify alternative technical and economic solutions.

The call for tenders for the interconnection design and construction contract, initially due to be launched in late May 2019, and submission of applications for administrative authorisations, initially scheduled for early June 2019, will take place once the results of these analyses are available.

RTE and REE remain fully committed to doubling electricity exchange capacities between France and Spain to 5 GW, enough to supply around 5 million households.

Commissioning of the 63-kV Champagnier – Drac-Inferieur-Pariset aerial and underground link no. 1

The 63 kV Champagnier – Drac-Inferieur-Pariset aerial/underground link no.1 in the Isère area of eastern France was brought into operation, after sixteen months of work that replaced and partly buried the line following the widening of the A480 motorway near Grenoble.

July 2019

A peak in summer consumption

On 25 July 2019, electricity consumption reached its highest point of the summer at 59.1 GW, close to the record summer peak of 59.5 GW in June 2017. The increase in consumption was notably due to use of air conditioning and ventilators. For each degree of temperature above seasonal norms, a 500 MW increase in consumption is observed – equivalent to electricity consumption by the city of Bordeaux.

Thanks to the work of its forecasters in close collaboration with France's national weather office Météo France, RTE had made preparations for this peak in consumption the previous week and was able to adjust the balance between production and consumption without any particular difficulty. These operating conditions were also consistent with the analyses published on 5 June in RTE's report on the forecast supply-demand balance for the summer of 2019⁽¹⁾.

(1) "Passage de l'été 2019".

During this period of high summer consumption, RTE also sent out reminders of simple ways to control electricity consumption.

September 2019

Bond issue

The start of the autumn was marked by RTE's issue of a dual-tranche €1.2 billion bond. RTE seized a particularly favourable market opportunity offering the lowest-ever coupons (as at 18 September 2019) by a firm on these maturities on the Euro bond market.

This bond helps to finance the investment programme and refinance two of RTE's debt maturities. It consists of one €500 million eight-year bond at 0%, and a €700 million thirty-year bond at 1.125%.

The average maturity of debt at 31 December 2019 was thus 10.2 years for an average cost of 1.84% (instead of 9.1 years and 1.97% at 31 December 2018).

RTE published its roadmap for the French energy transition through the ten-year network development plan (SDDR)

On 17 September, the Chairman of the Executive Board presented the proposed ten-year network development plan to the press.

This is RTE's investment plan for the energy transition, i.e. the network performance strategy for the next fifteen years in response to the rise and diversity of renewable energies.

RTE will have to develop and apply new skills and plan ahead for replacement of its network (the average age of installations is currently fifty years) to provide the same level of performance.

This plan gives RTE a clear roadmap that corresponds to the national objectives France has set itself.

It ensures that the national electricity network will have the same supply quality and offers the most economic approach to achieving the energy transition.

Like the generation adequacy reports, the ten-year network development plan is built on a multi-scenario analysis in order to reflect the uncertainties and transformations in the sector. It undergoes a "voluntary strategic environmental evaluation" by a specialist consultant firm, and is sent to three authorities: the Minister for the Ecological and Inclusive Transition, the CRE, and France's Environmental Authority.

October 2019

On Wednesday 2 October 2019, the European Commission gave a €530.7 billion grant to the “Celtic Interconnector” electricity project between France and Ireland

This grant completed the funding for the project, which can now move into the operational phase. Construction work should begin in 2023 after an economic and environmental impact study and the related public inquiry. The connection is expected to start operation in 2026.

The Celtic Interconnector electricity project is a designated Project of Common Interest (PCI) supported by the French and Irish Governments, and the two countries' regulators. It is led by RTE and its Irish counterpart EirGrid. The aim of the project is to create a 575-km electricity interconnection link between France and Ireland, running undersea from the Knockraha substation in Cork county (Ireland) to La Martyre substation in Brittany (north-west France). The anticipated cost of the project is around €1 billion.

Development of electricity interconnections provides supporting infrastructures for the energy transition in Europe. As the first direct connection between Ireland and mainland Europe via France, the Celtic Interconnector will strengthen electricity supply security to interconnected countries, and will promote development of renewable energies.

Second activation of the interruptible load procedure

See the events of January 2019 above.

Participation in the BioMim'expo event on 22 October

Biomimicry is an approach to innovation that takes inspiration from nature, to produce solutions that involve low resource consumption, are recyclable, and can also cultivate a capacity for regeneration of natural environments. RTE's R&D is interested in this concept due to the prospects of producing solutions that take account of the scarcity of resources, multi-functionality, and the environmental impact. This approach helps the company to protect itself against several risks such as health risks, deterioration of the environment and climate change.

At this event, RTE joined forces with Gimelec, which represents the electricity industry, to launch a joint initiative on biomimicry for energy.

Local satisfaction surveys

RTE ran its first satisfaction survey of a range of local actors with which the company regularly interacts. This survey is intended to evaluate the quality and closeness of RTE's relations with these actors, and to identify ways to better meet their needs, particularly by introducing service lines for local areas.

The survey showed that RTE is a very well known name to the local elected officials and public decision-makers interviewed (94% had already heard of the company, and 67% were familiar with it), and that they are on the whole satisfied with their relations with RTE (74% satisfaction rate).

The officials' and decision-makers' satisfaction with RTE is high for its core business of “operating and developing an effective electricity transmission network”, but there is still room for improvement on other contributions to local and regional services: RTE's impact on local economic development and employment, the integration of renewable energies, the energy transition, and urban planning. Setting up local and regional service lines provides an opportunity for RTE to structure its contributions in a way that raises their profile and serves local areas better.

November 2019

Start of work on the Avelin-Gavrelle project

After eight years of consultation, over 140 public meetings and a large number of administrative authorisations, the plan to rebuild a 400-kV electricity line between Lille and Arras in the north of France moved into the “construction” phase in early November. RTE decided to rebuild this line since it often comes close to maximum transit capacity.

This project will use the new “Équilibre” pylon design. It is also a site for learning, in partnership with one of the tender winners: some ten unemployed people will work on the project for the practical component of their training course, and will ultimately be able to join the contractor as very high-voltage network assemblers.

The Linux Foundation Energy Summit 2019

RTE was a sponsor and host of the Open Source for Energy initiative which promotes development of open source technologies for the energy sector. This strategy aims to develop interoperability between solutions, and resilience in the face of cyberattacks, an area in which open source solutions have proved their worth in other sectors.

RTE participated in the European Utility Week (12-14 November)

The annual European Utility Week event took place in Paris from 12-14 November at the Porte de Versailles Exhibition Centre. Since 2013, this event has been an important forum where European energy actors meet and discuss new solutions for the energy transition and sustainable development. Every year, equipment manufacturers, systems integrators, consultants, SMEs and start-up companies attend the European Utility Week and exchange their views. More than ten delegates from RTE spoke on strategic subjects such as storage, hydrogen, open source technologies and construction of the Europe of energy.

Storm Amélie hit the French coast on Sunday 3 November

Twenty years after the 1999 gales that caused serious damage in France, Storm Amélie arrived on the French coast. Despite winds of up to 160 kmph, this storm did not cause any power cuts on the transmission network managed by RTE.

This outcome is attributable to work done by RTE to improve the security of the network after the 1999 gales in which nearly 1,000 pylons were destroyed or significantly damaged. As a result of the work carried out between September 2000 and 2017, costing €2.8 billion, the network was more resilient, and this was clearly demonstrated in early November.

Thursday 14 November: a significant fall of sticky snow damaged the electricity distribution and transmission networks. RTE's teams were mobilised for the necessary repair work to restore power supply to 16,000 customers.

An exceptional episode of intense snowfall led to significant power cuts in south-west France. 330,000 customers were left without electricity due to damage to the distribution and transmission networks, and RTE's lines were concerned in 16,000 cases. The problems attributable to the transmission network were mostly confined to the Marie substation (at Romans-sur-Isère in south-east France): a pylon bearing both types of power line collapsed under the weight of the sticky snow, which was particularly heavy.

In response to the lack of electricity in the Romans-sur-Isère and Bourg-de-Péage zones, RTE sent out a large number of intervention teams, including reinforcements from the neighbouring regions, and conducted heliborne line inspections. In difficult conditions (cold, fog, waterlogged and muddy ground), the teams worked successive shifts to complete the repairs as fast as possible, and the principal power supply was restored at the Marie substation on 18 November.

Other pylons were also damaged. Temporary wooden structures were installed to restore power to the industrial customer SPSE, a pipeline company that had to scale down its activities until its principal electricity supply from the transmission network could be re-established.

Cergy substation: incident on Wednesday 27 November

An incident occurred on Wednesday 27 November at the 225-kV Cergy substation. As a large portion of electricity consumed by west Paris and the Île-de-France region transits via this substation, Cergy is one of the key facilities for supplying electricity to this densely populated zone.

Analysis of the incident showed that material damage occurred shortly before 10 pm, in the feeder disconnector of a 225-kV link coming from the substation. This led to a short circuit which normally would have been neutralised by the protective systems built into transmission network installations, but they failed to work and the short circuit continued. This explains the blue halo effect that was visible in the surrounding area and widely shared on social networks. Due to the failure of certain protective systems, telecontrol commands from the dispatching room were necessary to eliminate the short circuit.

This sequence of events led to a substantial drop in voltage which explains the power cuts. More than half of the 200,000 customers concerned were reconnected to their supply in just a few seconds by automatic response systems, or in a few minutes after manual action. The rest of the supply resumed in 5 to 7 minutes, except for 6,000 customers in the Nanterre area, where onsite intervention by Enedis was needed to restore normal service.

December 2019

RTE's first Suppliers Trophies event⁽¹⁾

RTE has been taking steps for a long time to improve relations with all its suppliers, developing mutual trust on a daily basis. On 3 December, the importance of quality customer/supplier relations was reasserted at the first RTE Suppliers Trophies ceremony, which underlined the associated expectations. The responsible purchasing policy applied since 2010 reflects this. In 2016, RTE drew up its own Responsible Purchasing Charter, formally defining its commitments towards suppliers. In 2019, RTE was given the Responsible Supplier Relations and Purchasing label by France's interfirm mediation agency, a strong commendation of RTE's active engagement with these matters.

On 3 December, nine prizes and one special prize were awarded to suppliers' initiatives selected from 129 applications in the following three categories: industrial excellence, service innovation, and making the human factor a central concern in the firm. These prizes show how the suppliers who work with RTE strive for innovation, commitment and professionalism.

Network reinforcements in the Haute-Durance region were allowed to continue

The 150-kV electricity line in the Durance valley in the Alps was installed in the 1930s, and is now insufficient for the future electricity requirements of this zone (which attracts around 500,000 tourists in the winter). The renovation programme involves establishment of a 225-kV network to replace the 150-kV network, and renovation of the 63-kV network which is mostly underground.

This work was suspended on 8 August 2018 after Marseille Administrative Court cancelled the decision granting an exemption from the ban on work affecting the habitats of protected species and disturbing members of protected species. That decision had validated measures to avoid, mitigate and offset the impacts of the projects to reinforce Durance valley network.

After a public consultation procedure in June 2019, a second exemption from the "protected species" rule was signed on 5 July, allowing gradual resumption of the work. This exemption was supported by the Marseille Administrative Court's rejection of an application for its suspension, in accordance with the ecological cycles of the protected species concerned.

Resuming work on this project was necessary to make the network secure as winter approached. In mid-December, the 63-kV aerial/underground line between Argentière and Serre-Barbin was put into operation, providing a secure electricity supply for the north of the Hautes-Alpes area. The project is continuing: in 2020 the Argentière - Briançon-1 and Argentière - Serre-Ponçon lines will be brought into operation, then 70 km of lines will be dismantled. In 2021 and 2022, the Grisolles - Pralong, Mont-Dauphin - Pralong and Embrun - Pralong lines will begin operation, and another overhead line will be dismantled.

⁽¹⁾ *Trophées fournisseurs RTE.*

03 — RISKS AND THE RISK CONTROL FRAMEWORK



3.1 METHODOLOGY

General risk management process

RTE has introduced procedures for control of its activities which are integrated at all levels of the company. These procedures are designed to give management reasonable assurance regarding the execution of its activities and implementation of decisions made in order to achieve the goals set. This process contributes to efficiency in operations, with the aim of using resources effectively.

● *Scopes of application and context*

The risk control procedures are coherent with the company's mission and objectives. RTE applies the principles of the French market regulator AMF's⁽¹⁾ framework for French companies whose shares are admitted to trading on a regulated market. Risk management and internal control are instruments for action, control and surveillance; they concern every employee and involve each manager at all levels of the corporate hierarchy. Context analysis is used to identify risks for assessment.

● *Risk levels*

Risk management procedures are structured in several levels, with identification of the principal risks at each level.

1. Company risks

- RTE's Executive Committee examines the risks affecting RTE every half-year to deduce the major risks for the company.
- Changes in the function risks, recent events, the strategic priorities and comparisons with other companies lead to a fairly broad list of risks to be monitored and included on the register of risks validated by the Executive Committee.

2. Function risks

- The directors of the functions (Operations, Maintenance, Development and Engineering, Purchases, Human Resources, Finance, Customers, Information and Telecommunication System, etc.) are responsible for organising risk control for their own activities and making sure it is implemented and the procedures used are effective.

- Specific risks relating to the environment are also identified at the function level, then concatenated by the Environmental Consultation department for the purposes of risk coverage associated with ISO 14001 certification.

3. Operational risks

- The operational entities' risks are identified on the basis of the function risks and a local analysis conducted in line with their objectives.
- Risk mapping for these entities is thus informed by the risks attached to the processes, projects and activities they manage, and also by cross-functional activities.
- Specific risk analyses are also conducted, for example in connection with projects or due to regulatory obligations.

● *Major risks*

Major risks are selected from the list of RTE's principal risks on the basis of criteria defined by the Executive Board:

- a risk is classified as "major" if the consequences of its occurrence could threaten the network's survival, RTE's missions or human safety;
- the criteria and thresholds are reviewed by the Executive Board.

● *Consultation and communication*

The audit and risk division is in charge of design and application of risk control procedures. This division contributes to their operational implementation by coordinating risk management and internal control officers located in each of the company's divisions and the regional entities, and promotes a culture of risk anticipation and control at RTE.

Every year, the Supervisory Board's Economic supervision and Audit Committee reviews a report on audit and internal control activity, post-audit action plan monitoring, changes in RTE's major risks and the associated provisional audit programme. A roadmap for adjustment of the risk control procedures to meet the latest recommendations (ISO 31000-2018) is currently being finalised and will be applied in 2020.

⁽¹⁾ AMF – Autorité des marchés financiers.

● **Risk assessment (identification, analysis, evaluation)**

Each risk is assessed based on its impact in several areas and the likelihood of occurrence, measuring each criterion on a four-point scale.

The level of control over each of these risks is assessed by cross-comparison with the risk analyses conducted by the functions, detection and examination of weak signals, systematic consideration of audit observations and conclusions, monitoring of the action plans concerned and the internal control results. For each major risk, a designated Executive Committee member ensures coherence with the priorities set out in the corporate mission statement and practical action to contain risks, and sees that tailored monitoring is set up to take account of the specificity of the risk under his or her responsibility.

● **Selection of major risks**

Selection is currently based on four criteria: strategic, financial, reputation, and social and environmental impacts.

After these criteria were defined in 2019, two environmental risks were added to the risk mapping, and the set of major risks now covers CSR risks relating to RTE's activities. The method for identifying the CSR risks contained in major risks is presented below.

● **Addressing the risk**

After assessment, the residual risk is evaluated and addressed by application of the appropriate control action. Standard control action aims to limit the risk (in terms of impact if it materialises), reduce the likelihood of occurrence, or protect the company against the risk through an insurance policy.

● **Monitoring and review**

The mapping of major risks was revised in autumn 2019 to reflect changes in the context and monitoring of risk control action. Among the improvements made, this review aims to make the risk names more accurate, and integrate more risks reported by the operational entities.

The risk management procedures are monitored and reviewed by the internal coordination network.

Methodology used to identify CSR risks

In 2015, RTE began work to assess social, societal and environmental issues of relevance to the company, through interviews with employees and external stakeholders.

In 2016, a meeting was held for internal actors (representative managers from the functions) and external actors (suppliers, customers, and NGOs) to better assess CSR topics and RTE's performance in those areas. This exercise led to a ranking of the issues and risks affecting the company's activities. The analysis confirmed the priorities and ambition of the corporate mission statement, and led to actions for improvement, particularly to enhance performance and perception of the key challenges (flexible consumption services and demand-side management, inclusion of renewable energies, etc.).

In 2017, a general performance workshop was held to identify financial and non-financial indicators based on major levers for value creation, in line with the corporate mission statement and the results of the materiality analysis. The results of this work were presented to the Executive Committee for the first time in January 2018, with a further presentation in October 2018 for validation of the key performance indicators and the business model.

In the autumn of 2019, the analysis of major risks was revised to integrate emerging CSR risks, particularly the risk related to climate change and environmental risks.

The list of the principal risks was also re-examined in view of the CSR risks resulting from:

- stakeholder demands as identified in the materiality analysis;
- the United Nations' sustainable development goals in which RTE considers it has a role to play (sustainable development goals no. 3, 4, 5, 7, 8, 9, 11, 12, 13, 14 and 15);
- and social, environmental and societal matters mentioned in the French decree on disclosure of non-financial information in the management report (decree no. 2017-1265, article 2).

Convergence between major risks and CSR risks

In the rest of this document, major risks are thus classified as CSR risks when a CSR issue could make them more frequent or serious.

Societal and social risks are therefore included in the major risks of "Public opposition to RTE facilities", "Mismatch between skills and jobs under the corporate mission statement", and "Human health and safety" in the risk framework.

Environmental aspects are included in major risks through the risks of “Activities and networks ill-adapted to climate change” and “Environmental damage: pollution, waste, biodiversity”.

Risks relating to transparency, discrimination and human rights are included in the major risk named “Legal risk” and described in detail in chapter 3.6, “Vigilance plan”, and through the financial risks.

3.2 MAJOR RISKS INCLUDING NON-FINANCIAL RISKS

This chapter describes the major risks and the associated control procedures. When the risk includes a CSR dimension, a description of the policies and indicators is presented. References are given to the relevant “Challenges” section, which provides further details of RTE’s activities on topics concerned by article L. 225-102-1 of the French Commercial Code (*Code de commerce*).

3.2.1 Summary of major risks and non-financial risks

The table below identifies the major risks and, where relevant, their CSR impact.

The priority number reflects the criticality of the risk for RTE (Impact/Likelihood) in the risk mapping. These major risks are presented by level of criticality, with a brief description of each one.

Priority level	Name of risk	Description of the risk	Non-financial risk?	Related policies (for non-financial risks)	Related performance indicators (for non-financial risks)
1	Network events or operating incidents	Serious operating incidents that could result in power cuts for customers and, potentially, partial or total collapse of the network	Yes	Maximum current-carrying capacity Electricity quality Business policy	Equivalent outage time Customer satisfaction rate
1	Large-scale attacks and cybersecurity	RTE may be exposed to deliberate malicious acts	Yes	Background checks Information system security policy Awareness-raising and screening policy	Number of background checks Awareness of cyber-risks
1	Human health and safety	Risks of accidents and occupational illnesses for RTE’s employees or contractors in the course of their work	Yes	Policy for health, safety and quality of life at work	Accident frequency rate
2	Mismatch between skills and jobs under the corporate mission statement	Not having the right skills/expertise to respond to the emergence of new business activities/challenges	Yes	Mobility and talent management policy Agreement for gender equality	Percentage of employees who benefited from a professional development measure Percentage of women in management committees
2	Legal risk	Failure to comply with laws and regulations exposes RTE to a significant risk, depending on the sanctions applicable	Yes	Environmental policy	Recovery rate for hazardous waste tracking documents Percentage of sites subjected to an environmental regulation compliance assessment

3 | RISKS AND THE RISK CONTROL FRAMEWORK

Priority level	Name of risk	Description of the risk	Non-financial risk?	Related policies (for non-financial risks)	Related performance indicators (for non-financial risks)
2	Public opposition to RTE facilities	Opposition from society could prevent or delay network development projects, weakening the power supply for certain areas or certain customers	Yes	Network development policies (cf. the "Externally-set objectives affecting connections and network development" risk). Environmental policy	Biodiversity-friendly sites Percentage of purchases from SMEs Percentage of "zero-phyto" sites
3	Uncertainties over the level and structure of the TURPE 6 tariff (2021-2024)	RTE must take care to maintain financial equilibrium and its ability to rise to the challenges of its public service mission	No		
3	Changes in European laws with consequences for RTE's structure or missions	Changes in the legal framework could be a risk for RTE if they scaled down or limited its missions and therefore its efficiency	No		
3	Social crisis or lack of internal cohesion entailing media consequences	The external environment remains sensitive and could lead to obstructions with an impact on RTE's organisation, finance or reputation	Yes	Agreement on social dialogue and employee representation	Employee pride score
4	Externally-set objectives affecting connections and network development	A decline in RTE's competitiveness on connection and network development activities could have negative consequences for the company's reputation, finance and organisation	Yes	Network development policies	Renewable energy power connected to the network
4	Activities and networks ill-adapted to climate change	RTE is exposed to unpredictable weather events and will be affected by the accentuation of certain weather phenomena as a result of climate change	Yes	Stormproofing policy (section on adapting to the consequences of climate change) Environmental policy	Equivalent outage time (including outages caused by weather events)
4	Continuity of critical activities	RTE's capacity to continue its critical activities in the event of severe disruptions, and to implement its business continuity plans	No		
4	Environmental damage: pollution, waste, biodiversity	When an incident happens, the activity and employees of RTE, its customers and other third parties may be concerned by environmental emergencies	Yes	Environmental policy	Biodiversity-friendly sites Percentage of "zero-phyto" sites Volume of SF ₆ leaks Waste recycling rate

3.2.2 Description of risks, control procedures and key indicators

● 3.2.2.1 System safety: network events or operating incidents

Name of risk	Description of the risk	Related policies (for non-financial risks)	Related performance indicators (for non-financial risks)
Network events or operating incidents	Serious operating incidents that could result in power cuts for customers and, potentially, partial or total collapse of the network	Maximum current-carrying capacity Electricity quality Business policy	Equivalent outage time Customer satisfaction rate

Description of the risk

Three main risk factors may cause extensive power cuts on the electricity network: uncontrollable physical phenomena, industrial incidents and unforeseen events.

- Imbalances in the French or European networks can trigger power cuts and could even result in partial or total collapse of the network in France, with consequences potentially extending across all of Europe.
- Serious operating incidents can also have a critical impact on the electricity supply to RTE's customers, as well as on equipment and people.
- Finally, certain events, attributable to the weather (storms, floods, sticky snow, heatwaves, etc.), accidents (fires, explosions, etc.) or human error, can impair the network operation and affect RTE's direct and indirect customers, as well as third parties and RTE's own assets, with a potentially significant impact on the corporate image.

A combination of these phenomena, aggravated by a malfunction in the protection system, can lead to a blackout.

The risk of external attack is included in the risk named "Large-scale attacks and cybersecurity".

CSR dimension of the risk

Many technical aspects contribute to network safety (maximum line intensity, short-circuit power, frequency management, loss of synchronism, etc). RTE uses a range of approaches to manage these technical issues. The visible part of RTE's activities are only evident when an incident occurs, and due to the protective and defensive measures taken by RTE, the number of major events remains small and their impact limited. However, customers may still experience local power cuts that can disturb the economic development of businesses. At some high-risk sites, a power cut could have potentially serious consequences for the environment (ICPE⁽¹⁾ sites, classified for environmental protection purposes and "Seveso" sites) or for human safety (e.g. hospitals).

(1) Installation classée pour la protection de l'environnement.

Risk control procedures

RTE has detailed procedures in the form of network protection, defence and restoration plans which set out the action to be taken depending on the situation. RTE also conducts regular crisis exercises to ensure rapid responses by teams and the organisation as a whole in the event of an incident.

RTE is also conducting a stormproofing policy to make the network resilient to unusual weather events, and applies technical policies designed to limit the duration of power cuts.

In anticipation of future changes (in France and Europe), RTE has also taken steps to ensure a reliable electricity supply (higher cross-border exchange capacities, reserve management). It develops scenarios to inform future decisions on energy matters in France, participates in projects to forecast constraints on the future electricity system, and has introduced new instruments to cope with them.

● *Crisis exercises*

To practise the best response to a serious crisis of any kind that affects the operation of the electricity transmission system, RTE organises and participates in crisis exercises several times a year, at its own initiative or at the initiative of partners.

In 2019, RTE conducted six crisis exercises to test the existing procedures, the actors' reactive capacity, and the coordination between responders. The company took part in several general crisis exercises with actors from the electricity sector, industry and government administrations, all conducted in simulated conditions of strong media pressure. Regional exercises concerning more local incidents also took place. Feedback from these exercises is used to improve incident management.

Crisis exercises promote better crisis communication in relation to exceptional events: communication is practised and enhanced with a focus on the quality of public announcements, the clarity of the language used to explain the situation, and learning to use the most appropriate media for the situations.

● *Network security*

After the 1999 gales that destroyed or seriously damaged nearly 1,000 pylons in France, RTE began work to make the network more robust (cf. Significant events, November 2019).

RTE exercises particular vigilance when new storms arise to detect any generic faults. It has also incorporated these stricter requirements into construction work phases to give the network the best capacity to withstand violent winds and certain extreme weather events.

This systematic network reinforcement policy, the exacting standards for network design, and the crisis exercises are all steps that make the network more resilient in the face of disruption caused by weather events, and enable RTE to anticipate the effects of climate change.

● *Policies for electricity quality and maximum current-carrying capacity*

To limit power cuts and their social and environmental consequences, RTE applies policies intended to prevent risky situations and reduce their impacts.

The electricity quality policy concentrates on identifying and rectifying network weaknesses in terms of continuity of supply to RTE's customers. It sets out the technical and organisational measures to be used to reduce the equivalent outage time⁽¹⁾.

The maximum current-carrying capacity policy defines the procedures for power line transit capacity management. The lines have a set maximum capacity to protect the safety of the people and properties nearby. This operating constraint essentially depends on the maximum intensity the lines can withstand for a temporary period.

Results and performance

● *Quantitative and qualitative results in 2019*

Detailed results are reported in section 4.5.2 "Increasing sensitivity to the quality of electricity".

A top-quality electricity service is an advantage for local economic development. RTE has introduced an interruptible load programme with a procedure for practically instant load-shedding by industrial customers on the relevant contracts. This procedure was activated twice in 2019.

Other mechanisms are also in operation to manage the supply-demand balance or enable RTE to respond in real time (system services). The challenges associated with development of market mechanisms are described in section 4.1.3 "Rolling out market mechanisms".

● *Key indicators of RTE's performance in relation to this risk*

The equivalent outage time indicator is used to monitor the quality of electricity supply, which is measured through both the duration and the scale of breaks in the electricity supply. Since good-quality electricity contributes to the appeal of the French regions, RTE's performance can have repercussions for employment and local development.

(1) The annual average time of breaks in energy delivery to RTE's distributor customers and industrial consumers (excluding the SNCF and RATP).

Further details on this point are provided in section 4.5.2 "Increasing sensitivity to the quality of electricity" in relation to societal issues, particularly considering customer sensitivity to power cuts, and the consequences in terms of challenges facing RTE.

The customer satisfaction rate is an indicator that reflects electricity quality and its societal impact. Electricity quality is the principal parameter in RTE's customer satisfaction with the network.

The business policy aims to define practical steps RTE can take with customers to improve their satisfaction.

Indicator relating to the "system safety" risk		2017	2018	2019	Target
Equivalent outage time (excluding exceptional events)	In minutes	1'27"	2'59"	3'25"	≤2'48" (TURPE 5)
RTE customer satisfaction rate		85%	88%	87%	92% in 2020

● 3.2.2.2 Large-scale attacks and cybersecurity

Name of risk	Description of the risk	Related policies (for non-financial risks)	Related performance indicators (for non-financial risks)
Large-scale attacks and cybersecurity	RTE may be exposed to deliberate malicious acts	Information system security policy Awareness-raising and screening policy	Number of background checks Awareness of cyber-risks

Description of the risk

Like all operators of vitally important infrastructures, RTE is exposed to external risks whose scale is not easy to predict. As well as the unforeseeable technical and weather events described earlier, RTE can be exposed to deliberate damage. Malicious acts or attacks on the infrastructure or information system, possibly acts of terrorism, are a form of risk for which the probability is increasing. Cybersecurity risks in general have risen for most companies as a result of technological changes.

CSR dimension of the risk

The societal and environmental consequences of risks of attack are identical to those of the risks of power cuts described above: economic, social and environmental consequences at the industrial sites concerned.

Making all employees aware of site and information system security is one way to reduce these risks, and thus limit their impacts.

Risk control procedures

RTE applies preventive measures to protect itself against deliberate malicious acts, notably through complying with the requirements of the French law on the national military budget, which obliges RTE to have accreditation for its vitally important infrastructures, and following the recommendations of the ANSSI⁽¹⁾ (French national agency for IT security).

● Information system security policy

RTE has an information system security policy that describes the constraints applicable to the company, and its ambitions and resources to address them.

The company regularly carries out robustness tests of its information systems, and campaigns to raise employee awareness of cybersecurity risks (e.g. phishing). The exercises carried out in liaison with the ANSSI in late 2018 confirmed that RTE has good control of its systems. Actions were instigated in 2019 to continue this partnership with the ANSSI and raise the level of that control. Regarding the security of its installations, RTE is careful to develop new surveillance methods, and works with the relevant authorities to anticipate and detect attacks that could generate large-scale incidents.

(1) Agence nationale de la sécurité des systèmes d'information.

The probability of physical attacks is increasing in certain countries with complex geopolitical situations. The number of cyberattacks is on the rise, but their scale and impact remains low. The company is considering taking out insurance cover for cyber-risks.

The information system security policy ensures coherence, confidentiality and data security in the RTE Group.

● Awareness-raising and background checks

Awareness-raising and training about the various consequences of a breach in cybersecurity are fundamental to prevent serious incidents such as data loss or hacking.

The indicator of RTE's performance in relation to this risk thus concerns its awareness-raising campaigns, conducted through participation in an e-learning course.

Upstream of awareness-raising, screening via background checks is conducted for all employees and contractors that may have to work in strategic parts of the electricity network. These checks were initially undertaken when hiring new personnel and renewing

services, but has now been extended to all the employees concerned. The screening procedure involves contacting the competent government services for confirmation of the level of trust that can be assigned to an employee. RTE is thus taking action to prevent terrorist intrusions into the electricity system as much as possible.

Results and performance

This is essentially a non-financial risk, but the new "background check" indicator is not released here. These matters are sensitive and must be approached with certain reservations due to the confidential nature of possible vulnerabilities in the electricity system.

Key indicator of RTE's performance in relation to this risk

Indicator relating to the "physical or cyber attacks" risk	2019	Target by end 2020
Awareness-raising Number of employees who followed an awareness-raising course	401 (4.3%)	50% of RTE employees

● 3.2.2.3 Human health and safety

Name of risk	Description of the risk	Related policies (for non-financial risks)	Related performance indicators (for non-financial risks)
Human health and safety	Risks of accidents and occupational illnesses for RTE's employees or contractors in the course of their work	Policy for health, safety and quality of life at work	Accident frequency rate

Description of the risk

Network maintenance, renovation and development activities are risky activities for RTE personnel and its contractors' employees, because of the network configuration (high points, difficult access, heavy loads to be transported, electricity risks, etc.) and certain substances (which can be toxic or polluting) involved in equipment operation. If an incident occurs in the course of work, RTE's and its contractors' employees may thus be exposed to risks which, if not well-controlled, could develop into a work-related accident or illness. Incidents arising on the network

– pollution, falls from height, broken cables – can also have consequences for people in the vicinity when they happen. RTE has a duty to limit this type of incident to the absolute minimum.

CSR dimension of the risk

RTE is strongly mobilised to limit the risks of accidents for its own employees, its contractors' employees, and the people living near its facilities. RTE is also taking steps to protect employees' health and improve the quality of life at work.

Risk control procedures

- *Policy for health, safety and quality of life at work*

In response to this priority risk, a new policy for health, safety and quality of life at work has been introduced with methods and resources intended to ensure that ambitious objectives are attained in the long term. A department in charge of health, safety and quality of life at work was set up as part of a new entity in charge of risk control. This department has implemented its action plan, validated by the Executive Committee. The plan notably includes introduction of a safety management system, a new manager training course, continuation of the safety culture programme and more incentive-style action to encourage contractors to control safety. RTE's policy for health, safety and quality of life at work lays out the 2019-2021 action plan which is currently being applied to limit this risk.

- *Other policies*

Policies to reduce the use of phytosanitary products have a direct impact on employees' and contractors' health in the long term because they limit exposure

to chemicals and favour more hospitable, cooler ground than the gravel put under all substations. These policies and indicators are described in relation to the environmental damage risks mentioned earlier.

A fuller description of the actions taken to limit the human impacts of these activities is provided later (in section 4.6.1 "Creating an ever-safer working environment and better quality of life at work").

Results and performance

- *Key indicator of RTE's performance in relation to this risk*

The indicator that reflects the risk related to employees' and contractors' health is the accident frequency rate.

Indicator relating to the "health and safety" risk	2017	2018	2019	Target for 2021
Accident frequency rate (RTE employees and contractors)	6.94	6.68	9.33	3.5

- **3.2.2.4 Mismatch between skills and jobs under the corporate mission statement**

Name of risk	Description of the risk	Related policies (for non-financial risks)	Related performance indicators (for non-financial risks)
Mismatch between skills and jobs under the corporate mission statement	Not having the right skills/expertise to respond to the emergence of new business activities/challenges	Mobility and talent management policy Agreement for gender equality	Percentage of employees who benefited from a professional development measure Percentage of women in management committees

Description of the risk

To adapt to the energy and digital transition, RTE is investing in an ambitious plan for change that includes significant commitments for employee support (diversified career paths, preservation of employment zones).

As the pace of technical and societal changes accelerates, RTE has defined its corporate mission statement which implies a large number of changes as regards staff mobility between functions and geographical regions. The risk is that insufficient preparation will be made for these changes, leaving RTE unable to adapt to the emergence of new functions, often associated with digital developments.

With low personnel turnover and high levels of expertise, RTE needs to maintain the employability of its personnel and prepare the ground for future requirements.

CSR dimension of the risk

Control of this risk aims to guarantee the employability of RTE's personnel and give the company a diversity of profiles as its functions experience significant change.

The social impact of this risk is substantial, as it concerns the preservation and development of all employees' skills.

Risk control procedures

● Diversity and professional development

In addition to training provisions that go beyond its legal obligations, RTE is taking several steps to construct the future without compromising its strong corporate culture.

Cross-functional procedures for hiring and mobility exist to foster smooth profile adjustment as appropriate to requirements, over the horizon covered by the corporate mission statement.

RTE is committed to diversity, taking part in the "CIGRE Women in engineering" programme and, in early October 2019, the company published a booklet to raise employee awareness of this concern. RTE strives to attain a level of diversity that will enhance its teams' performance.

● 3.2.2.5 Legal risk

Name of risk	Description of the risk	Related policies (for non-financial risks)	Related performance indicators (for non-financial risks)
Legal risk	Failure to comply with laws and regulations exposes RTE to significant risk, depending on the sanctions applicable.	Environmental policy	Collection rate for dangerous waste monitoring documents Number of sites that have been subjected to an environmental regulation compliance assessment

Description of the risk

The French Energy Code (*Code de l'énergie*) places RTE under non-discrimination and transparency obligations which are translated into its code of good

conduct. Naturally, RTE is subject to all the laws and regulations applicable to companies, particularly entities with operations on the financial markets. Any

Results and performance

● Quantitative and qualitative results in 2019

Information about employment, work organisation, training and equitable treatment is provided in section 4.6 "Looking after employees, rewarding and growing talents".

● Key indicators of RTE's performance in relation to this risk

Two CSR indicators are monitored in connection with the "Mismatch between skills and jobs" risk. They concern training and equality in the workplace:

- percentage of employees who benefited from a professional development measure;
- percentage of women in management committees.

Indicators relating to the "Mismatch between skills and jobs" risk	2017	2018	2019	Target for 2021
Percentage of employees who benefited from a professional development measure	77%	87%	90%	90%
Percentage of women in management committees	19.5%	24.6%	25.4%	25%

failure to comply with those laws and regulations exposes RTE to significant risk, depending on the sanctions defined. The company thus monitors the laws with the aim of respecting all rules and laws of any kind that apply to it. Lack of monitoring or non-compliance would have consequences for RTE's reputation and reduce trust in the company.

For environmental matters, RTE aims to go further than the regulations and use the best practices, and to this end it has gained ISO 14001 certification.

CSR dimension of the risk

Some regulatory requirements, particularly concerning respect of the environment (Environmental Code), anti-fraud and anti-corruption (the "Sapin 2" law), and protection of private data (the GDPR regulation) contribute to RTE's non-financial performance. Failure to comply with these requirements could have major social and societal consequences.

Respect of human rights is also one of the issues covered by RTE both in its internal practices and in relations with customers and suppliers (the vigilance plan).

Risk control procedures

● *Respect of regulations*

Since its initial formation, RTE has set up processes to ensure strict application of the French Energy Code (*Code de l'énergie*) and the resulting constraints, notably concerning its day-to-day operations. Since 2014, RTE has also developed electricity market monitoring instruments with a view to preventing possible fraud and corruption: the sanctions in the event of a proven risk of fraud or corruption may go as far as suspending a market actor.

RTE is subject to the standard obligations that apply in French law to all companies of its size. It has therefore taken the necessary steps to meet recently-introduced legal obligations regarding anti-fraud and corruption measures, the duty of vigilance as regards environmental responsibility, safety and human rights, and management of personal data, in accordance with:

- the "Sapin 2" law: consolidation of procedures, taking account of the new recommendations issued by the French anti-corruption agency;

- the law on the duty of vigilance: RTE's vigilance plan is developed and overseen by a steering committee (cf. 3.6 "Vigilance plan");
- the general data protection regulation (GDPR).

RTE publishes a yearly report on application of the code of conduct, assessing compliance with the French Energy Code (*Code l'énergie*), particularly regarding the non-discrimination principle.

Regarding the environment, RTE has a number of policies covering environmental compliance (Noise, Biodiversity, Water and ground pollution, and Birdlife policies).

Results and performance

● *Quantitative and qualitative results in 2019*

Details are provided in section 3.6 "Vigilance plan".

● *Key indicators of RTE's performance in relation to this risk*

RTE continues to apply the requirements of the "Sapin 2" law, the GDPR regulation and the duty of vigilance. New indicators on these aspects are currently being defined.

Regarding environmental matters, RTE retains its ISO 14001 certification which was renewed in November 2019. The indicators monitored in this respect are also used for the risk of environmental damage:

Indicators relating to the "environmental compliance" risk	2019	Target 2021
Recovery rate for hazardous waste tracking documents (percentage of tracking documents that are returned to RTE for hazardous waste that has been eliminated)	96%	100%
Percentage of sites subjected to an environmental regulation compliance assessment	1,115 (80%)	100%

● 3.2.2.6 Public opposition to RTE facilities

Name of risk	Description of the risk	Related policies (for non-financial risks)	Related performance indicators (for non-financial risks)
Public opposition to RTE facilities	Opposition from society could prevent or delay network development projects, weakening the power supply for certain areas or certain customers	Network development policies (cf. the “Externally-set objectives affecting connections and network development” risk) Environmental policy	Biodiversity-friendly sites Percentage of purchases from SMEs Percentage of “zero-phyto” sites

Description of the risk

Opposition from local residents and, more broadly, opposition from society can often prevent or hold up network development projects, delaying reinforcement of the power supply for certain areas or certain customers, and connection of certain types of power generation. These delays are mainly generated by obstructive action to slow down administrative procedures, and occasionally physical occupation of the sites.

Public opposition can sometimes challenge the inviolability of facilities, with demands that installations be moved or buried although doing so has no economic benefit or would be contrary to the public interest. The principle of inviolability of public structures is gradually disappearing, and challenges to the primacy of public interests over private interests are becoming more common, with the risk that transmission network facilities could be weakened.

RTE often faces hostility to the presence of the infrastructure, allegedly due to environmental concerns. Situations of this kind are sometimes exacerbated by a lack of information, or fears of exposure to electromagnetic fields. The discourse on electrosensitivity is spread through the media, and is triggering certain scientifically unjustified misgivings about very high-voltage facilities.

The consequences of opposition to RTE's infrastructure may be financial, societal, legal, or relate to the media.

CSR dimension of the risk

RTE develops and maintains its network infrastructure throughout France, over time periods spanning several decades. Consulting stakeholders makes it possible to take account of the needs expressed, minimises the risk of delay in administrative procedures, and preserves the economic balance of a project without harming the environment. The quality of dialogue with stakeholders is crucial. It is used when network extensions are necessary to connect new generation sites (particularly for renewable energies) or for the economic development of new consumers. In both of these cases, RTE's activities have a major societal, social and environmental impact.

Such projects often have accompanying support measures to reinforce their acceptability at local level.

Risk control procedures

● Consultation with stakeholders

RTE runs an increasing number of innovative consultation actions with stakeholders on each project, for example providing residents in the vicinity of work-sites with a website identifying the key issues and giving out information about the project.

● Monitoring commitments

An internal policy (commitment monitoring) exists to ensure that projects correspond to the initial promises and regulatory requirements.

RTE organises long-term monitoring of the environmental commitments made during the consultation, and takes a proactive approach to interaction with the local actors concerned by each project.

Partnerships are concluded with non-profit associations for the support measures accompanying these projects.

● Transparency regarding electromagnetic fields

RTE is reinforcing transparency to address public concerns about electromagnetic fields (EMFs):

- RTE has promised to take measurements upon simple request, in agreement with the Association of Mayors of France;
- all the results of the measurements are released online on <https://www.cem-mesures.fr/>;
- a MOOC (series of short educational videos) has been developed about physical phenomena, biomedical research, and the legislation in France and Europe. As the project owner, RTE produced the educational content together with experts in the field. The MOOC entitled "Understanding extremely low-frequency electromagnetic fields" (<https://mooc.cem-50hz.info/>) won the 2019 RGI (Renewable Grid Initiative) Good Practice of the Year award in the Communication and Engagement category.

● Acceptance of installations in the landscape and environment

The MESIL⁽¹⁾ negotiated procedure for burying installations at local instigation is one way to reduce opposition by listening and responding to needs, provided the technical and economic conditions are favourable.

RTE is particularly attentive to environmental aspects of the network's presence, referring to the "biodiversity-friendly site" indicator to limit the impact on the environment.

● Increasing local purchasing

RTE has a policy of making more purchases as close to worksites as possible, with the aim of developing short supply circuits and improving the local economic fabric.

Results and performance

● Quantitative and qualitative results in 2019

Detailed results are available in sections 4.1.2 (on development of interconnections), 4.2.1 (on the expansion of renewable energies) and 4.5.3 (on RTE's regional and local ambitions).

● Key indicators of RTE's performance in relation to this risk

		2017	2018	2019	Target
Biodiversity-friendly sites	ha of land made biodiversity-friendly	933 ha	1,043 ha	1,161 ha	Double the area between 2017 and 2021
	Office sites with the "Jardin de Noé", "Refuge LPO" or equivalent label	2 sites including 1 with the "Jardin de Noé" label	3 sites including 2 with the "Jardin de Noé" label	8 sites including 6 with the "Jardin de Noé" label	15 sites with the "Jardin de Noé" label by 2020
Percentage of purchases from SMEs	%	20	22	21	25 in 2025
Percentage of "Zero-phyto" sites	office sites	-	100%	100%	100% since the end of 2018
	new substations	-	-	100%	100% of substations built in 2019
	existing substations	-	14%	18%	65% in 2022

(1) Mise en souterrain des ouvrages sur initiative locale.

● 3.2.2.7 Uncertainties over the level and structure of the TURPE 6 tariff

Description of the risk

RTE has a regulated monopoly on management of France's public electricity transmission network. In application of the French Energy Code (*Code de l'énergie*), the revenue from this activity is decided by the French energy regulator CRE and collected from customers through the tariff for use of the high-voltage public electricity network (TURPE HTB). The TURPE HTB tariff is calculated to cover all RTE's operating and capital costs, on condition that these charges correspond to those of an efficient operator. Capital costs are based on the return on a regulated asset base, which is defined as the product of that base and the regulatory weighted average cost of capital (WACC) set by the CRE.

The TURPE 5 high-voltage transmission network access tariff came into force on 1 August 2017 for a four-year period. It was set by the CRE decision of 17 November 2016, published in the *Journal officiel* of 28 January 2017.

This tariff assumes a forecast revenue trajectory for RTE over the period 2017-2020, which is corrected at the end of each year for certain RTE cost items that are beyond the company's control. The difference between the revenues actually received by RTE and the ex-post authorised revenue is registered in the CRCP⁽¹⁾ income and expenses adjustment account and influences the annual revision of the tariff at 1 August each year, set by decision of the CRE. If the revenues are below the authorised level, the tariff is raised to compensate for the shortfall; otherwise, it is decreased. If a tariff increase is not enough to cover the differential, the residual shortfall is carried over to be covered the following year.

This explains the tariff increase at 1 August 2019, set by a CRE decision of 6 June 2019 at +2.16% for the TURPE HTB tariff, comprising:

- 1.61% for inflation (from the index published by the Insee national statistics office);
- 0.55% for clearance of the CRCP.

Regarding the financial returns on RTE assets, as stated earlier these correspond to the product of the regulated asset base, estimated at €14,313 million at 1 January 2019, and the nominal pre-tax weighted average cost of capital applicable for the TURPE 5

period (i.e. 6.125% for the period 2017-2020, after 7.25% for the period 2013-2016).

Several factors will have an effect on the level of the next network access tariff, TURPE 6. The financial context of low and even negative interest rates will affect the WACC and a whole new approach is required. Past growth and forecast future growth in investments is creating a new context. Support for the energy transition, rising maintenance needs for an ageing network, modernisation of that network and the operating instruments, and the changes begun under the corporate mission statement mean that additional resources are needed. The downturn observed in recent years in with drawals from the transmission network is expected to continue. As a result of all these factors, plus the regulator's close scrutiny of rises in the electricity tariff, discussions about the next tariff will require particular attention, with careful consideration of RTE's financial balance, and its ability to rise to the challenges of its public service mission.

Risk control procedures

RTE is working on adapting its operating methods and response times to make them more streamlined and less costly. The company is in constant liaison with the regulator over the question of the desired major principles for the TURPE 6 tariff, and the two parties are working together constructively to prepare the tariff structure.

A prospective analysis of the network's development over a fifteen-year horizon was published on 17 September (the Ten-Year Network Development Plan, see section 2.5 "Significant events of 2019") detailing the network's rising investment and maintenance needs. In general, RTE's teams make every effort to meet the CRE's demands, sharing and explaining their needs and difficulties, so that the working relationship is founded on conscientiousness and trust. They are also actively working on preparations for the next tariff that will come into force in 2021. On 20 February 2019, the CRE launched a public consultation about the framework for the tariff regulation of gas and electricity TSOs. Before the summer, another public consultation was launched about the structure of the next electricity network access tariffs, and finally a third consultation was held in October about the quality of service by electricity TSOs.

Further public consultations will take place in 2020 to consider details of the structure of the TURPE 6 tariff, aspects specific to the regulation framework

(1) *Compte de régulation des charges et des produits.*

for electricity transmission, and questions relating to RTE's tariff level. The initial TURPE 6 tariff file expressing RTE's requirements in terms of costs to be covered for the period 2021-2024 is to be sent to the CRE by 31 March 2020, with an update to follow in June 2020. The CRE plans to conduct audits as it did for the TURPE 5 preparations, and RTE is preparing for this by developing its explanation and understanding of the period 2017-2019 and arguments supporting the forecasts for the period 2021-2024.

The bond issue of September 2019 (cf section 2.5 "Significant events of 2019") is evidence of investors' confidence in RTE's ability to maintain financial equilibrium in the long term, thanks to France's strong and stable regulation.

● 3.2.2.8 Changes in European laws with consequences for RTE's structure or missions

Description of the risk

RTE is an exception among European TSOs due to its "all-round" model with extensive missions assigned by the French Energy Code (*Code de l'énergie*), and the company's integrated structure. This corporate model is more effective because it fosters synergies between the different business functions involved in electricity transmission. The missions are performed across the entire value chain, whereas other TSOs split the role between different entities. This unusual model and the specificities of the French electricity market frequently face challenges that go beyond the traditional distrust of (even regulated) monopolies.

Changes in the legal framework could be a risk for RTE if they scaled down or restricted its missions, and thus its efficiency. Harmonisations or new TSO models are a possibility in the near future, but in the shorter term RTE must be attentive to ongoing transitions, particularly for the transposition and implementation of European directives (the "Clean energy for all Europeans" package).

Risk control procedures

RTE is drawing on its recognised expertise to position itself as a source of ideas and innovation to avoid uncontrolled change that would affect the network's performance and potentially its safety. In conjunction with other European TSOs, RTE is engaged in continuous actions targeting European institutions, electricity market actors and stakeholders. These actions have demonstrated their effectiveness, particularly in revision of the initially proposed definition of regional operational centres in a European network, the decision to drop the plan to shorten the TSO's operating window (the time after market closure when only the TSO can decide on action to manage the electricity system), and the compromise proposed on the question of load-shedding.

Negotiations between the European Parliament, the Council of Ministers and the European Commission led to adoption of the "Clean energy for all Europeans" package, or "Clean Energy Package", in 2019. This package is an important step forward in consolidation of the European energy model. It retains RTE's integrated TSO model and the European electricity markets model, and strengthens European coordination by setting up regional cooperation centres, broadening the role played by Coreso. The relevant measures must be transposed into national laws by 2021. RTE is strongly committed to supporting this transposition, taking care to guarantee safety in operation of the French and European electricity systems.

Through its integrated model, RTE is facilitating more widespread load-shedding by providing information for public decision-making, implementing the harmonisation changes decided by Europe (notably concerning network codes) and providing support for actors adapting to the changes.

● 3.2.2.9 Social crisis or lack of internal cohesion entailing media consequences

Name of risk	Description of the risk	Related policies (for non-financial risks)	Related performance indicators (for non-financial risks)
Social crisis or lack of internal cohesion entailing media consequences	The external environment remains sensitive and could lead to obstructions with an impact on RTE's organisation, finance or reputation	Agreement on social dialogue and employee representation	Employee pride score

Description of the risk

Given the transformations RTE must achieve to evolve along with the profoundly changing environment, adherence from employees and social stakeholders is necessary. RTE has always considered social dialogue a key priority, and it must remain a priority, especially in a context of rapid change. The environment is still sensitive to unpredictable matters such as France's national pension reforms, which could lead to obstructions affecting RTE's organisation, employees, finances and reputation.

CSR dimension of the risk

Social climate and the quality of the social climate form an essential dimension of RTE's non-financial performance. Any effects of major industrial action at RTE could have significant societal repercussions.

Risk control procedures

Gradual internalisation by employees of the content of the corporate mission statement has been furthered by a large number of participative information and communication campaigns at all levels and in all regions. In the current implementation phase, a collaborative platform was opened on 1 October 2019.

However, managing change is always a sensitive matter, and many developments will be introduced progressively, until at least 2025. Although 2019 was a sensitive year for social affairs (purchasing power, pension reforms, reform of employee representation bodies, etc.), a wage agreement was signed with union bodies (CFE, CFDT, FO) and the company's strategic priorities were presented to the Central Works Committee and received a positive opinion. In-house information and education procedures will be continued and possibly reinforced, and RTE will carry on involving employees in its transformation.

The positioning of its managers as vectors for promoting change to the teams is reaffirmed through sets of management fundamentals and clear communication of the expected behavioural skills. Close work with employee representatives at all levels of the company will continue: in 2019, this resulted in signature of an agreement on social dialogue and employee representation.

Results and performance

● Quantitative and qualitative results in 2019

Details of actions to promote social dialogue and the associated results are provided in section 4.6.3 "Encouraging social dialogue". Through well-managed, good-quality social dialogue, RTE is meeting its declaration of non-financial performance requirements for labour relations.

● Key indicator of RTE's performance in relation to this risk

The annual "social barometer" survey monitors employee motivation. The "employee pride score" indicator reflects the social impact of activities performed at RTE.

Indicator relating to the "social" risk	2018	2019	Target for 2021
Employee pride score	84%	87%	88%

The score for employees confidence in the future was 69% in 2019, up by 5 points from 2018.

● **3.2.2.10 Externally-set objectives affecting connections and network development.**

Name of risk	Description of the risk	Related policies (for non-financial risks)	Related performance indicators (for non-financial risks)
Externally-set objectives affecting connections and network development	A decline in RTE's competitiveness on connection and network development activities could have negative consequences for the company's reputation, finance and organisation	Network development policies	Renewable energy power connected to the network

Description of the risk

The French Government has set ambitious objectives for the energy transition in its multi-year energy programme. These objectives will require transformation of the electricity infrastructure to accommodate connection of onshore and offshore renewable energies. In its ten-year network development plan extending to 2035, RTE sets out the issues involved in connecting these energies in a reasonable time at a reasonable cost, and also the need for renovation of the ageing existing infrastructure. The dynamics of the energy transition and the required changes to the infrastructure represent a risk for RTE and its ecosystem in terms of competitiveness and completion capacity if projects have low acceptability.

Two main measures are central to this competitiveness risk:

- regional renewable energy connection (S3RenR) plans, drawn up under RTE's responsibility by law since 2010 in conjunction with distribution network operators, so as to promote development of renewable energy generation by sharing infrastructures;
- the series of tender offers for new offshore wind farms: France's hydrocarbons law stipulates that RTE must bear all expenses for offshore connections and be the entity in charge of the whole connection operation.

CSR dimension of the risk

To rise to the challenge of the energy and ecological transition, network connection or development projects must be successfully completed. The ten-year network development plan cannot be applied to the detriment of the environment, and many local consultation procedures will be required. RTE's non-financial performance is linked to its capacity to meet the large number of societal and environmental demands.

Faster connection of renewable energies will speed up the energy transition towards a lower-consumption, carbon-free society.

Risk control procedures

RTE pays particular attention to honouring the deadlines set for customer connections and network expansions. In late 2018, a working party identified areas for improvement in order to propose the best possible timing for every request, and support applicants with the formalities involved.

The ten-year network development plan has been prepared in collaboration with actors from the electricity sector, and identifies the five aspects of network development that underpin attainment of the energy transition goals while maintaining service quality. The plan confirms that the network infrastructure is still currently the most economic channel for sharing different types of electricity generation.

RTE has joined France Énergies Marines, France's national institute for research on renewable marine energies for the energy transition, to address the questions raised by projects associated with the first tenders, and also to encourage the emergence of new solutions which are needed to develop new types of energy (dynamic cables), bring costs down (shared platforms) and install facilities in particularly

problematic zones (areas with strong currents, required cable protection, stability calculations, etc.). RTE is facing increasing challenges to its core business activity, but recognition of its expertise, analyses and pivotal role in operation of the electricity system is steadily growing (the adequacy report scenarios were included in the debates for the multi-year annual programme, and also in the section of the French Essoc law of August 2018 (law for a State serving a society of trust) that concerns offshore connections to the electricity transmission network.

RTE is negotiating with industrial actors and other stakeholders to speed up the construction and diversification process for offshore platforms in more com-

plex marine environments than the seabeds of the North sea and the Baltic sea, where the first European experiments took place

The technical standards published by RTE set out the development and connection methods to be applied for successful rollout of new installations

Results and performance

● Quantitative and qualitative results in 2019

Detailed information is provided in section 4.2 “Integrating the latest technological trends to introduce innovative solutions”.

● Key indicator of RTE's performance in relation to this risk

The indicator that represents RTE's contribution to a successful energy transition and faster connection of renewable energies is as follows:

Indicator relating to the “Externally-set objectives affecting network connection and development” risk

	2017	2018	2019	Target for 2030
Renewable energy power connected to the HTA and HTB networks	44,569 MW	46,639 MW	48,663 MW	40% of renewable energy in France's electricity mix

HTB very high-voltage network was 25,872 MW at end-2019.

● 3.2.2.11 Activities and networks ill-adapted to climate change

Name of risk	Description of the risk	Related policies (for non-financial risks)	Related performance indicators (for non-financial risks)
Activities and networks ill-adapted to climate change	RTE is exposed to unpredictable weather events and will be affected by the accentuation of certain weather phenomena as a result of climate change	Mechanical reinforcement policy (section on responding to weather events) Environmental policy	Equivalent outage time (including outages caused by weather events)

Description of the risk

RTE's activities and infrastructure are exposed to unforeseeable weather events and phenomena that are becoming more serious as a result of climate change. The greater number, duration and intensity of heatwaves, the increase in urban flooding, and other weather events are expected to have an impact on all the following between now and 2035:

- infrastructures (very high-voltage installations, telecommunications equipment, etc.);
- continuity of supply;
- electricity market activity, particularly regarding the balance between production and consumption;
- real estate assets;
- and the organisation of teams and work.

Climate dysfunctions interfere with the technical capacities of network components (underground cables, equipment that needs a normal heat range to work properly) and affect energy producers and consumers, but can also cause disturbances affecting buildings (malfunctions) or the organisation of work (e.g. transport problems or pandemics).

All these climate change effects require actions to reduce the environmental impact of business activity in general, and RTE is continuing its efforts to mitigate those impacts.

CSR dimension of the risk

RTE's financial and non-financial performance is directly related to the infrastructure's ability to withstand unpredictable weather events (essentially heatwaves and floods). It is more necessary than ever to strengthen its resilience in order to limit the social, societal and environmental consequences of incidents that may affect the network.

Risk control procedures

● *Adapting to the consequences of climate change*

RTE must prepare for adaptation to the consequences of climate change by prioritising action to address the issue, particularly regarding changes to the long-term infrastructure.

Work is currently in process to identify the impacts of climate change by 2050. RTE is skilled at making adjustments to equipment and network development, and adaptation to climate change could involve reorganisation of priorities on these long-term technical dimensions. This project began this year, and is led by the Climate officer who has been appointed to coordinate RTE's various actions in response to climate change.

The stormproofing policy aims to define the minimum resilience level for the network, applying the necessary resources to meet the target of less than five days of network outage.

A policy designed to build on experience with past climate events describes the corrective actions applicable.

For power cuts, the network safety and secure network development policies are due to be revised based on the analyses currently in process.

Results and performance

● *Quantitative and qualitative results in 2019*

Detailed information about RTE's action against climate change is provided in section 4.4.1 "Action against climate change"

● *Key indicators of RTE's performance in relation to this risk*

The impacts of weather events on the network are measured by the "Equivalent outage time caused by weather events" indicator

Indicators relating to the "climate change" risk	2017	2018	2019	Target for 2021
Equivalent outage time (including exceptional events)	1'47"	2'59"	6'6"	
Equivalent outage time caused by weather events (including exceptional events)	32" (30%)	51" (28%)	3'14" (53%)	
Equivalent outage time (excluding exceptional events)	1'27"	2'59"	3'25"	≤2'48" (TURPE 5)

● *3.2.2.12 Continuity of critical activities*

Description of the risk

Continuity of critical activities is a key concern for all companies, and especially important for RTE. Certain activities are subject to disruption caused by human error, technical issues or external attack, and this would have significant operational repercussions for RTE and entail a risk for the company's image. The challenge is how to ensure critical activities can continue in the event of severe disturbances

Risk control procedures

RTE is preparing its crisis responses, prioritising action to be taken by non-safety functions by identifying the critical activities concerned and establishing business continuity plans.

For more secure execution of critical activities, RTE regularly reviews and improves monitoring of those activities: work on summaries, priorities and monitoring continued during 2019.

Business resumption plans are also defined and tested on all critical applications, in order to limit the duration of interruptions.

Since 2014, the business continuity plan-business resumption plan procedure has been organised between the functions, under the leadership of the

information system and telecoms department. The required documents have been produced, taking care to ensure compatibility between the two types of plan. The business continuity plans for all functions identified as having critical activities are approved and comply with the standards set out in the procedure. These plans are now operational for the Operations, Customers and Markets, European Affairs, Finance and Purchasing functions.

● 3.2.2.13 Environmental damage: pollution, waste, biodiversity

Name of risk	Description of the risk	Related policies (for non-financial risks)	Related performance indicators (for non-financial risks)
Environmental damage: pollution, waste, biodiversity	When an incident happens, the activity and employees of RTE, its customers and other third parties may be concerned by environmental emergencies	Environmental policy	Biodiversity-friendly sites Percentage of "zero-phyto" sites Volume of SF ₆ leaks Waste recycling rate

Description of the risk

RTE, with its activities all over French territory, must take care to control environmental impacts. The environmental risk covers the impacts on natural areas, biodiversity, the countryside, resources and pollution of water and land. If an incident occurs, environmental emergencies may concern RTE's business or employees, customers or other third parties.

CSR dimension of the risk

By nature, this risk encompasses a direct environmental risk, and control of that risk contributes to RTE's non-financial performance.

Risk control procedures

● ISO 14001 Certification

In addition to continuous compliance with the regulations (water and soil quality, oils, PCBs, etc.), RTE underwent an audit in 2019 for renewal of its ISO 14001 certification for the next three years. This audit noted the progress made by RTE, and no deviation from the standard was observed. The broad range of ISO 14001 actions includes preventive action to control environmental risks, particularly relating to pollution, waste management and protection of biodiversity, and actions to mitigate climate change.

Campaigns are also under way to improve energy efficiency in buildings, and encourage lower energy consumption in employees' movements. In 2019, the policy to control the use of phytosanitary products was launched, with the objective of limiting use of weedkillers and similar products.

RTE is also acting to reduce its own emissions, through its action plans to reduce SF₆ discharge and improve energy efficiency.

Eco-design and biomimicry approaches will also help to reduce RTE's ecological footprint, by taking into account the lifecycle of the materials used, or taking inspiration from nature to devise more environmentally-friendly solutions.

All of the environmental impacts of RTE's activities are monitored in connection with its ISO 14001 certification.

A number of policies are applied to monitor and reduce various types of pollution (in water, soil, air):

- prevention and management of oil leaks from underground links;
- replacement of oil-filled cables;
- management of greenhouse gas leaks (SF₆);
- maintenance and layout of substation vegetation;
- management of equipment containing PCBs (polychlorobiphenyls).

Results and performance

● Quantitative and qualitative results in 2019

Further details are provided in section 4.4 “Fighting climate change, protecting biodiversity and resources”.

Key indicators of RTE's performance in relation to this risk:

		2017	2018	2019	Target
Biodiversity-friendly sites	ha of land made biodiversity-friendly	933 ha	1,043 ha	1,161 ha	Double the area between 2017 and 2021
	office sites with the “Jardin de Noé”, “Refuge LPO” or equivalent label	2 sites including 1 with the “Jardin de Noé” label	3 sites including 2 with the “Jardin de Noé” label	8 sites including 6 with the “Jardin de Noé” label	15 sites with the “Jardin de Noé” label by 2020
“Zero-phyto” sites	office sites	-	100%	100%	100% since 31 December 2018
	new substations	-	-	100%	100% of substations built since 2019
	existing substations	-	14%	18%	65% in 2022
Volume of SF ₆ leaks	tonnes (total leaks)	5.7 t	5.9 t	4.9 t	<5 t
Recycling rate for waste produced by RTE		72%	83%	85.1%	>75%

3.3 FINANCIAL RISKS

3.3.1 Control of financial risks

Operations on the financial markets expose RTE to a range of risks:

- interest rate risk: the risk associated with future changes in interest rates for the holder of a fixed-rate or floating-rate receivable or debt;
- liquidity risk: the risk that the funds necessary to honour commitments will not be available;
- counterparty risk: the risk for a creditor that his debtor will be unable to repay some or all of his debt when it matures.

The general cash management policy is covered by an annual framework that lists the authorised financial instruments and sets out the rules and constraints that must be respected. This framework is defined by the company managers in charge of the finance division. It includes a list of authorised counterparties, with assigned commitment limits by amount and type of financial instrument. The general cash management policy takes account of developments on the financial markets, and has had to adapt to an environment of low and even negative interest rates.

Interest rate risk: RTE is exposed to an interest rate risk on its financial indebtedness. The company's sensitivity to changes in rates, assessed on the basis of probable scenarios, is as follows:

- sensitivity of financial expenses: a change in interest rates has little effect on the financial expenses on long-term debt (with residual maturity over one year) since 93% of the long-term gross debt bears interest at fixed rates at 31 December 2019;
- sensitivity of financial indebtedness: a 1% change in interest rates would cause an opposite change of 10.1% or approximately €1,162 million in the discounted (marked-to-market) value of debt at 31 December 2019.

Average maturity for the Group's debt at 31 December 2019 was 10.2 years and the average interest rate was 1.84%.

On 24 May 2019, the rating agency Standard & Poor's confirmed RTE's long-term rating of A, with a stable outlook.

Liquidity risk: low market liquidity can affect RTE's access to financing sources, making the cost of resources excessive.

RTE seeks to control this risk through a policy of diversifying its financing sources, by constant participation in the financial markets and by seeking to preserve or improve its image and credit rating on the capital markets. RTE makes every effort to optimise the timing of its operations.

To address liquidity risks, RTE manages a short-term securities portfolio mainly comprising negotiable debt instruments for which a liquid market exists, which are rapidly realisable to meet liquidity needs, and shares in monetary investment funds.

At 31 December 2019, the amount available in the very short term from RTE's syndicated credit line was €1.5 billion. This €1.5 billion syndicated credit line was agreed in June 2016 for a five-year period, with two possible one-year extensions. The first extension option was exercised in June 2017. The second was exercised in June 2018, deferring the maturity of this credit line to June 2023.

RTE also has a Negotiable European Commercial Paper issue programme for a maximum €1.5 billion, which it can use to meet its own liquidity needs. At 31 December 2019, the Negotiable European Commercial Paper issued amounted to €400.5 million.

During the second quarter of 2019, RTE revised the AMF-approved documentation for its Euro Medium Term Note Programme. The ceiling for the EMTN Programme is €10 billion.

At 31 December 2019, neither RTE nor any of its subsidiaries was in default on any borrowing.

Counterparty risk: counterparty risk is defined as the total loss that RTE would sustain on its business and market transactions if a counterparty defaulted and failed to perform its contractual obligations. The main potential counterparty risks for RTE concern cash and cash equivalents, trade receivables, negotiable debt instruments, short-term investments and derivative financial instruments. The cash and financing operation risk is approached through rules set out in a framework containing the following main principles:

- financial transactions can only be undertaken with authorised counterparties for which quantified limits have been set;
- only agency-rated counterparties are authorised, and they must have a minimum BBB rating with at least a stable outlook;
- a limit has been set for the portion of total investments undertaken with counterparties rated BBB+ and BBB;
- sectorial diversification is required for cash investments: in any given sector (apart from the banking sector), cash investments must not exceed 30% of all short-term investments.

In 2019, RTE continued its counterparty risk management measures introduced in previous years, namely:

- oversight of the short-term investment policy, which must follow the cash cycle as closely as possible to limit the level of such investments and thus the associated counterparty risk;
- a search for better-quality counterparties, to strengthen the average rating of the securities portfolio.

The department in charge of cash and financing has a financial risk control function that regularly oversees all the risks inherent to financial activities. It also ensures that RTE complies with the rules and constraints defined in the framework, through daily reporting of the principal risk indicators to the firm's managers in charge of the finance division.

If a risk limit is exceeded, an alert procedure is set in motion, involving notification of the company managers in charge of the finance division, information about how the situation was handled, and where relevant, proposal of corrective action.

In 2019, the "counterparty risk" committee was renamed the "financial risk" committee and its remit was broadened to include additional recurring themes such as:

- questions related to assessment of the integrity of current or potential counterparties engaged in contractual relations with RTE, following application of article 17 of the "Sapin 2" law;
- examination of situations in which RTE would be in breach of its contractual obligations to counterparties; provisions may be established to cover such risks.

From time to time, counterparty risk analysis also takes other aspects of RTE's activities into consideration (e.g. offshore connection, interruptible loads, etc.).

3.3.2 Action against tax avoidance

In application of article L. 225-102-1 of the French Commercial code (*Code de commerce*), companies must report on the sensitivity of their situation as regards tax avoidance.

Tax avoidance consists of deliberately transferring financial flows that could be taxable in the company's principal country of location to another state with more attractive tax legislation.

The team in charge of tax matters at the RTE Group makes sure that no such tax avoidance practices exist at RTE by checking all financial flows. This is facilitated by the fact that this team is part of the Accounting department.

All taxes are paid on French national territory, and there are no financial flows in any subsidiary located in a country with favourable tax laws that could be interpreted as a source of tax avoidance.

Similarly, all financial investments (investment funds) are made by financial establishments located in France.

3.3.3 Preparation and processing of financial and accounting information

3.3.3.1 Organisation and role of the finance division

The finance division contributes to control of RTE's activities, notably through the following missions:

Performance oversight and budget reporting

- oversight of the budget process and cycles (budget, three annual budget revisions, and the medium-term plan);
- summarising the budget process and the associated choices;
- contributing to performance oversight, by monitoring budget resources per entity;
- contributing to application of the budget through general performance reviews in divisions;
- ensuring key financial balances, notably in tariff discussions with the regulator.

The budget, the budget updates and the medium-term plan are examined by the Economic Oversight and Audit Committee, and by the Supervisory Board.

Accounting and tax

- producing the individual financial statements of RTE and some of its subsidiaries, and the Group's consolidated financial statements, in compliance with the standards applicable;
- meeting tax obligations (declarations, monitoring and settling the taxes payable by RTE);
- providing advice to all RTE entities and subsidiaries on accounting and tax matters;
- documenting the accounting and tax doctrine and standards and maintaining the associated databases;
- taking preventive action against fraud across its scope of responsibility.

Finance and cash

- financing RTE's operations;
- determining RTE's financing requirements;
- managing cash investments.

Insurance and risk control

- implementing an insurance programme to protect the company's assets;
- contributing to the second line of control over the company's activities thanks to implementation of internal control procedures and management of financial and accounting risks.

● 3.3.3.2 Preparation and control of accounting information

Organisation of establishment of accounting information

RTE's accounting and tax department is in charge of establishing RTE's individual financial statements, the financial statements of certain subsidiaries, and the Group's consolidated financial statements.

The individual financial statements are prepared by teams corresponding to each major area of the accounting cycle (fixed assets, purchases, sales, taxes, etc.). This organisation makes it possible to oversee competences efficiently and thus ensure reliability in accounting and tax data.

The closing of the financial statements is managed by a general team which is in charge of RTE's general accounting.

For certain RTE subsidiaries, the financial statements are established by the team in charge of the relevant entities' transactional accounts.

The consolidated financial statements are established using data recorded by the general and subsidiaries team.

RTE's individual financial statements and the Group's consolidated financial statements are finalised annually by the Executive Board.

They are reviewed every half-year by the Economic Oversight and Audit Committee, and by the Supervisory Board.

Control of financial information

The Head of accounting is responsible for proper operation of internal procedures which ensure reliability in the Group's accounting and tax data. He/She reports to the Head of finance.

A tax and accounting internal control team oversees the entire system of tax and accounting controls in the upstream operational processes (evaluating the accounting quality of triggering events) and the accounting processes for preparation of the financial statements (evaluation of downstream accounting production).

For the purposes of this tax and accounting internal control activity, the Accounting department requires the operational functions to proceed to controls for which they are responsible.

The tax and accounting internal control is part of RTE's internal control process that is described below in section 3.4 "Internal control procedures".

The accounting production teams carry out first-level permanent controls of the operations for which they are responsible, and conduct monthly analyses.

Closing instructions are sent out for the half-year and annual financial statements, presenting the steps to be taken, the required deliverables and the deadlines for the entities concerned by the accounting processes.

To ensure reliability in the financial statements and prepare for the half-year and annual closings, the department has set up a monthly reporting process, and a "soft closing" procedure at 31 May and 30 November each year. During these procedures, the principal options chosen for the closing and the major transactions of the period are analysed.

This soft-closing procedure is part of the annual audit process applied by RTE's statutory auditors.

● 3.3.3.3 Control of financial information

In RTE's internal control policy, each entity in the finance division prepares an internal control supervision plan in liaison with its risk analysis process. The risk control unit verifies the adequacy of the systems in place.

For example, a control system is used to make sure that no user has incompatible authorisations as regards segregation of duties; data analysis tools are used for certain business processes (mainly tax, payroll, expense reports and purchases) to identify any potential anomalies and correct them where relevant.

Analyses are also conducted at least annually with the divisions to identify and address the causes of any variances noted between real and forecast figures for major income and expense items, in order to have constant confirmation of the reliability of financial budget estimates.

Counterparty risk management is presented above in the paragraph entitled "Control of financial risks".

3.4 INTERNAL CONTROL PROCEDURES

The internal control procedures are designed to give management reasonable assurance that the principal risks to which RTE is exposed are well-controlled, in order to achieve the company's long-term performance targets. The procedures are overseen by the audit and risk division, which proposes the associated methods and tools and leads a network of internal control officers and function managers. Internal control of finance and purchasing activities, which is a component of internal control, draws directly on a dedicated unit (the Risk Control Unit) in the finance and purchases division.

These procedures concern all activities, and are organised on the principle of three lines of control.

The first line of control is performed by operational staff and their managers and concerns all actions by which the operational employees themselves make sure their task has been properly completed. Each entity manager has a set of internal control standards (RTE's internal control guide) to help with internal control work. This guide, prepared with input from the cross-functional activities, is regularly updated. The 2019 version introduces new requirements such as respect of the duty of vigilance. It presents the key stages of the process to be applied by an entity's principal activities, supported by the applicable guidelines and best practices.

The second line of control is performed by the function managements, with the aim of structuring and maintaining the business control procedures by:

- assisting operational staff in identification and assessment of the main risks in their work;
- proposing policies and procedures for each function;

- contributing with operational staff to designing the most relevant controls, particularly for the "function monitoring priorities", all grouped into a "monitoring plan - internal control";
- developing best practices and sharing experience (benchmarks);
- observing and reporting on the actual operation of processes in a specific function report.

In early 2019, the audit and risk division met with all RTE's function managers to remind them of the connection between risk control and internal control, and the importance of having targeted function-specific controls for the most critical risks in each function. The percentage of controls relating to major and function risks increased from 31% in 2018 to 48% in 2019.

In accordance with the AMF's recommendation, RTE assesses its internal control procedures every year in an annual report written for the Executive Committee, and presented to the Economic Oversight and Audit Committee. This document reports on operation of the internal control, states areas for improvement the following year, and sheds light on how the principal activities are controlled.

The French institute of audit and internal control (Ifaci⁽¹⁾) conducted a diagnosis of RTE's internal control procedures in 2019 and concluded that they were generally good. However, it can still mature further and the Ifaci made recommendations to bring RTE's internal control closer to COSO standards. RTE took this as a basis to define an action plan for the control environment, skill development, risk assessment and management of control procedures.

In the third line of control, the internal audit team is charge of periodical controls in order to verify that the risk management, internal control and operational business control are working correctly.

The audit team refers to the International Professional Practices Framework (IPPF) for its methodological approach. The objectives and resources were confirmed by the Chairman of the Supervisory Board through signature of an updated Audit Charter in 2019.

The results of internal audits assess risk controls, effectiveness of control resources, and the capacity to meet the targets set for the activity being audited. The principal conclusions are presented to the Executive Committee, which validates recommendations for improvement before they are implemented.

(1) Institut français de l'audit et du contrôle interne.

Recommendations are implemented through action plans by the divisions concerned. The internal audit team monitors the application of action plans, to ensure that the risk control process are duly improved.

The Chairman of the Executive Board fixes an annual programme of audits coherent with the company's major risks and sends it to the economic supervision and Audit Committee. The audit and risk division is in charge of executing this programme.

3.5 INSURANCE

RTE covers the financial consequences of the risk of accidental damage to or by property or people by adequate insurance programmes that are managed by the Insurance Unit, which is part of the finance division. The insurance is provided by top-quality insurers.

The insurance policies subscribed cover the following risks:

- damage to property (industrial and office buildings);
- transport;
- general civil liability;
- civil liability for environmental damage;
- liability of key executives and management;
- aeronautical civil liability;
- damage to certain aircraft (the Airtelis fleet and drones);
- individual accidents and repatriation assistance for personnel on business assignments outside France.

These policies also cover the risks of RTE's subsidiaries.

Dedicated insurance programmes exist for major infrastructure projects, particularly connections of offshore wind farms and network interconnections. These programmes are subscribed in conjunction with RTE's partners and project development entities, and help to reinforce project feasibility.

The insurance programmes are subscribed by RTE as the project leader on behalf of all participants in the project, through the intermediary of specialist brokers selected through a tender process.

They are set up for the duration of projects, and are designed to cover:

- risks of material damage to installations under construction, from the start of work until formal approval of the completed project, and by extension, the manufacturers' contractual guarantee periods;
- RTE's and its contractors' civil liability for damage caused by the project work to third parties or the environment.

RTE makes every effort to optimise the complementarity between project insurance programmes and the Group's insurance programmes so as to have the highest level of uniform cover at the best cost.

A prevention and protection policy is implemented for industrial sites in order to reduce the scale and frequency of risks of accidental fire or explosions in critical industrial installations.

In December 2019, a formal fire prevention plan for electricity substations and buildings was established and validated. It will be applied from 2020.

3.6 VIGILANCE PLAN

RTE's vigilance plan is drawn up in compliance with article L. 225-102-4 of the French Commercial Code (*Code de commerce*), which derives from law 2017-399 of 27 March 2017 on the duty of vigilance by parent companies and outsourcing firms.

It is developed by a steering committee consisting of representatives of the divisions concerned at RTE (legal division, human resources division, purchasing division, sustainable development division, audit and risk division).

The plan includes reasonable vigilance measures intended to identify the risks of, and prevent, serious breaches of human rights and fundamental freedoms, or damage to the health and safety of individuals or to the environment resulting from RTE's activities, or from the activities of contractors or suppliers with which RTE has an established business relationship.

3.6.1 Risks associated with the vigilance plan

An analysis is performed annually to identify and assess risks of harm to human rights or the environment and safety across the scope of RTE⁽¹⁾ and its contractors and suppliers. The great majority of risks identified are already included in the divisions' major risk mapping, and are subject to mitigation measures headed by the entities concerned. As in the other risk mapping arrangements, these risks are rated on a scale of one to four, measuring their likelihood of occurrence, the scale of the consequences if they do occur, and the degree to which they are controllable by RTE. Two exercises were conducted, one covering RTE, the other covering contractors and suppliers, in order to identify the most appropriate action to limit these risks in the short, medium and long term over both scopes.

In order of importance, the priority risks identified in this mapping concern:

- safety of employees and contractors;
- environment and climate;
- human rights.

3.6.2 Vigilance and monitoring measures

• 3.6.2.1 Vigilance and monitoring measures concerning suppliers' activities

The vigilance measures applied by RTE in respect of suppliers are among the commitments made by the company in its Responsible Purchasing Charter signed in 2016 by François Brottes, Chairman of the Executive Board, and Valérie Champagne, Deputy Managing Director in charge of, Finance and Purchases. They emphasise that this charter "reflects our ambition to pursue and reinforce integration of social, environmental and economic issues into our activities and our interactions with suppliers, for better performance in both the present and the future". These values were reaffirmed in January 2019 when RTE obtained the "Responsible Supplier Relations and Purchasing" label, an exacting external award given by the French authorities to distinguish companies whose practices have demonstrated long-term, well-balanced relations with their suppliers.

In 2019, RTE's purchases (excluding system services and purchases of electricity to cover network losses) reached €1,580 million and concerned around 9,500 suppliers.

The vigilance measures concerning suppliers' activities are described in detail below.

HEALTH AND SAFETY			
	Risk mitigation action	Indicators	Results in 2019
Electricity risk	Introduction of a pass for access to RTE's installation (the High-Voltage Pass), compulsory for all suppliers working on sites. This pass is issued after in-person training concerning specific site risks and successful completion of an online questionnaire	Number of High-Voltage Passes issued by RTE since the Pass was first introduced in 2017	8,075 High-Voltage Passes issued
Generic risk	Existence of a procedure allowing suppliers with master contracts to alert RTE when there the workload is a problem in view of capacities. Under this procedure a joint solution is sought, which can go as far as adjusting the project	Number of project adjustment decisions made during the year following alerts from suppliers (e.g. delaying work on the project)	No project adjustment decisions were made under this alert procedure
Generic risk	Rollout of RTE's Safety Impetus programme to suppliers: - spreading the new policy for health and safety and quality of life in the workplace, and the "rules that save lives"; - holding Safety-themed meetings between RTE's management and its principal work contractors	Annual number of safety-themed meetings with suppliers	13 safety meetings held with our principal suppliers
Generic risk	On-site supplier audits to verify compliance with contractual commitments, particularly concerning safety	Annual number of audits performed and a typology of deficiencies observed (safety, etc.)	56 audits performed, including 3 in plants outside France (Germany, Italy, Slovakia), and 85 safety deficiencies noted (including 5 points of non-compliance)
Generic risk	Contracts are awarded on a best-bid basis, referring to selected safety criteria weighted according to the challenges of the contract	Annual percentage of RTE contracts awarded on a best-bid basis by reference to safety criteria	38%
Generic risk	Dynamic contract share management: on each contract anniversary date, a larger share of the project contract is awarded to the firms with the best record, especially on safety	Annual percentage of additional contract shares allocated under the dynamic management process	<p>1. Master contract for underground links Of 12 contractors: - 1 was not awarded any additional contract share; - 11 were awarded an additional share of 2%-5% of their initial share</p> <p>2. Master contract for overhead links Of 6 contractors: - none were not awarded any additional contract share; - all 6 were awarded an additional share of 3%-13% of their initial share</p>

ENVIRONMENT			
	Risk mitigation action	Indicators	Results in 2019
Damage to biodiversity, production of waste	Development of eco-sites by suppliers for better management and recycling of waste	Annual number of eco-sites created	9 eco-sites in 2019
Damage to the climate	Estimating electricity losses and greenhouse gas emissions when making purchases of equipment that produce greenhouse gas emissions (transformers)	Annual percentage of transformer contracts that included these criteria	100% of transformer supply contracts
Generic risk	On-site supplier audits to verify compliance with contractual commitments, particularly on environmental matters	Annual number of audits performed and a typology of deficiencies observed (environmental matters, etc.)	56 audits performed, including 3 in plants outside France (Germany, Italy, Slovakia), and 54 deficiencies noted on environmental matters (including 4 points of non-compliance)
Generic risk	Contracts are awarded on a best-bid basis, referring to selected environmental criteria, weighted according to the challenges of the contract	Annual percentage of RTE contracts awarded on a best-bid basis by reference to environmental criteria	48%
Generic risk	Dynamic contract share management: on each contract anniversary date, a larger share of the project contract is awarded to the firms with the best record, especially on environmental matters	Annual percentage of additional contract shares allocated under the dynamic management process	<p>1. Master contract for underground links Of 12 contractors: - 1 was not awarded any additional contract share; - 11 were awarded an additional share of 1%-3% of their initial share</p> <p>2. Master contract for overhead links Of 6 contractors: - none were not awarded any additional contract share; - all 6 were awarded an additional share of 1%-3% of their initial share</p>
HUMAN RIGHTS AND FUNDAMENTAL FREEDOMS			
	Risk mitigation action	Indicators	Results in 2019
Unethical behaviour	Application of a system to assess suppliers' situation with regard to France's "Sapin 2" law	Rollout of a counterparty evaluation system	Notification of a contract awarded to Altares for installation of its system and the initial evaluations

Vigilance measures are evaluated on all aspects of general performance through the supplier assessment procedures, with quantitative and qualitative assessment at regional level for consolidation at national level. Assessments draw on the audits performed, any deviation from standards and any good practices by suppliers. The results are shared at least yearly with suppliers, are used where relevant to support requests for corrective action, and provide a basis for the experience and feedback that is taken into consideration when awarding future contracts.

● **3.6.2.2 Vigilance and monitoring measures concerning RTE's own activities**

Vigilance measures concerning RTE's own activities are detailed above in the description of risks and risk management actions (see section 3.2.2 "Description of risks, control procedures and key indicators"). These measures are evaluated as a part of the monitoring of policies and key performance indicators.

3.6.3 Whistleblowing procedure

The whistleblowing procedure meets the requirements of decree no. 2017-564 of 19 April 2017 concerning procedures for reporting concerns in public-sector or private entities and government administrations. It was attached to RTE's internal regulations after consultation of the employee representation bodies. This procedure aims to prevent not only corruption and influence-peddling, but also crimes and other violations of the law. RTE places a particular emphasis on prevention of harassment (moral harassment, sexual harassment, sexist behaviours and discrimination), which are the subjects of two specific articles in the company's internal regulations. The whistleblowing platform was set up by an external contractor and has been operational since January 2019.

04 — OUR COMMITMENTS TO MEET THE MAJOR CHALLENGES OF A FAST-CHANGING WORLD



4.1 PRESERVING RTE'S INFLUENCE AS A CENTRAL ACTOR AT EUROPEAN LEVEL

4.1.1 Reinforcing cooperation at European level

● *Description of the challenge*

The electricity transmission network in Europe is managed by 43 transmission system operators (TSOs) in 36 countries. France is an important electricity hub in the centre of Europe: 50 of the 423 European interconnections cross its borders.

Regulation of the energy sector is now largely European. Eight network codes⁽¹⁾ have been adopted in the last ten years, and are currently being implemented. In 2019, the fourth "Clean Energy Package" of legislation was formally adopted. It reinforces European energy transition goals for 2030, completes governance of the Energy Union and adapts certain common rules for the internal electricity market.

2019 also saw the election of a new European Parliament and renewal of the European Commission, with new priorities, particularly regarding action against climate change.

The next steps for RTE concerning Europe are implementing the network codes, rolling out the Clean Energy Package in coordination with European partners, and developing innovative new initiatives. RTE must now explain the key role to be played by TSOs for a successful transition to a carbon-free energy system, and their specific missions during the highly sensitive transition phase. Their action needs to be part of a Europe-wide industrial strategy and be supported by European and national decision-makers if it is to achieve continuous adaptation of network infrastructures and guarantee safe, efficient operation of the electricity system.

In view of these challenges, RTE has to work alongside the European institutions on a daily basis, and closer cooperation will be required between TSOs, not only through ENTSO-E (the European Network of Transmission System Operators for Electricity) for regional coordination, but also with each neighbouring country.

● *RTE's actions and commitments*

RTE's key role in European cooperation was illustrated by a certain number of events in 2019.

Hervé Laffaye, one of RTE's Deputy Managing Directors, was elected President of ENTSO-E for a two-year term. An RTE representative was also re-elected as head of ENTSO-E's system development committee.

At the initiative of François Brottes, Chairman of RTE's Executive Board, a "joint declaration" by the managers of 15 European TSOs was prepared ahead of the European elections. This was an opportunity to raise the question of the TSOs' role in the Europe of electricity, explaining their missions and the challenges they face for a successful energy transition.

Besides the work done by RTE's representative office in Brussels to develop close relations with European institutions, RTE is actively involved in a number of European professional forums and associations. For example, it is a member of the European Parliament's European Energy Forum, the Renewable Grid Initiative (RGI) and the European Association for Storage of Energy (EASE), and is a partner of IFRI (the French international relations institute) and Friends of Europe. In 2019, RTE was awarded the RGI Good Practice of the Year award in the Communication and Engagement category for its MOOC (Massive Open Online Course) about the electromagnetic fields around power lines.

During negotiation of the European Clean Energy Package, RTE advised the public authorities directly and through ENTSO-E, providing impact studies on the technical measures relevant to a TSO's activity and liability. The objective was to ensure that the technical realities of the electricity system and its operating reliability were taken into due consideration.

A cross-functional "Europe and internal coordination" project was set up at RTE in early 2019, to coordinate and mobilise all the company's forces engaged in European action. This project is particularly designed to oversee application by the whole company of the Clean Energy Package measures (notably concerning cooperation between TSOs, analysis of bidding zones, allocation of interconnection capacities, future European adequacy studies, etc.).

⁽¹⁾ Prescriptive European technical rules for operation of the European electricity system as regards connection, network operation, market functioning and management of interconnections

4.1.2 Development of interconnections

● *Description of the challenge*

Developing electricity interconnections is one of the pillars of European Union energy policy. Cross-border interconnections underpin the single electricity market and have facilitated a gradual shift from a national to a European approach to generation fleet operation. By helping to optimise the energy complementarities between countries, interconnections make an essential contribution to the inclusion of renewable energies and are a key component of the energy transition.

This European priority is reflected in the target set for each member state: raising its level of interconnection to 10% by 2020 and 15% by 2030.

The ten-year network development plan is based on the aim of doubling France's interconnection capacity in fifteen years, from around 15 GW currently to around 30 GW by 2035. This ambitious target is coherent with European Union and French policy priorities and is combined with the European TYNDP (Ten-Year Network Development Plan) developed by ENTSO-E. To achieve it, interconnections will have to be developed across all of France's borders. Some fifteen projects have been identified for development or reinforcement of interconnections of carrying maturities. Any decision to invest in a new interconnection remains conditional on a socio-economic cost-benefit analysis showing that it would be profitable for the European community.

At national level in France, the energy roadmap also anticipates a strong rise in interconnections. This is reflected in the reinforcement projects on all borders set out in the country's multi-year energy programme. The 2019 generation adequacy report⁽¹⁾ showed that an increase in the network capacity is essential for a good technical and economic balance in the electricity mix as envisaged in the draft multi-year energy programme, i.e. 95% of electricity generated by nuclear plants or from renewable sources.

● *RTE's actions and commitments*

Several European interconnection projects led by RTE saw significant developments during 2019.

In 2019, cable unwinding (around 25 km) and engineering work continued on the Savoy-Piedmont project connecting France and Italy via the Fréjus tunnel. This work crosses the most complex road infrastructures along the entire route (viaducts and the Orelle tunnel). Engineering work, followed by laying of the final kilometres of the link, will be completed by mid-2020. Construction of the converter station near Chambéry also continued, with completion of the engineering work and installation of the power electronics equipment.

Work on the IFA2 interconnection project involved installation and protection of the undersea cables between the French and English coast, marking a first for RTE since construction of the IFA2000 interconnection in 1986. Construction of the converter station at the Tourbe substation in the Caen region on the French side continued in 2019: engineering work was completed, and electric and electronic equipment was installed. Finally, underground cables were laid from the substation to the coast and connected to the undersea cables in 2019. Other significant achievements during the year included finalisation of agreements for operation of the interconnection with National Grid IFA2 and National Grid ESO. Brexit is currently expected to have only a limited effect on the conditions of operation.

Several other projects are currently under examination, particularly the following undersea interconnection projects:

- during 2019, the Bay of Biscay project encountered major unforeseen difficulties (instability in the sea bed was detected, compromising the initial choice of route), leading RTE and its Spanish partner REE to defer the equipment procurement procedure and submission of applications for administrative authorisations. RTE and REE are currently undertaking additional technical studies with a view to proposing an alternative route in the mid-2020;

(1) The 2019 generation adequacy report updates the diagnosis of changes in the supply-demand balance over a five-year horizon, drawing on the latest information and decisions concerning changes in consumption and the generation fleet.

- several steps forward were taken in 2019 for the “Celtic Interconnector” project with EirGrid to create a 575-km electricity interconnection between Brittany in north-west France and Cork in south-west Ireland. In April, the French and Irish regulators approved the joint investment application submitted by RTE and EirGrid. In early October, the European Commission decided to give the project a €530 million grant. In late October, the French Minister for Energy validated the lowest-impact route zone for the project, after a consultation process held by RTE in the first half of 2019, under the authority of France’s national public debate commission.

Finally, 2019 was marked by the CRE’s announcement on 11 July 2019 concerning estimation of the optimal electricity interconnection capacity and the new interconnection projects with the United Kingdom. The CRE concluded that the circumstances did not currently appear favourable for any increases to the France-UK interconnection capacity in addition to the projects already under construction (ElecLink and IFA2). RTE has therefore decided to suspend development projects for new interconnections with the UK for the time being.

4.1.3 Rolling out market mechanisms

• *Description of the challenge*

For optimum operation, the electricity system requires physical infrastructures (high-voltage lines, substations, interconnections with neighbouring countries, etc.) and “coupled” market mechanisms. Electricity supply networks cannot function alone: all actors must be coordinated in real time, and this is achieved through management of the electricity market. In France, that mission is entrusted to RTE, which must make sure that all the actors (energy producers, consumers, traders, etc.) can use the electricity market for electricity purchases/sales or transfer capacity purchases on cross-border interconnection lines in transactions as close to real time as possible.

To consider all the demands of the electricity system, identify the necessary investments and anticipate all possible hazards affecting production and consumption, RTE is introducing mechanisms that refer to different time horizons ranging from a few years ahead to real-time operations.

These national and European market mechanisms contribute to the economic optimisation of electricity supply by sending the best possible signals to encourage investment in generation or load shedding. Similarly, thanks to cross-border infrastructures and implementation of supranational mechanisms for fair, efficient allocation of interconnection capacities, RTE is improving the economy and the overall safety of interconnected European networks.

All these mechanisms are evolving to support the energy transition by incorporating new flexibilities (renewable energies, batteries, etc.) into all mechanisms.

RTE operates under fast-evolving laws and regulations, both national and European. The primary objective is still to build a single market, and work towards that goal began in 1996. Since 2009, RTE and its European partners have been in charge of implementing European network codes and guidelines. They form a body of rules common to all network operators, laying down the principles of electricity system management and international interconnections with reference to market mechanisms. Network operators will ultimately have common methodologies, elaborated jointly by all European TSOs and validated by the regulators.

The Capacity Allocation and Congestion Management (CACM) guideline and the Electricity Balancing Guideline (EB/GL) are two of the principal network codes that derive from the European directives of 2009, and are driving significant changes in market mechanisms.

To create a level playing field for competition, the European Commission decided to continue and accelerate construction of the single market. This led to adoption in 2019 of the “Clean energy for all Europeans” package, or “Clean Energy Package”. Some of the measures in this package are directly applicable, while others need to be transposed into French law. RTE must thus continue to apply European codes, while at the same time implementing the Clean Energy Package.

● *RTE's actions and commitments*

Against the background of the energy transition and the ongoing construction of a single market, RTE continued to cooperate at European level in 2019 with all parties concerned by application of network codes and the Clean Energy Package.

One major milestone for RTE was the implementation of energy exchange liberalisation, with the result that in July 2019 Epex Spot, the historical operator of the French energy exchange, was joined by Nord Pool. Nord Pool's arrival on the French market marked the end of a long-haul project begun in 2015, involving introduction of competition between the energy exchanges. Actors can now put their offers on Epex or Nord Pool, then bids from both exchanges are combined in a coupling algorithm that determines a single price based on all purchase and sale offers.

Another key challenge in 2019 was the work on developing the capacity calculation method for the CORE zone, covered by 16 TSOs, which remains crucial for 2020 and future years. Application of the CACM guideline, combined with implementation of the Clean Energy Package (there is some overlap between the two), has made technical exchanges more complex at European level. European TSOs must agree on a common methodology that will guarantee a secure power supply by setting maximum import and export capacities at national borders while ensuring that commercial flows can operate smoothly and increase. This work will also include preparation and application of common financial settlement rules between European TSOs.

In 2019, for application of the EB/GL which involves a complete overhaul of the balancing method for the electricity system, RTE continued to work with its European partners on introducing the first common European balancing platform, TERRE.

Finally, like most European countries, France decided to introduce a capacity mechanism to help ensure that the required level of supply set by the public authorities will be attained. In 2019, RTE began to roll out the new measures that came into force at the end of 2018 as a result of France's commitments to the European Commission. They concern explicit participation by cross-border capacities in the French market, and the launch of "long-term" tenders offering a stable price for new capacities over a seven-year period. 2020 will be a crucial year for the capacity mechanism, as it will see the first financial delivery. 2020 and subsequent years will also see further concerted work between all stakeholders with a view

to updating and modifying the mechanism on the basis of substantial experience.

4.2 INTEGRATING THE LATEST TECHNOLOGICAL TRENDS TO INTRODUCE INNOVATIVE SOLUTIONS

4.2.1 Facilitating the expansion of renewable energies and changes in the energy mix

● *Description of the challenge*

The rise of renewable energies is helping to bring about a major transformation of the European energy mix. The expansion of wind power and photovoltaic solar power in France is undeniable, with more than 2 GW connected and commissioned each year.

France's public energy planning priorities for the next few years are reflected in its ambition of accelerating development of renewable sources of electricity. The national multi-annual energy programme issued in early 2019 sets the target of tripling installed onshore wind and photovoltaic power capacities by 2028, and commissioning of new offshore wind farms, in order to achieve the objective of 40% renewable energies in the national electricity generation mix by 2030.

Preparations for these significant changes are already under way. The prospective studies conducted by RTE for its legal missions of preparing the generation adequacy report and the ten-year network development plan help to anticipate how the system will operate in scenarios consistent with the national priorities for expansion of renewable energies.

Analyses performed for the 2017 generation adequacy report studied several contrasting scenarios for the energy transition. Some of these scenarios are founded on ambitious renewable energy development trajectories, the effect of renewable energy sources on supply security, the system's flexibility requirements, and the economic balance of the electricity mix. The additional studies conducted by RTE since 2017, particularly concerning electric mobility and hydrogen, highlight synergies between the concurrent rises of renewable energies and new electricity uses.

Transformation of the networks is an essential prerequisite for incorporating these new energy sources, as illustrated by the analyses reported in the new ten-

year network development plan in September 2019. Rapid change in the networks is needed to make the energy transition possible. The ten-year plan proposes gradual changes to the French electricity grid over the next fifteen years in order to meet the national objectives, emphasising the issues involved and the possible margins for manoeuvre. This document is thus an operational translation of the multi-year energy programme to make the networks a facilitating element of the energy transition.

Expanding use of renewable energies has consequences for RTE's planned investments. In a context where electricity consumption is now stable, adaptations to the electricity network will essentially be for the inclusion of renewable energies. Meanwhile, the connection of new renewable electricity generation facilities, especially marine energies, will involve major work that should be scheduled over the long term to optimise costs.

● **RTE's actions and commitments**

RTE is adapting its activity and its network to facilitate delivery of electricity produced from renewable sources.

RTE is making adjustments to its activities to cope with the structural changes induced by the arrival of a large mass of renewable energies, which the French State aims to increase to a 36% share of the electricity mix by 2028. RTE has begun to plan the inclusion, by contributing to the preparation of regional renewable energy connection plans, all of which have been validated so far. RTE worked with France's national public debate commission for the first time when it conducted the consultation process about the regional renewable energy connection plan for the Hauts-de-France region. These regional plans are an effective instrument to advance development of renewable energies, but RTE is continuing to work with actors in the sector to improve forward planning for network development and optimise connection times and costs as far as possible.

For example, the company is working on flexibility solutions that will facilitate lower-cost insertion of renewable energies. RTE's commitments are taking tangible form through establishment of new-generation electricity substations, for instance by installing digital instruments at the two 225-kV substations at Bezon and La Merlatière in the west of France, which are forerunners of the network of the future.

These substations will be equipped with innovative solutions (captors, data management systems, etc.) that will increase the electricity system's flexibility and the quality of the power supply. Based on constant infrastructures, these innovations will make it possible to receive up to 30% more renewable energy and help to improve resilience in the future network.

Concerning the electricity produced from offshore renewable sources, RTE is currently working on connection of the offshore wind farms being constructed under the first two French tenders of 2011 and 2013, with total power of close to 3 GW. RTE is also participating in the connection of pilot floating wind farms following the call for projects made in 2016 by the French agency for the environment and energy control, Ademe⁽¹⁾, as part of the "Demonstrators for the ecological and energy transition" programme for Investments of the Future.

RTE will also connect offshore wind farms built under future tenders to the national electricity network. Recent change in French legislation (the "Essoc" law of 2018 "for a State serving a society of trust") extended RTE's role to include design and operation of the offshore connection platform, to be funded by the TURPE network access tariff. These steps were inspired by approaches already used in other European countries which have demonstrated their ability to lower the costs of offshore wind farms.

4.2.2 New digital opportunities

● **Description of the challenge**

Wind and photovoltaic power generation have a very low impact on global warming, but with the disadvantage that the output has high variability and low predictability. Increasing use of this type of energy raises uncertainty and shortens the decision times for real-time management of the electricity system regarding both the supply-demand balance and managing power flows through the network facilities. Digital technologies are put to use to compensate for these disadvantages and construct responses to the challenge of incorporating several dozen GW of wind and photovoltaic power. Digital technologies will optimise operation of existing infrastructures and their maintenance in future years.

⁽¹⁾ Agence de l'environnement et de la maîtrise de l'énergie.

● RTE's actions and commitments

RTE is rolling out the very latest digital technologies at national level, at local level in zones where the network is constrained, and in every substation.

RTE is renewing and modernising the information system used to run the electricity system at national level since early 2017. The supervisory control and data acquisition (SCADA) system used for real-time electricity system oversight from national and regional dispatching rooms is being revised in preparation for industrial rollout in 2021. The current system is more than twenty years old, with a low capacity for adaptation to take account of the new European codes on network balance.

The new system can also manage new automata, which will make it easier to incorporate a large mass of renewable energies, and paves the way for monitoring leading to better management of network assets. The chosen principle for the new generation of automated equipment (command and control instruments) is interoperability between components supplied by several manufacturers for the same substation (under international standard IEC 61850), and more extensive computerisation of command and control. In 2019, competitive dialogue was conducted with suppliers in order to benefit from the latest industrial innovations.

In an electricity zone that can cover dozens of lines and substations, RTE's teams developed and tested the first "adaptive zone automaton" in 2019. This is a software that receives real-time information on the zone's network status and generation, and verifies that the network is able to handle the zone's renewable energy output. If a problem is detected, the software decides on and implements problem-solving action such as reducing renewable energy generation in the zone, or modifying the network topology by switching circuit breakers on and off. This demonstrator was installed in August 2019 in a zone located between Poitiers, Angoulême and Limoges in central France, where significant wind power facilities (around 400 MW) were recently installed.

In addition to this experiment, progress by RTE's R&D is also improving network operation conditions by using new levers, for example battery storage (see details of the RINGO battery experiment) and Dynamic Line Rating (a system to ensure equipment is used as close to maximum capacity as possible, by

referring to real-time measurements of temperature, land inclines, vibrations, etc.).

Finally, at local level, RTE has been installing digital command and control technologies in its electricity substations since 2006. The SmartElectre systems, approved in 2019, are a major step forward from the previous systems in matters of remote maintenance and cybersecurity, with a lower rollout cost for the large substations. R#SPACE, the next digital command and control technology for substations, is currently in the design phase, and its installation will begin in 2022.

Regarding maintenance, simulation of possible policies is being developed through a new application called MONA (Management and Optimization for Network Assets), which can simulate asset management strategies and assess them on a basis that takes account of ageing, the impact of maintenance, and the constraints applicable (in terms of budget, human factors, lockouts, inventories, etc.). The first industrial version of the MONA27 simulator was put into operation in 2018. It was used to review the policy of painting and repairing the metal supports for overhead lines, to quantify the required increase in the paint budget, and to refine definition of the need to replace dark steel pylons in high-corrosion zones. The next step is creating a digital twin of the existing equipment in order to have continuous knowledge of its condition and facilitate simulated studies.

RTE also engages with stakeholders in their use and interpretation of data, and is stepping up support in this respect. RTE can provide explanations and promote data service offerings, from open data to value-added services such as Eco2Mix or trend analyses such as adequacy reports, which are levers of economic performance for local authorities.

RTE has already experimented with and integrated artificial intelligence (AI)-based operation solutions in dispatching rooms and data science studies, but the time now appears to have come for a more explicit "augmented" intelligence strategy to meet the company's new challenges and make fullest use of mature technological opportunities. With this aim, RTE is launching the ORIGAMI project for network development studies in the form of an innovation partnership. This project will enable the company to assess the contributions of different forms of AI (semantic analysis, natural language, deep learning).

4.3 MAINTAINING AND ADAPTING THE NETWORK FOR THE ELECTRICITY LANDSCAPE OF THE FUTURE

4.3.1 Adapting the industrial model

● *Description of the challenge*

As the electricity network responds to the challenges of the energy transition, the coming decades will bring phenomena that will profoundly transform network operation and maintenance methods. RTE's business activities are changing accordingly, and this involves major industrial challenges.

In the next few years, integration of renewable energies and the rising equipment replacement needs due to the advancing age of the network mean that more flexible, optimised modes of operation must be found, notably involving digital solutions (automata, captors, etc.) and reinforced telecommunications systems. In parallel, connection of offshore wind farms and development of interconnections (particularly undersea links with the United Kingdom, Spain and Ireland) will be large-scale industrial projects.

The principles laid out in the 2019 ten-year network development plan illustrate these challenges. RTE's industrial strategy as expressed in that plan is founded on the principles of long-term planning to reduce costs, standardisation of equipment, sharing infrastructures (for example for connection of wind farms) and employing digital technologies to take use of existing lines one step further, reduce the need to adapt the network and optimise replacement of the oldest infrastructures.

● *RTE's actions and commitments*

RTE is working on several projects that respond to the industrial concerns of the electricity landscape.

"24-hour control centres⁽¹⁾"

By 2025, RTE will no longer operate its network and infrastructures the same way as it does today. It will have nine 24-hour control centres operating round the clock, controlling and supervising the networks and overseeing real-time exchanges of information about the operation and maintenance of electricity and digital networks.

The intended changes will take shape through in-depth adjustments to national and regional operation methods.

In this new configuration:

- flows and voltage will be managed from three 24-hour control centres located in Saint-Denis, Marseille and Nantes;
- equipment will be monitored from five 24-hour control centres located in Lille, Lyon, Nancy, Nantes and Toulouse;
- and telecoms-information and cybersecurity systems will be monitored from a 24-hour control centre in Saint-Quentin (with a backup room in Lyon).

In preparation for this future situation, 20 working parties dedicated to the installation of 24-hour control rooms were set up in early 2019, overseen by a project team. Definition of the future control rooms' activities takes into consideration changes of geographical scope and the rollout of new instruments (a new supervisory control and data acquisition system, a support system for equipment monitoring, etc.). This forward planning work has led to reviews of the interactions and processes that will need to be established between control rooms and the company's industrial activities (maintenance, asset management, scheduling, activity monitoring, etc.).

Work on the 24-hour control centres project will continue in 2020 and 2021, with the goal of proposing skill requirements and the principles for organisation of and between the 24-hour control rooms by mid-2020, to be followed in 2021 by organisation of each control centre, professionalisation courses and a consolidated overview of forward workforce planning.

Establishment of the nine control centres will be staggered over the period 2020-2025.

The first steps in this transformation will be taken in 2020 with progressive construction of the IT-security and cybersecurity rooms in Saint-Quentin-en-Yvelines (this unit will initially be small-scale with a pioneering team in 2020, and staffing will subsequently be increased between 2021 and mid-2023).

"Asset management 2025"

RTE's strategy for managing its network assets (links, high-voltage substations, command and control

(1) Some of which will operate 24 hours a day, 7 days a week.

systems, telecom networks, IT infrastructures and the related software) is evolving. The company is taking the opportunities provided by new digital technologies, coupled with new skills for simulations and risk analyses to optimise future expenses. It now needs to define and implement a new approach to management of assets' useful lives, applied across all of the company's functions (development and engineering, maintenance, operation, information and telecom systems, finances, HR, etc.).

4.3.2 Supporting research and development, innovation and experimentation

● *Description of the challenge*

With the deep-seated change it brings to the electricity landscape, the energy transition will entail a new real-time mode of network operation. Renewable energies, connected by power electronics, contribute to system resilience because their response modes differ from traditional alternators. It is now up to R&D to devise appropriate systems for this new context, identifying them so they can be incorporated in due time, as appropriate to the share of renewable energies in the future energy mix. A well-controlled schedule is also key, as timing can affect the equipment's constructive capacities, and the contractual demands of any new market entrant connected to the European electricity system need to be anticipated.

Disturbances related to climate change will have an as-yet-unmeasured impact on system infrastructures and operation, and this prospect is driving RTE to assess and reduce the cost of installations and their management. Historically, RTE's processes have been guided by minimisation of operating and development costs, but life-cycle analysis of equipment and its environmental impact must also be progressively included in choice criteria.

For nearly ten years, the participative innovation approach used at RTE has aimed to engage and acculturate employees in order to elicit good ideas for analysis, and turn some of them into structured projects. Useful levers of action to develop technological, methodological and social innovations should be consolidated once they have proved their worth, and new ones created to test other modes of leadership.

● *RTE's actions and commitments*

Through the European research projects OSMOSE and MIGRATE, RTE is studying technical options for operation of the system with a high rate of renewable energy penetration.

The OSMOSE project headed by RTE is a four-year (2018-2022) project involving a consortium of 33 partners (European TSOs, electricity producers, equipment manufacturers, IT specialists, and consulting firms). Its objectives are to anticipate flexibility requirements as renewable energies are incorporated, to make recommendations about the distribution between technological levers and new market mechanisms, and thus to achieve a transition towards provision of the same quality of electricity at the lowest cost.

As part of this project, RTE is also working on installing a storage demonstrator and trying it out in a multiservice approach. It will be used for real-life testing of the parameters defined by the European MIGRATE project, which ended in 2019, implementation of the synchronisation, frequency management and congestion management services.

As well as bringing new equipment into the network, R&D is modifying the decision-making software used in dispatching rooms; the greater number of actors involved and events that could affect system control within 24 hours are bringing about a shift from supervision (data is monitored in parallel by the operator) to hypervision (the system prioritises the most relevant information). This disruptive move requires AI-based building blocks, which will be introduced gradually over the next few years.

Regarding the environmental impact of its decisions, RTE is working with industrial actors through innovation partnerships to specify future equipment that can meet more demanding standards for use of resources and rollout impact, and to implement life-cycle analyses and indicators that can incorporate decision-making criteria.

4.3.3 Informing public decisions

● *Description of the challenge*

RTE carries out and publishes prospective analyses of the electricity system as part of its legal missions for preparing the generation adequacy report (article L. 141-8 of the French Energy Code (*Code de l'énergie*)) and the ten-year network development plan (article L. 321-6 of the French Energy Code (*Code de l'énergie*)).

These analyses help to inform public authorities and all stakeholders on topics under debate relating to the energy sector's transition, particularly the incorporation of renewable energies, secure power supply, necessary network changes, the rise of electric vehicles and new uses more generally (e.g. hydrogen, heating). They therefore nourish public decisions for the energy transition at several levels:

- at national level, they contribute to the preparatory discussions for French laws and regulations (for example the energy and climate law, the mobility priorities law, the revised multi-year energy programme, etc.);
- at European level, they contribute to coordination between member states for energy planning and elaboration of European directives and regulations governing organisation of the energy sector;
- at regional level, they provide input for construction of scheduling plans (such as the SRADDET regional plans for reorganisation, sustainable development, and regional equality).

● *RTE's actions and commitments*

In 2019, RTE continued to conduct prospective analyses and consultation, publishing many reports, launching new studies, and contributing to long-term scenarios for national energy programming.

RTE prepared and studied five contrasting scenarios for changes in the electricity mix by 2035 as part of the generation adequacy report published in November 2017 to provide information for development of the multi-year energy programme (PPE). These five scenarios included detailed analyses concerning the state of the electricity system, secure supply, CO₂ emissions and the economic cost. To ensure the analyses were relevant to the public debate, the study was conducted in conjunction with all stakeholders (energy sector businesses, NGOs, unions, professional bodies, institutions, academics,

think tanks, consultants, consumer associations, etc.) through the System and Network Prospects Commission⁽¹⁾ of the Electricity Transmission Network Users' Committee⁽²⁾.

Two of these generation adequacy report scenarios were later included in the public debate on revision of the country's multi-year energy programme in early 2018. They thus informed the proposed multi-year energy programme which was presented by the president of France in November 2018 and published in early 2019.

Prospective analyses and consultation continued in 2019 with the publication and launch of many studies:

- studies concerning electricity-supply security for the period 2020-2025 were updated and expanded in various publications:
 - in the first quarter of 2019, regional versions of the generation adequacy report were published and presented by RTE at preparatory meetings for the coal-fired plant closures at Metz, Marseille, Le Havre and Nantes organised by the State;
 - in early April 2019, RTE published an additional analytical report for remittal to the Minister for the Ecological and Inclusive Transition. This report examines bad-case scenarios concerning the evolution of supply security in the medium term, including assumptions of a significant delay to commissioning of the ElecLink interconnection, the Flamanville EPR and the gas-fired plant Landivisiau;
 - in late November 2019, RTE released the 2019 generation adequacy report which updates the diagnosis of secure electricity supplies in the medium term. This report emphasises a period requiring strong vigilance until 2022-2023, in a context marked by closures of controllable facilities in France (the Fessenheim nuclear plant and coal-fired plants) and Europe, a busy maintenance schedule for nuclear reactors, and a significant delay in commissioning of the Flamanville EPR. The study identifies levers to improve supply security.

These points will be further updated and enriched in the 2020 generation adequacy report.

- For the horizon 2030-2035, the analyses in the generation adequacy report are complemented by several thematic analyses responding to questions from the public debate:

⁽¹⁾ Commission perspectives système et réseau (CPSR).

⁽²⁾ Comité des utilisateurs du réseau de transport d'électricité (CURTE).

- in September 2019, RTE published a new edition of the ten-year network development plan. To provide material for the public debate and describe the network's role in the energy transition, this document has been extensively redesigned to offer a network-focused companion report to the generation adequacy report, and propose a general framework for transformation of the network in line with France's national multi-year energy programme. It reviews all the challenges - industrial, environmental, economic and financial - related to the electricity grid, with particularly detailed descriptions of investment requirements for replacement of the existing network, the basic digital structure, interconnections and connection of marine energies. The plan covers a fifteen-year period and considers three scenarios of change in the energy mix (taking the proposed multi-year energy programme as the benchmark, and the "Ampère" and "Volt" scenarios from the generation adequacy report as alternatives) and includes many sensitivity analyses. It is also submitted to the Minister, the CRE and France's Environmental Authority;
 - in May 2019, RTE and Avere-France (an association for development of electric mobility) published the results of a study concerning the issues an expansion in electric mobility would raise for the electricity system. This study, drawn up in conjunction with a dedicated working party, evaluates user behaviours, the contribution to the energy mix, and the economic and ecological impact of electric mobility, based on five scenarios for the rise in use of electric vehicles;
 - RTE carried out impact studies concerning the development of hydrogen production by electrolysis. These studies are part of the hydrogen plan launched in 2018 by the Minister for the Ecological and Inclusive Transition. The results are due to be published in early 2020;
 - finally, RTE is conducting a study in partnership with the French agency for the environment and energy control, Ademe, examining the impact of energy-efficiency policies on the building industry (insulation, renovation, standards for new buildings, etc.) and development of new electric heating solutions. Publication of this study is expected in the first quarter of 2020.
- RTE announced that the next long-term scenarios in the generation adequacy report would cover the period 2035-2050, exploring situations "with" and "without" new nuclear facilities, and also 100% renewable energy situations. These scenarios will

be consistent with the orientations of the national low-carbon strategy, a draft version of which was presented by the French Government in late 2018, with the finalised version expected in early 2020. The report will aim to answer the various questions raised by the authorities or participants in consultation processes concerning matters such as the technical feasibility of an electricity system with a large share of renewable energies, or the effect of climate change on the electricity system's operation.

The consultation procedure introduced in recent years has been renewed and extended for the above purposes. In 2019, around ten thematic working parties were set up, involving stakeholders and relevant experts. These working parties cover all issues related to the evolution of the energy system: general framework and scenario development, climate standards, coupling of electricity with other energy vectors, representations of society's demands, technical operation of the electricity network, etc. This consultation, and the work on developing electricity mix scenarios for the 2050 horizon, will continue throughout 2020.

4.4 FIGHTING CLIMATE CHANGE, PROTECTING BIODIVERSITY AND RESOURCES

4.4.1 Action against climate change

• Description of the challenge

Fighting climate change and adjusting its effects are a priority for public and private actors on a worldwide scale. The Paris agreement set ambitious objectives to manage the ecological transition that is necessary to achieve carbon neutrality by 2050. In France these objectives are expressed in the national low-carbon strategy.

RTE is part of this global mobilisation. Much of the electricity it currently transmits is already carbon-free, putting France among the highest-ranking countries in the world, with annual emissions of approximately 20 million tonnes of CO₂ equivalent from energy generation (of the total emissions of 445 million tonnes of CO₂ equivalent produced by the country).

Through the action it is taking to adapt the transmission network and ensure more efficient flow management, RTE is positioning itself so as to enable France to meet the targets set in the multi-year energy programme, which aims to halve national emissions from electricity production by 2035 to around 10 million tonnes of CO₂ equivalent.

As network operator, RTE is also taking steps to reinforce this effort by improving its own industrial footprint, as discussed in the following section.

● **RTE's actions and commitments**

RTE continued its efforts in 2019 to mitigate the impact of its emissions and adapt the company's activities to climate change.

Reducing greenhouse gas emissions

To contribute to the fight against climate change, RTE started to take action several years ago to measure and limit its greenhouse gas emissions.

The last report of its greenhouse gas emissions, dating from 2014, was updated in 2019 using data from 2018. RTE's total emissions amounted to 1,069,000 tonnes of CO₂ equivalent in 2018, a 19% reduction from 2014. The main types of greenhouse gas emissions are electricity losses from the network (572,000 tonnes of CO₂ equivalent), emissions from RTE's industrial and office buildings (201,000 tonnes of CO₂ equivalent), and SF₆ discharge (138,000 tonnes of CO₂ equivalent). The decrease in emissions since the previous report is principally explained by lower-carbon electricity generation plants (cutting loss-related emissions), availability of more precise data justifying downward adjustment of emission figures (including for emissions by buildings and worksites), and a significant drop in commuting kilometres due to changing transport modes and teleworking.

Due to changes to the electricity generation fleet (closure of coal-fired plants, expansion of renewable energies, adaptation of the nuclear plant fleet), electrification of certain uses that are currently highly dependent on fossil fuels, and reduction of carbon levels in certain vectors, the electricity transmission network and subtransmission networks need to evolve.

This evolution will enable a change in the electricity mix and electrification of uses laid down in the multi-year energy programme and the national low-carbon strategy. It is thus a prerequisite for achieving the environmental ambitions associated with reducing carbon in the energy sector.

RTE makes investments every year to adapt its infrastructures to the energy transition, and has thus contributed to lowering emissions by the electricity system.

RTE is introducing the following actions to reduce the principal types of emission:

● **Energy efficiency action plans for electricity losses**

Some of the electricity carried by the transmission network is lost between the production site and the place of consumption due to the "Joule" effect which converts some of the electricity transiting through a conductor (overhead cable, underground link) into heat. In 2019, these losses totalled 11,074 GWh, or 2.2% of total injections (from production sites and imports).

The greenhouse gas emission impact of these electricity losses results from the generation of extra electricity needed to compensate for the losses. The emissions related to these losses are calculated as the product of two factors: the quantity of losses, and the emissions associated with production of 1 kWh of electricity in France (the emission factor used in the Ademe's base carbone database). In 2019, electricity losses from the network led to emissions of 576,000 tonnes of CO₂ equivalent.

The factors influencing the scale of electricity losses (consumption level and location, generation plans, international transit, etc.) are beyond RTE's control, and as a result RTE does not have enough leverage for action to influence the rate of losses from the transmission network. Nevertheless, RTE always seeks to contain the quantities of electricity losses, for both economic and environmental reasons: they account for over 95% of RTE's energy bills and 54% of its greenhouse gas emissions.

Since 2007, the rate of electricity losses from the network has oscillated between 2.1% and 2.2% of electricity transmitted. The target set by the CRE is 2.1% or less for each year until 2021.

Adjustment of operating plans to reduce losses is a constant concern for RTE's operators. Their actions enable the company to bring the annual volume of losses down to around 1.5%.

To better assess the impact of electricity losses for the purposes of network development decisions, RTE now includes the predefined carbon value trajectory in its calculations of network investments (at the rate of €54 per tonne of CO₂ equivalent in 2019). This has been applied since 1 October 2018, particularly in valuing redispatching costs and the cost of losses.

● *Energy efficiency in buildings*

Regarding office buildings, all teams working at the Île-de-France/Normandie regional head office were relocated on 1 January 2019 to La Défense, Paris, to a building with HQE Excellent certification. In general, all the company's large-scale real estate restructuring operations (head offices, maintenance groups, grouping jobs on one site) have achieved improvements in energy efficiency as measured by current standards and labels.

In 2019, RTE completed installation of the submeters for its data centres, which will calculate the energy performance indicators.

● *SF₆ action plans*

The principal types of direct emissions by RTE relate to leaks of SF₆, a powerful greenhouse gas with a global warming potential that is 23,500 times stronger than CO₂. This synthetic gas is used in the electricity industry as an insulator, especially for metal-enclosed substations which can now be very compact, and overhead circuit-breakers. SF₆ discharge may be caused by accidental leaks from facilities, the age of facilities or maintenance operations.

To guarantee continuity in the electricity supply but also for environmental reasons, RTE has applied a proactive policy since 2004 to cut SF₆ leaks.

This policy was amplified and structured in 2018. Its main objective in the short term is to keep annual emissions to five tonnes and guarantee electricity quality through exceptional curative maintenance operations to preserve insulation in substations and circuit-breakers.

In the medium term, RTE has a special plan for replacement of the leakiest substations containing SF₆. This plan requires specific investments estimated at €630 million over fifteen years, currently submitted to the CRE for approval.

In 2019, SF₆ emissions totalled 4.89 tonnes, or 115,000 tonnes of CO₂ equivalent.

Reliable reporting of SF₆ emissions has been possible since 2015 thanks to a specific IT application. RTE constantly measures and locates its reserves of SF₆ and tracks the volumes installed in facilities containing SF₆ (metal-enclosed substations and circuit-breakers) and the related flows (gas purchases, gas inflow into equipment, discharges and emissions, monitoring of regeneration or destruction processes, etc.). The total installed mass of SF₆ in 2019 was 565 tonnes.

● *Low-carbon employee mobility*

In 2011, well before enactment in 2018 of France's energy transition law for green growth, RTE launched a mobility plan to help its employees to travel "better and less", whether for business travel or daily commuting. The aim is to reduce environmental impacts (travel is the fifth-largest source of RTE's greenhouse gas emissions, accounting for 3% of emissions).

The company is continuing this engaged action with the following measures:

- introduction in July 2016 of a kilometre-based indemnity for cycling. RTE went further than legal requirements, doubling the maximum indemnities suggested by the State. This incentive concerns an increasing number of employees (7.3% were beneficiaries by the end of 2019);
- promotion of teleworking (one or two days a week) for employees with appropriate jobs: according to the business travel survey of employees conducted in April 2019, telework concerns 20% of employees;
- selection of locations for regional and national headquarters that are well-served by public transport services (national head office, regional head offices for Île-de-France, Lyon, and soon Marseille and Lille).

The mobility survey of all RTE employees conducted in 2019 shows that behaviours are clearly changing. The modal share of private combustion-engine cars in employee commuting decreased from 51% to 44% between 2015 and 2019. Employees are switching to lower-consumption modes of transport, especially when travelling to RTE's city sites.

● *Eco-design*

Given the scale and interwoven nature of environmental challenges, RTE is taking steps to add an environmental criterion to its existing technical and economic decision-making criteria. It has decided to use eco-design, which consists of considering environmental factors right from the design stage of a product or service and throughout all stages of its lifecycle, from extraction of the raw materials to the end of its life. The main aims of those approach are to reduce greenhouse gas emissions generated by RTE's activities, cut the tonnage of materials extracted for its business, and increase the surfaces protected and developed to promote biodiversity. More details are provided in the following section (4.4.2 "Preserving resources (circular economy) and biodiversity").

Climate commitments

In August 2019, RTE signed up to the French business Climate Pledge made by 99 companies at the initiative of French employers' association Medef. RTE's commitments relate to three areas:

- facilitating integration of renewable energies and new electricity uses, notably for electric vehicles, for a zero net emissions economy;
- seeking to save resources, including through eco-design and promotion of energy sobriety;
- fostering ecological regeneration by rolling out its "zero-phyto" policy in electricity substations, and developing biodiversity-friendly vegetation management below power lines to contribute to the carbon wells.

Adapting to climate change

Weather events are likely to become more and more serious, with consequences for the electricity supply-demand balance (affecting the level of zones of consumption, with generation facilities impacted by wind, heat and rain conditions), the infrastructure and the network. These impacts are expected to become more significant as global warming advances.

Since RTE invests in installations that will in some cases last for decades, it is crucial to identify any weaknesses, particularly in relation to temperature sensitivity. RTE thus decided to launch a "Resilience" project to list these weaknesses, based on 2050 climate scenarios developed with France's national weather office Météo France from assumptions established by the Intergovernmental Panel on Climate Change (IPCC).

4.4.2 Preserving resources (circular economy) and biodiversity

Preserving resources and protecting biodiversity are natural concerns for a major infrastructure operator

RTE is taking a proactive approach to reducing its environmental impacts and preventing pollution from its activities by introducing new methods and building on training and awareness-raising for every employee.

An ISO 14001-certified environmental management system since 2004

Environmental action at RTE is governed by a general environmental policy that sets out ambitions, using

an Environmental Management System involving a programme for action at national and regional level called the Environmental Management Programme to oversee the initiatives implemented.

RTE has held ISO 14001 certification for all of its activities since 2004 and has an ISO 14001 audit performed annually.

The most recent renewal audit by Afnor Certification in 2019 confirmed that RTE's performance and environmental impacts are well-controlled in all everyday occupational activities. This audit found no points of non-compliance. The auditors praised RTE's overall environmental performance, stressing the maturity of the management system, the practical action taken by RTE in interaction with the regions and local areas, and the collective commitment by employees and managers.

Professional development for all employees

Environmental campaigns require commitment from every employee, and RTE has issued methodological guides and runs training and awareness-raising designed to reach every company employee, regardless of their activity.

RTE's environmental training oversight group develops and monitors all the company's environment-related training. This group makes sure that technical training in every business function incorporates environmental aspects. RTE employees are offered specific training on environmental matters, particularly to help them understand environmental impacts, waste management, third-party safety and biodiversity.

Environmental training	2017	2018	2019
Number of hours of environmental training (excluding substation maintenance training)	7,722	8,997	7,758
Number of employees trained (excluding substation maintenance training)	533	600	588

For environmental awareness, RTE participated as it does every year in the Fête de la nature, an annual celebration of nature, in May: more than 40 events were held all over France on the theme of "Nature on the move", attracting more than 1,400 participants

(members of the public, school groups and employees). Cleanups of nature zones were carried out with the NGO Surfrider, with which RTE has a partnership, and a large number of workshops were held at the company's office sites.

● *Actions against pollution*

RTE takes a proactive approach to reducing its environmental impacts and preventing pollution from its activities. This strategy requires a range of action:

- preventive action such as employee training, and installation and upgrading of containment systems beneath high-risk facilities;
- curative action, including provision of anti-pollution measures ("local treatment files", absorber kits, inflatable plugging systems, water-network plans, etc.), and a procedure for intervention in the event of an environmental emergency.

Action against water and ground pollution by oil

RTE owns and operates electricity facilities that contain oil (power transformers, ancillary service transformers, underground oil-filled links, etc.). In normal circumstances, these facilities pose no risk for the environment (because they are leakproof). However, RTE must prevent any risk of damage, and therefore pollution, and be ready to intervene if an incident arises because accidental oil leaks can be a source of environmental damage, particularly for water resources.

RTE has a process for collecting information on the volumes of oil lost and recovered so that facilities at risk of leakage can be identified and control of accidental pollution can be improved.

In 2019, there were two significant developments:

- the volume of oil leaked into the environment from the "Substations" category increased due to a large number of accidental events (fire or leaks) at power transformers, on top of problems with instrument transformers in very hot periods;
- the number of leaks from underground links decreased substantially compared to 2018 (the figure was halved), with one principal event accounting for 83% of leaks⁽¹⁾ from the "Underground Links" category.

These developments show that it is important for RTE to continue its programme of upgrading the containment systems for high-voltage equipment, replacing instrument transformers, monitoring underground oil-filled links more closely, and implementing the "management of existing underground link assets" policy to speed up replacement of underground links with a high risk of leaks.

Accidental oil leaks	2017	2018	2019
Unrecovered oil - Underground Links (m ³)	19.56	1.4	4.85
Unrecovered oil - Transformers and substations (m ³)	5.09	5.8	14.49
Recovery rate (%)	57.33	84.64	89.3

● *Action against water and ground pollution by PCBs*

Polychlorinated-biphenyls (PCB), which have significant insulation capacities, are flame-resistant and chemically stable, were widely used in the 20th century as an insulator for electricity equipment and a lubricant for pumps, engines and other facilities. Due to their dangerous effects on human health and the environment, sale of these substances is now banned and their use is restricted.

Specific rules apply for elimination of PCBs, and decontamination and ownership of facilities containing PCBs. After France's first national plan on decontamination and elimination of these facilities (equipment with PCB content of over 500 ppm), in 2013 RTE had more than 150 facilities with PCB content of over 50 ppm. In accordance with the ministerial decision of 14 April 2014 approving the company's application for a specific plan for decontamination and elimination of facilities containing PCB, RTE made a commitment to eliminate or decontaminate all such facilities by 31 December 2025.

⁽¹⁾ The real recovery rate for this event will be known in February 2020 after the decontamination operations. In the value given, this rate is considered as 0%.

In 2019, RTE submitted an application to the Ministry for the Ecological and Inclusive Transition to amend its specific plan following an internal audit of salting-out (raising the PCB content of equipment with a previous PCB content of less than 50 ppm in 2013). The request was received and validated by the Ministry on 15 April 2019. At 31 December 2019, based on the supporting documents received by RTE, RTE's specific plan is 86% complete (139 of 162 facilities have been treated), and the amendment to the plan is 71% complete (27 of 38 facilities treated). This is in line with the forecast schedule sent to the Ministry, which requires RTE to fulfil its PCB obligations by 2025.

● *The “zero-phyto” objective*

The phytosanitary products RTE has traditionally used at the 600 substations it owns and operates are essentially weedkillers with active ingredients that destroy vegetation. RTE made commitments under the 2010 governmental “Écophyto” plan to monitor and analyse the use of phytosanitary products and produce annual reports on the topic to confirm that the weeding work done complies with regulations.

In parallel to this monitoring, RTE has experimented with differentiated management of green spaces and alternative weeding practices.

Building on the results of those experiments, in 2019, RTE adopted a “zero-phyto” plan aiming to end the use of phytosanitary products at all of its substations by 2024 when the TURPE 6 network access tariff cycle ends, assuming that funding for the necessary investments are funded by the CRE.

As a result, as of 2019:

- preliminary studies for all new substations include measures to replace use of phytosanitary products;
- four of the seven regional substation maintenance contracts were renewed on a basis that includes obligations to use alternative weeding methods at sites of less than 5,000 m²;
- project teams to roll out the “zero-phyto” strategy have been designated in each of RTE's seven regions;
- procurement notices have been issued for contracts for research and work on “zero-phyto” adaptations, with a view to converting existing sites.

Currently, RTE maintains 2,300 hectares in its electricity substations, including 1,400 hectares where phytosanitary products are used, which will be progressively converted into spaces where such products are no longer necessary. In terms of the number of RTE electricity sites converted, the progress rate of the “zero-phyto” sites policy was 14% at the end of 2018 and 18% at the end of 2019. The employees working at electricity sites that already follow the “zero-phyto” approach also report benefits in terms of quality of life at work.

All of RTE's office sites have been maintained on a “zero-phyto” basis since 2018.

Raw materials, the circular economy and waste management

● *The eco-design principle*

The eco-design principle concerns all RTE's activities, from electricity system infrastructures, management and services to the company's support functions. It concerns what RTE designs, what RTE helps to design (specifications, collaboration, prospective studies) and what RTE purchases, across the whole scope of its activities (electricity system infrastructure and management).

To reduce its environmental footprint more effectively throughout the whole business cycle, RTE seeks to combine restrained consumption, efficiency, modularity and recyclability in the chosen solutions.

This translates into a broad operational approach intended to create the right conditions and instruments for good internalisation of the eco-design principle. The first step in this approach involved defining an action framework in 2018 and 2019 for identification of priority skills (definitions, ambitions and targets shared by the whole company based on RTE's known impacts), and experimentation.

In concrete terms, for 2019 RTE successfully improved its future environmental footprint thanks to the following actions:

- the positive outcome of research into impact reductions on RINGO batteries. The expected benefits concern lower energy consumption, using “free cooling” to reduce the volume of liquid refrigerant, and lower use of materials by reducing container weight;

- use of eco-design methods to optimise connection of the electricity consumption necessary for substation operation;
- requests for environmental assessments in certain framework agreements, to involve suppliers in the eco-design approach.

• Higher traceability in raw material consumption

In addition to energy consumption, with the objective of controlling and if possible reducing its consumption of all kinds of resources, RTE is improving the traceability of its consumption of raw materials, particularly:

• Consumption of metals

Since 2017, RTE has worked to improve quantification of the principal metals in the current electricity network and expected consumption of those metals, in order to meet the requirements of RTE's asset management and contribute to preservation of resources. The existing network is chiefly made of steel, aluminium, copper and zinc, and the average annual consumption calculated under the lifecycle analysis method is close to 33,000 tonnes of iron, 21,000 tonnes of aluminium and 2,000 tonnes of copper.

• IT and telecommunications, and consumption of paper

RTE wants to promote more sustainable use of digital equipment. Thanks to re-insourcing of software design and development skills, RTE now incorporates eco-design rules into its software development. The Green IT roadmap adopted by RTE was used to revise the IT and telephone equipment policy (using equipment for longer, efficient use of consumables, reconditioning and recycling hardware). All the computers purchased by RTE now carry the Energy Star or EPEAT Gold⁽¹⁾ eco-labels, and its printers also meet international eco-friendly standards such as Blue Angel or EPEAT⁽²⁾. Users are made aware of good habits for environmentally-friendly printing. Reducing the volume of printing from one year to the next has been a criterion in RTE's profit share agreement since 2016. The volumes printed were cut by 22% between 2016 and 2018, and the decrease is continuing, notably at the national head office which achieved a 20% reduction between 2018 and 2019. Using recycled paper has become the norm at the head office.

• Circular economy and waste management

RTE is aiming for broader application of circular economy principles in its activities, and actions were undertaken in 2019 to achieve this. For example:

- a lifecycle analysis of the end of life of underground links was carried out in early 2019, to identify the management scenario with the lowest environmental impact. Three scenarios were considered: total removal, partial removal and leaving the links where they are. The lifecycle analysis showed that partial removal of the link, without opening up the surface along its whole length, is the most beneficial for the environment. As a result of this analysis, practices for removing underground links have been revised;
- a study of the end of life of low-voltage cable drums was begun in 2019 for a clear understanding of current practices and environmental optimisation of practices.

When waste is produced, RTE's objective is to recycle as much as possible and make use of it by any relevant method (producing energy, for example). When new facilities are being built, RTE develops "eco-sites", an approach already put into action fifteen times since 2017 which leads to higher recycling rates. For the first time, it was decided to apply the "eco-site" approach to an office building demolition/reconstruction project for the Ormes substation group in the Rouen area.

Most of RTE's waste is inert waste (nearly 85% in 2018), especially excavated earth. In 2019, close to 90% of this waste was recycled, most of it being sent to fill cavities at quarries. A range of initiatives was also undertaken in engineering projects, to reduce the amount of excavated earth and reuse unpolluted earth before sending it to the quarries:

- RTE encourages building contractors to propose a strategy of reusing rubble on site as backfill, to achieve an economic and environmental optimum;
- the clauses in certain contracts (notably for underground links) have been adapted so that on-site reuse of earth is possible, after processing (such as sifting, lime treatment, crushing) where necessary;
- RTE is monitoring innovative management methods for excavated earth in conjunction with other site management entities (Société du Grand Paris, Solideo, Bouygues, etc.). Ideas for improvement have been identified, such as using online platforms to organise exchanges of rubble and backfill between urban worksites, or building with mudbricks made from waste earth.

(1) Independent label certifying ecodesign and energy efficiency.

(2) Independent label certifying ecodesign and energy efficiency.

To make the circular economy a key concern for everyone at RTE, it was decided in 2018 to make the waste recycling rate one of the criteria of the company's profit sharing, for a period of at least three years. A series of events to raise head office employees' awareness of the "zero-waste" principle was held in November 2019, during the European Week for Waste Reduction. The overall recycling rate for RTE's own waste in 2019 was 85.1%.

Plant and animal life and the landscape

RTE has been well known for its national biodiversity strategy since 2012. After joining the inter-business Act4nature initiative in 2018, the company signed up to the "Business for Biodiversity" commitments in December 2019. RTE clearly states its commitments covering six areas, each with quantified targets:

- gaining a better understanding of the impacts of its activities on biodiversity;
- developing vegetation management that supports biodiversity beneath power lines;
- reaching the "zero-phyto" objective;
- protecting pollinating insects and promoting growth in their populations;
- integrating and developing biodiversity in urban settings;
- raising awareness and training RTE's employees on matters of biodiversity conservation.

• *Protecting birdlife and installing power line markers*

RTE is committed to installing devices to limit the impact of its installations on birds, in application of its bird protection policy. This policy concerns development, engineering and maintenance worksites and funds the installation of equipment on overhead power lines to reduce the risk of collision (markers) and electrocution (platforms, spikes, anemometers, etc.).

RTE has set itself targets in its bird protection policy for eliminating the most sensitive points (points with risks of bird collisions). The policy was revised in 2009 and 2016, assigning priority to the line-marker installation programme and responding to external requests. Visual markers are installed on the power lines to make the earth wires and conductors more visible, and therefore limit the risks of collision for birds. So far, power-line markers have been installed at around half of the total 728 sensitive points, and more than 2,300 km of overhead lines were equipped with markers to protect birds by the end of 2019. RTE currently spends more than €1 million every year putting markers on its existing lines.

More than 12,000 devices (spikes, anemometers, nesting platforms and artificial nests, auditory bird scarers, decoy birds of prey, etc.) are also installed on pylons to limit the risk of bird electrocutions and any resulting short circuits.

Finally, RTE is a member of France's national birdlife committee (CNA⁽¹⁾) which involves associations (LPO, FNE) and certain electricity transmission and distribution system operators (RTE, Enedis). The CNA is a forum for dialogue and decisions between operators and associations to prioritise actions to mitigate the impact of electricity lines on birdlife.

RTE participates in three major types of R&D projects:

- projects studying the potential effects of construction and operation of the undersea electricity cable:
 - the OASICE project which began in 2017, in partnership with environmental consultants TBM Environnement, the French national research body CNRS and the University of Western Brittany. It aims to study how building and operating new undersea electricity cables affects the benthos (the community of organisms that live on the seabed) and the possibility of using scallops as bio-indicators,
 - the SPECIES project (2016-2020), a research consortium coordinated by France Énergies Marines, France's national institute for research on marine energies. This project studies how operating undersea electricity cables laid on or buried in the seabed affects the benthos, looking particularly at the effects of electromagnetic fields (low impact and uncertainty in the benthos);
- projects characterising the dynamic of the settings for future planned offshore floating- and fixed-foundation wind farms, and their connection to the network:
 - the APPEAL (2018-2021), DUNES (2019-2022) and ABIOP+ (2019-2022) projects aim to better characterise marine ecosystems and their dynamics in relation to the social sphere (APPEAL), the physical environment (DUNES), and infrastructure supports during the open water colonisation phase (ABIOP+). These studies provide an understanding, prior to establishing an infrastructure at sea, of the initial state of the environment and dynamic of the species. The information is used to model future developments according to environmental modifications: climate change, changing

(1) Comité national avifaune.

uses, installation of an infrastructure. These projects were set up under the partnership with France Énergies Marines,

- the ECOSYSM-EOF (2019-2021) project is studying a range of high-frequency observation instruments that are necessary for acquisition and documentation of knowledge on the current state and changes in marine ecosystems around the infrastructures (cable networks, offshore electricity platforms) of floating wind farms in the Gulf of Lion. These technical instruments will subsequently be used to study the potential effects of infrastructure operation;

- prospective projects:

For better coexistence of infrastructures in the marine environment, RTE is conducting innovative research by developing bio-inspired solutions. The BIOMIM - Lignes de vie marine (marine lifelines) project, which started in 2019, is the first exploratory project concerning bio-inspired solutions for offshore wind farm connection facilities. The objective is to combine a solution inspired by nature with a marine infrastructure that is conducive to regeneration of ecosystems.

RTE is also a participant in two general projects that are important for all three groups:

- the "cumulative effects" scientific interest grouping (2019-2021) aims to introduce a regional approach in the eastern English Channel to understanding the cumulative effect of maritime activities (extraction of marine aggregates, renewable marine energies, immersion of sediment from port dredging, fishing, particularly trawler fishing) on the different areas of benthos and fisheries sciences;
- COME3T is a national network of experts formed to provide expert knowledge, summaries, analyses and recommendations on environmental (biological and physical-chemical) issues and socioeconomic issues relating to renewable marine energies.

RTE also intends to participate, as project owner, in future tenders for offshore wind farms and their connection to the mainland. RTE wants to study the possible benefits of such platforms in addition to their solely technical function, and is in discussions with several actors with sea-related activities, including some of the company's partners (Ifremer, SNSM, Surfrider) to consider potential co-uses for future offshore platforms.

- *Developing biodiversity below the lines*

20% of the land underneath RTE's power lines is in natural zones, essentially linear forest clearings and marshland (70% in agricultural areas and 10% in urban areas). In the linear clearings, RTE principally manages vegetation by the established industrial practice of rotary mulching, but this method takes no account of natural species' biological cycles and destroys flora and fauna. In application of its biodiversity policy, RTE is introducing biodiversity-friendly land management in partnership with natural space managers and biodiversity actors. By the end of 2019, a total 1,161 ha of land had been made biodiversity-friendly. However, under its vegetation policy, RTE is also introducing differentiated approaches to vegetation, entering into partnership agreements with hunting federations, and using selective cutting methods.

Two different RTE policies are thus making the land below the lines more biodiversity-friendly. After an experiment conducted through the Europe-wide Elia-RTE "LIFE" project, RTE decided to invest in a pilot project to assess the scale of industrial alternative vegetation management, combining methods from these two policies.

The project named "BELIVE", standing for "*Biodiversité sous les lignes par la valorisation des emprises*" (Biodiversity below the lines for enhancement of the occupied areas) incorporates the principles developed in the LIFE project to place electricity lines in "green corridors". The objective is to invest in sustainable landscaping below the lines to integrate facilities into the surrounding countryside, encourage biodiversity and good relations with third parties, and reduce maintenance costs while preserving electricity network safety.

BELIVE is an operational R&D project being undertaken on a pre-industrial scale in three experimental areas (the Ardennes regional park in north-east France, acknowledged by the state as a pilot site for biodiversity, and areas to the west and south-east of Paris). The aim of the project is to determine the extent of human and financial resources needed at national level, based on application of alternative methods to 200 hectares of land. In each area, the land beneath power lines identified as suitable for this type of conversion is selected on the basis of economic, environmental, legal, societal and technical criteria. RTE is in contact with a number of local actors in each area (hunters' federation, the Permanent Centre for Initiatives or the Environment

network, French regional parks, non-profit associations in general, landowners, livestock breeders and farmers) to set up measures to maintain low vegetation under the high-voltage and very high-voltage lines.

● *Establishing and promoting urban biodiversity*

RTE renewed its partnership with the nature protection association Noé for the period 2018-2020, continuing its commitment to promoting biodiversity. Among other things RTE supports the Jardins de Noé label programme which certifies green spaces at office sites that are organised to provide habitats for local wildlife and are managed in a biodiversity-friendly way. Noé supports sites setting out on this path by assessing the green spaces and proposing suitable ecological action (under the Jardins de Noé charter). In 2019, RTE and Noé worked together on recommendations for maintenance of Jardins de Noé-certified green spaces and raising awareness of the employees in charge of the maintenance work.

RTE is thus continuing its commitment to achieving the objective it set itself in the Act4nature initiative in 2018: gaining the Jardins de Noé label for 15 office sites by the end of 2020. At the end of 2019, 6 sites had the label, and others are currently being supported towards that aim.

● *Identification and anticipation of the impacts and potential benefits of RTE's activity for marine biodiversity*

As the entity in charge of connecting offshore renewable energies, RTE is involved in several research and development projects to study and control the potential ecosystem impacts of underwa-

ter cables. RTE's objective is to develop offshore activities in a way that protects the environment. Its R&D projects examine all stages of the lifecycle of offshore connection installations, from the "study" phase upstream of projects (initial situation, impact assessment, eco-design), to the "construction work", "operation and maintenance" and finally "decommissioning" phases (examination of the impacts, and proposal of avoidance and mitigation solutions).

Biodiversity commitments

In December 2019, the Ministry for the Ecological and Inclusive Transition launched a single voluntary mechanism for French companies to make commitments in favour of biodiversity, called "Business for biodiversity - Act4nature France".

This was formed by merging two previous initiatives, "*Entreprises engagées pour la nature*" (Companies committed to nature) set up by the French biodiversity agency in the wake of the National Strategy for Biodiversity, and Act4nature which was launched in 2018 at the initiative of "*Entreprises pour l'environnement*" (Businesses for the environment) with the support of many associations and scientific partners. More than 60 CEOs signed up, including François Brottes, Chairman of RTE.

Continuing its actions to promote biodiversity, RTE joined the "Business for biodiversity - Act4nature France" at its launch event held at the Ministry for the Ecological and Inclusive Transition in the presence of Emmanuelle Wargon, and will renew its commitments in 2020.

4.5 SUPPORTING CUSTOMERS AND LOCAL AREAS

4.5.1 New uses of electricity

● *Description of the challenge*

Uses of electricity are evolving fast. This is illustrated by the rise of collective and individual electric mobility, smart buildings, the digital industry, power storage and charging management for electric appliances. RTE is significantly involved in these fields, to plan ahead for changes and take steps to incorporate them into the electricity system. Three major areas are concerned: electric mobility, the emergence of data centres, and self-consumption.

● *RTE's actions and commitments*

RTE is engaged alongside actors for mobility and new uses of electricity to study the new needs of businesses and individual and adapt the electricity network accordingly.

In 2017, RTE joined Avere-France, an association for development of electric mobility, for a collective analysis of the issues raised by the arrival of 15 million electric vehicles in the electricity system in the next fifteen years.

The report of the study's results, published in May 2019, is informing public debate about the interactions between French roadmaps for energy and mobility. It was drawn up in conjunction with all actors in the sector and assesses behaviours, contribution to the energy mix, and the economic and ecological impact of electric mobility. This project has strengthened the links between RTE and actors in the world of mobility (automakers, start-ups supplying solutions for management of battery charging). It also opened up a space for discussion of the basic assumptions regarding the expanding use of electric vehicles.

The main results show that:

- the electricity system will be able to absorb growth in electric vehicle use, provided that charging is well managed, for example by locating vehicle charging points near plants producing variable renewable energies;
- an increase in electric vehicles brings major ecological and economic benefits, whatever assumptions are used;
- electric mobility is a flexibility factor for management of the electricity network.

Supporting data centres installation

The growing number of data centres is an important development for the national economy and also for RTE. This business sector needs a high-quality electricity supply, and it will be in everyone's interest for it to grow in a French national system that is already largely carbon free. New data centres are being set up at quite a pace, particularly in the Paris region and around Marseille, and RTE is taking particular care to plan ahead and support the arrival of prospective new users, especially hyperscale data centres. These are a new form of data centres that generally need a very powerful electricity supply above 50 kV, entailing direct connection to the high-voltage electricity network.

Against this background, RTE is continuing its membership of the professional association France Data Center, to understand and adapt to new customers' needs. In practical terms, this has led to RTE giving presentations at regional conferences, and developing tailored support measures for customers.

Preparing for the consequences of self-consumption

The costs of photovoltaic solar panels have fallen in recent years, and this, together with introduction of a dedicated economic framework for self-consumption operations, has generated greater consumer interest in having solar panels which can provide them with a direct local supply of solar energy.

To inform the debate on the consequences of self-consumption for the French electricity network, the ten-year network development plan extends the study begun in the 2017 generation adequacy report. This study differentiates self-consumption itself from the forms of solar power development. The analysis shows that the increase in self-consumption is not likely to change the outlook for network development, although it will mean that a larger proportion of solar power generation will be located in urban rather than rural zones.

4.5.2 Increasing sensitivity to the quality of electricity

● Description of the challenge

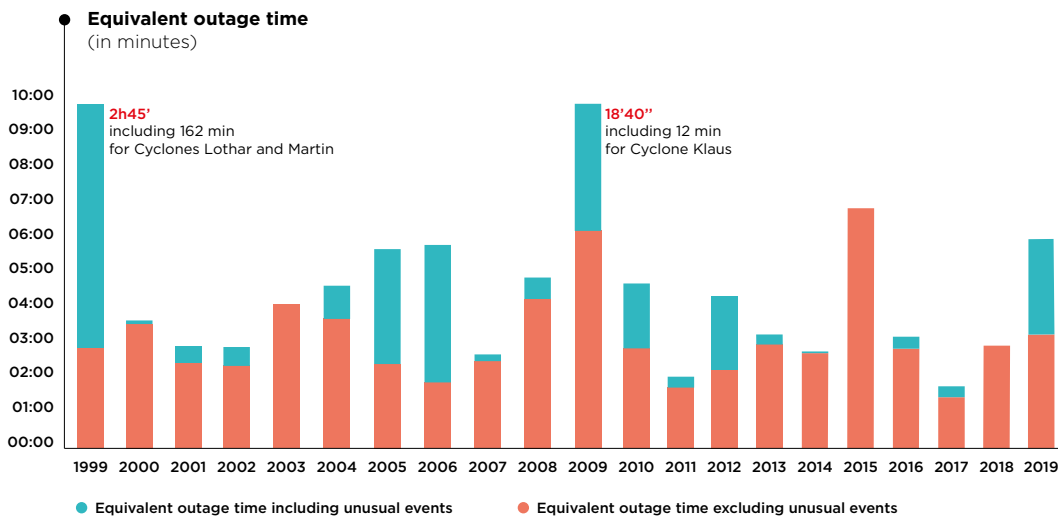
France's public electricity transmission network was originally built in the second half of the 20th century to support the national policy to equip the whole country. It serves the entire interconnected area of mainland France today, but must now adapt to changing lifestyles, for example through reinforcements to cope with peri-urbanisation, or putting equipment underground in areas where land is in short supply, while also beginning a crucial phase of replacing the oldest parts of the network. Ensuring a secure power supply is a key issue for development of the economy, and particularly important for attracting activities where electricity quality is vital (data centres). Furthermore, society is becoming increasingly sensitive to power cuts. Any break in power supply is considered very costly for the community, due to interruptions of industrial and professional work, damage to equipment, etc.

● RTE's actions and commitments

RTE is taking action to address this issue, with three-year commitments concerning the quality of electricity for consumer customers.

RTE uses several indicators to report on its performance:

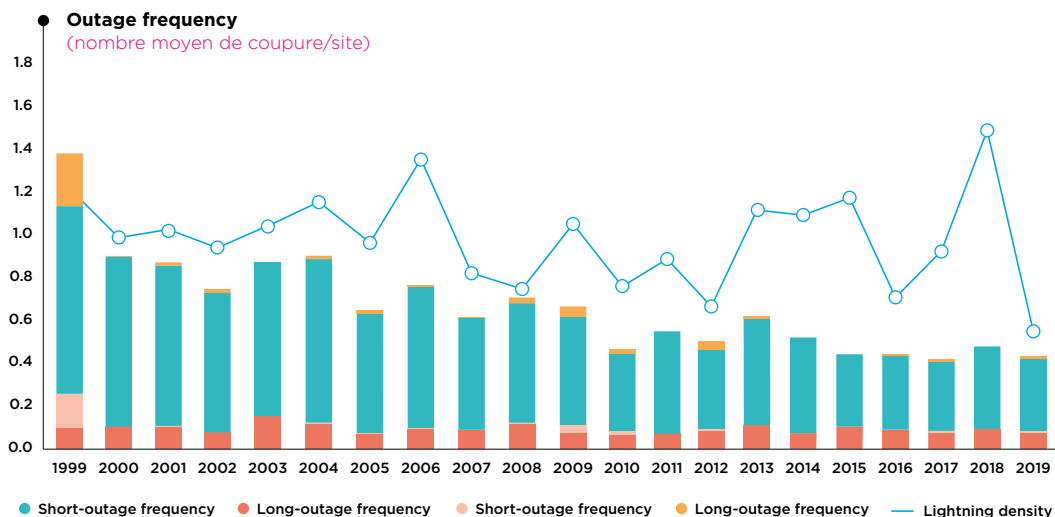
- equivalent outage time is an index reflecting the scale of power cuts, calculated as the ratio of undistributed energy to the average power distributed during a year. In 2019, the equivalent outage time was 6 minutes 6 seconds, or 3 minutes and 25 seconds excluding unusual events. This corresponds to 4,660 MWh of undistributed energy, or 2,615 MWh excluding unusual events. Excluding unusual events (notably an episode of sticky snow in November), the equivalent outage time for 2019 was consistent with the average for the ten previous years;



- outage frequency is the average number of unplanned outages per site during the year. It is broken down into long-outage frequency and

short-outage frequency. The outage frequency for 2019 was 0.38, or 0.37 excluding unusual events (81% were short outages⁽¹⁾);

(1) Power cuts lasting less than three minutes.



- RTE has made a commitment to keep outages below a limit set by reference to the history of each site. At 31 December 2019, these limits were 94% respected for distributors and 96% for industrial customers. RTE has also made a commitment to consumers to keep the total duration of outages below a certain limit for each three-year period. At 31 December 2019, these limits were 98% respected for industrial customers.

RTE is also committed to minimising the disturbance caused to customers by scheduled work that is essential to keep facilities in good operating order.

The commitment for industrial consumption sites, to stay below three days of pre-scheduled unavailability in three years for each power supply source, was respected in 85% of cases at 31 December 2019. Scheduled work on the network is always organised in liaison with each customer so that any opportunities relating to their specific needs can be taken into account. This is particularly important when RTE is obliged to exceed the three-day commitment for reasons of network maintenance and robustness.

At the vast majority of production sites, outages are sufficient for network maintenance operations to be completed without affecting output. For other sites where this is not possible (e.g. renewable energy facilities), scheduled interruptions are subject to a commitment that they will not exceed five days in three years.

For distributors, the schedule is coordinated between network operators such that work can be done with no break of electricity supply to end customers. The schedule is now shared with Enedis via a common information system, for simpler, more streamlined execution (since late 2019).

4.5.3 Stronger regional and local ambitions

Description of the challenge

The regional and local reforms in France in recent years (particularly the “Notre” law of 2015) have brought changes to local authorities’ competence in matters relating to the energy transition, economic development, and planning, which is being reinforced. To support and facilitate these changes, RTE, as guarantor of security and solidarity between different areas as regards electricity, is adapting and taking action to use its expertise for the benefit of local authorities. With the ambition of being a partner in their performance, RTE has set itself the goal of structuring a set of services for local area development, the energy transition and economic development.

● *RTE's actions and commitments*

RTE is constructing its new dedicated services for local and regional authorities on the themes of local planning, the energy transition and economic development.

- RTE proposes solutions for development and planning bodies, designed to foster long-term economic developments in local and regional areas. RTE is able to foresee their needs when assisting urban planning, for example proposing negotiated procedures for burying installations at local instigation, co-uses with its own infrastructures, or solutions to convert the power line corridors for uses such as “urban lungs”, spaces for biodiversity, or car parks.
- RTE intends to offer the regions and the largest cities its expertise in prospective analysis, and its overall vision of energy transition planning, putting the company in a position to assist regions and cities in the decisions that will shape the future of the electricity system. This expertise highlights the role of the electricity network in ensuring solidarity between different areas as the electricity system evolves.
- The quality and density of the electricity transmission network across all of France is a source of efficiency for the 500 directly connected businesses, and a factor of differentiation that enhances the country's appeal. RTE has therefore renewed its partnership with the CNER, the Federation of investment and economic development agencies, and is pursuing its relations with individual economic development agencies. The aim is to anticipate the arrival of new industrial operators, and assist local economic actors in matters relating to new electricity uses.

The progressive construction of these new services is reinforced by the findings of the first “local” satisfaction survey published in September 2019. This survey shows that public actors are very interested in RTE's role and missions in their areas. Demand is particularly high in the four areas of local/regional services identified: RTE's impact on economic development and employment, renewable energies, the energy transition, and urban planning.

RTE takes care to include local companies in its supplier panels when contracts are awarded. In 2019, the amount of direct purchases by RTE from small- and medium-sized enterprises was €338 million, or 21% of all the company's purchases. 90% of RTE's purchases are from suppliers located in France. Since 2013, RTE has held inter-firm forums, organised jointly with local chambers of commerce and industry

whenever major renovation and development projects are planned for the electricity network, giving local firms the opportunity to respond directly to tenders and develop contacts with the major groups. The practice continues and, in 2019, RTE prioritised this type of interaction at 15 forums. For example, at the Inelfe forum held at the Bordeaux-Gironde CCI, RTE presented the €1,750 million project, its strategy and its procurement schedule to around forty local businesses.

RTE's aim is to provide long-term support, at local level, for occupational development and employment of disabled people. €1.8 million of services by the protected and sheltered sectors were invoiced to the company in 2019.

Finally, RTE has taken measures to help people experiencing social or employment difficulties to find or return to work. More than 30,200 hours of work for such people were contracted in 2019 with companies awarded RTE tenders.

4.5.4 Supporting and facilitating customer change

● *Description of the challenge*

In the midst of energy-related and digital transformations, regulatory changes and economic constraints, RTE's customers are becoming more and more demanding as regards service quality (continuity of power supply, data availability and reliability). They also want more personalised support and tailored advice to improve their performance. RTE must therefore continue its service-related action to respond better to its customers' economic, societal and environmental concerns.

In 2019, nearly 920 companies were customers of RTE. They fall into four segments:

- 377 industrial consumers (including rail transport);
- 176 electricity producers;
- 131 electricity distributors;
- 236 electricity market actors.

● RTE's actions and commitments

RTE is making its commercial offerings fuller and more attractive, with increasingly flexible solutions for customers.

RTE aims to facilitate new connections by offering customers more flexible solutions that respond to their desire to optimise processes and can meet their place, time and cost constraints. RTE also offers solutions to enhance customers' competitiveness, such as potential remuneration for load-shedding which can reduce their electricity bills.

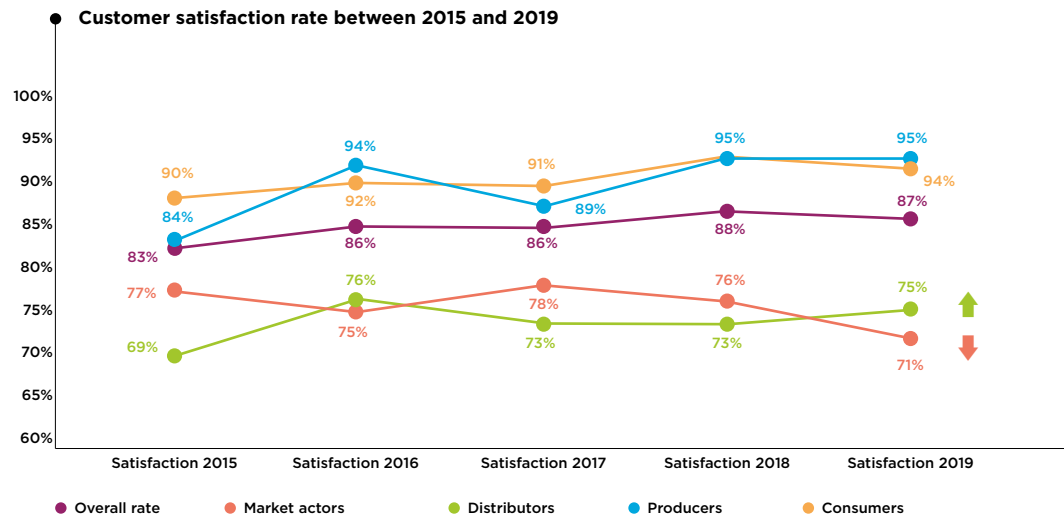
An organisation comprising four customer product lines (connection, electricity quality, metering, and market access) was introduced more than two years ago and has led to an increase in the customer satisfaction rate (87% in 2019).

Furthermore, to support its significant commitment for customer satisfaction, RTE is renewing its digital offering, building on the rollout of smart meters (two thirds have already been installed and full rollout is due to be completed in 2021). To do so, it has introduced:

- a new dedicated service portal for customers, where they can monitor consumption practically in real time, with access to meter data, load curves per site and per period, and real-time notifications of any power cuts. 6,230 online accounts had been registered at 31 December 2019 for 653 companies declared. This portal enables customers to oversee their activity, and better organise electricity purchases on the markets;
- a dedicated data portal for user groups interested in making use of public datasets. This is a concrete expression of RTE's objectives of openness and transparency, and the portal processed more than 150 million queries during the year.

The digital services offering was co-designed with customers to give the best user experience. It will be enriched with new content and functions as time passes.

RTE has set itself the objective of achieving a 92% customer satisfaction rate by the end of 2020 (compared to 87% for 2019).



4.6 LOOKING AFTER EMPLOYEES, REWARDING AND GROWING TALENTS

4.6.1 Creating an ever-safer working environment and better quality of life at work

● *Description of the challenge*

RTE's policy for health, safety and quality of life at work reasserts its ambition to eradicate serious and fatal accidents among employees and contractors. Prevention work focuses on control of the major risks: electric shocks, falls from height, exposure to chemicals.

In view of the fresh rise in the number of accidents entailing sick leave in 2019, concerning both RTE employees and contractors, it is important for employees to retain confidence in the improvement campaigns begun following the diagnoses carried out in previous years (by the the French Institute for an Industrial Safety Culture⁽¹⁾ in 2016 and consultants Sopra Steria in 2018). Developing safety leadership in managers, project managers and foremen should meet this objective and mobilise all the company's actors in the long term.

After analysis of the health information produced by the occupational health department, specific preventive action is being taken regarding two principal causes of absenteeism: repetitive strain injuries and psychosocial risks.

● *RTE's actions and commitments*

Rollout of the Safety Impetus programme decided in 2018 by the Executive Committee began in 2019. After eighteen months of work, more than half of the 13 projects to improve safety have now been completed.

Commitment by RTE's managers and employees to these projects is crucial if health, safety and quality of life at work concerns are to be incorporated into the physical execution of work, and also into the upstream processes, from design to site preparation via preliminary studies and operation planning.

The construction and promotion of "rules that save lives" between May and October 2019 created a collective dynamic and gave concrete expression to the primary objective of reducing serious or fatal acci-

dents to zero. RTE has defined a cultural model associated with these rules, with the deliberate aim of encouraging safe behaviours, and specifying the criteria for dealing with any departures from those rules.

First-aid training at work is an excellent lever for building employee commitment. In April 2019, RTE was authorised by the INRS (French National Research and Safety Institute) to carry out its own initial and follow-up first-aid training for its 120 volunteer first-aid trainers, who have themselves trained more than 4,000 employees – nearly one in two. During the 2019 Health and Safety and Quality of Life at Work Week, more than 1,000 employees received an introduction to emergency responses, with a particular focus on explaining how to use an automated defibrillator.

Preventive action for health gained in importance in 2019, in response to employees' growing concerns, the weak signals noted by the occupational health teams, and a significant rise in cases of sudden illness at work followed by sick leave. The initiatives taken related to three levers for prevention of cardiovascular problems: the "*parcours du cœur*" event to raise awareness of heart health organised by the French Cardiology Federation, renewal of RTE's partnership with the physiotherapists' association Kiné France Prévention for prevention of repetitive strain injury, and finally the construction of a national anti-addiction project.

RTE has stepped up its presence on contractors' worksites considerably, displaying its commitment to supporting them and demonstrating its strict requirements for health and safety. There were more than 2,100 worksite visits, and 1,500 points were checked or audited in 2019. The "rules that save lives" and the joint work done by RTE and contractors' prevention officers were shared in order to have a common approach to risks. RTE's "High-Voltage Pass" authorising access to its worksites was extended to more than 5,000 holders by the end of 2019.

Despite the dedicated efforts of employees and contractors, in 2019, RTE recorded its highest level of work-related accidents entailing sick leave in ten years. Accidents concerning RTE employees and contractors involve slipping and tripping accidents, load handling accidents, and accidents while using tools and machines. There was a very substantial increase in 2019 in the number of cases of people being taken ill at work followed by sick leave, which accounted for nearly 40% of sick leave. This is currently being analysed with the occupational health department.

⁽¹⁾ Institut pour une culture de sécurité industrielle.

	RTE			Contractors		
	2017	2018	2019	2017	2018	2019
Work-related accidents entailing sick leave	80	58	92	54	61	67
Work-related accidents not entailing sick leave	63	48	72	27	38	38
Total number of work-related accidents (with and without sick leave)	143	106	164	81	99	105
- including: cases of people being taken ill at work followed by sick leave	17	10	28	2	2	3

The “safety leadership” course constructed in 2019, which will be rolled out in 2020, is intended to give managers levers for developing their teams’ commitment to safety. Leadership in matters of safety is an essential lever for constructing a more robust culture of risk prevention.

Safety in the working environment and quality of life at work are also supported by the company’s commitment to offering employees varied, attractive career prospects and opportunities to develop their skills.

Job security and quality

RTE continues its policy of hiring employees principally on permanent contracts, regardless of their experience. Fixed-term contracts are mostly used for employees on work-study contracts.

Workforce at 31 December 2019

RTE had 9,314 employees at 31 December 2019, distributed as follows by type of contract:

Contract type	Operational staff	Supervisory and technical staff	Executives	Total
Permanent contracts (IEG and non-IEG status)	396	3,753	4,647	8,796
Temporary fixed-term contracts	216	277	25	518
- work-study contracts	209	264	-	473
- other	7	13	25	45
Total workforce	612	4,030	4,672	9,314

Workforce by age group:

Type of contract	under 25	25-34	35-44	45-54	55-59	60 and over	Total
Permanent contracts (IEG and non-IEG status)	343	2,446	2,885	2,394	1,093	235	8,796
% permanent contracts	3.9	27.8	26	27.2	12.4	2.7	100
Temporary fixed-term contracts	406	99	12	1	-	-	518
% temporary fixed-term contracts	78.4	19.1	2.3	0.2	0.0	0.0	100
- work-study contracts	387	78	7	1	-	-	473
- other	19	21	5	-	-	-	45
Total workforce	749	2,545	2,297	2,395	1,093	235	9,314
Percentage of total	8.0	27.3	24.7	25.7	11.7	2.5	100

Flexible working time and conditions

To enhance well-being at work and support a good work-life balance, RTE allows flexible working time and conditions through a number of collective bargaining agreements, including agreements on:

- teleworking: in 2019, more than 12% of employees work from home one or two days a week (compared to 7% in 2018);
- special working-time arrangements: several systems exist (multi-week cycles, working days of 8 h 45 min, etc.);
- donations of paid leave: in the first year, 105 days were donated by RTE employees under this scheme;
- family rights.

An enriched induction procedure for new employees

In 2019, an "Induction course for new arrivals" was added to the procedures for new employees joining RTE.

This course will be operational from the start of 2020. The aim is to help new employees integrate by giving them the principal information they need to know about the company. Every week, three new themes are offered in the form of e-learning to provide very practical support to help them integrate.

4.6.2 Encouraging skill development

● Description of the challenge

In the current situation of significant change in the electricity market, the need to support the energy transition, and the company's evolving functions and mission, developing and transforming skills is vitally important. In concrete terms, RTE's ambition is to make sure the right skill is in the right place at the right time.

● RTE's actions and commitments

Through its training policies, RTE supports employees' career development and professional mobility, and helps them increase their skills.

Professional development for employees

In a context of economic, technological and regulatory change, RTE's priority training areas are updated in accordance with the corporate mission statement.

In 2019, the key focuses of training for the period 2019-2021 were to consolidate the current base of fundamental skills while also adapting it to new technologies (e.g. connected objects, data processing), new ways of working (e.g. digital culture, managerial practices), new fields of intervention (e.g. underwater links) and incorporation of CSR into training (e.g. dialogue with stakeholders, environmental skills including the eco-design principle, reinforcing the workplace safety culture).

2019 was also marked by the application of the law of 5 September 2018 on the "Future of work", and a broader range of distance training options accessible to all employees on a more flexible basis than previously. RTE's training campus at Jonage, which provides training for several thousand employees every year, has begun extending under the "Transfo" project to become a site for synergies between face-to-face and distance training.

Training indicators	2017	2018	2019
Total hours of training	465,000	486,000	441,000
Average annual hours of training per employee	51	53	45
Training budget as % of total payroll	7.7	7.4	7.0

Redesign of the training course for a "supportive managerial line"

The corporate mission statement sets out new needs in the training priorities. RTE's manager training course needed restructuring to correspond to strategic priority 3: a supportive managerial line that motivates and supports the teams, to rise to the challenges facing the company.

The company's HR division therefore revised the core training offer and in 2019 offered:

- updated, modernised training appropriate to the accelerated pace of change in RTE's environment and organisation;
- a broader range of training responding to new professional development needs for managers, in connection with managerial fundamentals.

In the dedicated training trajectory for managers, a digital training course called "PRIMOLEAD" provides a toolbox and key pointers to help guide them through successful change management.

Finally, in 2019 action to raise awareness of social dynamics was devised for all managers, to help them understand how social regulation works at RTE. This will be rolled out in all the regions by the end of 2020.

A new professional dynamic

2019 was devoted to preparation of the "new professional dynamic" policy, which will be adapted in 2020 to share an integrated overview of the company's ambitions for internal mobility, and measures to support employees in the construction of their career path each year. In 2019, nearly 12% of employees moved to a new job within RTE.

To strengthen the cross-functional approach to career paths and give it a sound basis, this new policy reaffirms employees' responsibility in constructing their careers. It aims to give employees a better knowledge of career opportunities both inside and outside RTE. It also has a section specifically for managers, supporting the construction of their career paths.

Changes in the corporate ecosystem, whether of a technical, regulatory or economic nature, are leading RTE to apply forward planning and adjustments that involve redefining its activities and its employees' skills. The adaptation expected of employees relies on personal skills such as open-mindedness, curiosity, optimism, and a capacity for adaptation and learning. These skills contribute to the employability of personnel.

To give every employee greater visibility over his/her career opportunities at RTE while making the most of all his/her skills, RTE has introduced a new augmented intelligence-based system.

The Employee Passport

A prototype Employee Passport (*Passeport salarié*) was tested during the first half of 2019 with employees in the Lille area. This "passport" can be used by employees to keep a record of their skills and experience in work and non-work fields. It encourages them to assess their own skills and helps them position themselves in all sectors of the company. During its experimental phase, this "passport" system resulted in some employees consulting their manager and/or career advisor to discuss their prospects in a separate meeting from the annual evaluation interviews.

This experiment was continued during the second half of the year, to inform employees of vacant posts. After this second phase the Employee Passport will be rolled out to all RTE employees.

Innovative recruitment practices

In 2019, RTE extended the concept of co-hiring. Under this principle, RTE hires an external candidate for a succession of two different jobs: the employee acquires skills rapidly in the first job before moving on to a second, predefined job. This practice gives the new recruit an opportunity to internalise the company's culture and organisation rapidly. It can promote cross-function exchanges, limit over-compartmentalised operation and develop cooperation.

"Job switching" is another form of co-hiring that concerns not one but two candidates hired from outside the company, who swap their jobs after a certain period. Since the initial experiments with this practice in 2018, 11 co-hires are currently in process: 2 of them began in 2019, and the 11 employees concerned include 3 "job switching" pairs.

Transfers between TSOs

Since 2017, RTE has been a participant in a new exchange scheme between transmission network operators called "Erasmus TSO", which allows any RTE employee to join another European TSO for a temporary period, without changing their contract. RTE's voluntary involvement offers its employees an opportunity to experience the organisation used in a European counterpart, increase their skills and adaptability, and thus enhance their employability.

In 2018, RTE registered more than 40 applicants and an equivalent number of offers on the common platform used by members of Erasmus TSO. Five new exchanges took place in 2018, and twice as many in 2019. At 31 December 2019, 15 employees of RTE were working at Terna, TransnetBW, EirGrid, REE and Swissgrid under this scheme.

Secure outplacements and external transfers

In addition to all the procedures designed to guarantee the employability of its personnel, RTE has set up secure support arrangements for employees who want to start their own business or take up a different type of salaried employment in a company of their choice.

Such outplacement contributes to local economic development and develops the entrepreneurial culture at RTE, offering alternative career and professional development options to employees with a career change plan. RTE is encouraging this mechanism by offering confidential tailored support that goes further than legal requirements.

Protected voluntary outplacement leave is also available, allowing employees to enhance their career path by spending time at another company while retaining the option for a certain period to return to RTE. For RTE, the experience gained by an employee at an external company provides the benefit of openness to other methods, cultures, etc. In 2019, RTE accepted five applications for protected voluntary outplacement leave, mostly to industrial firms in the energy sector.

4.6.3. Encouraging social dialogue

● *Description of the challenge*

RTE is aware of the challenges associated with the need for social cohesion and has always considered social dialogue very important in implementing its human resources policy. This importance has been reinforced in accordance with the changes of recent years in French laws (particularly the “Macron orders”), which are increasingly making collective bargaining a prerequisite for a large number of policies with social consequences. With its strong public service mission culture, RTE has always favoured social dialogue to support organisational change.

The channels of social dialogue have evolved over the last few years so that employees’ views are taken into greater consideration: as well as the traditional channels of hierarchy and employee representation, a participatory channel is used. RTE increasingly refers to its internal “social barometer” survey to devise action plans, and set up a collaborative platform for employees from 1 October 2019 to promote participation by everyone in the execution of the Impetus and Vision mission statement. More than 2,200 employees have logged on so far, and 232 contributions have been posted.

● *RTE’s actions and commitments*

For RTE, management and employees are the central components of social dialogue.

Project to change social dialogue

2019 was marked by a recast of the social landscape, driven by the “Macron orders” of 2017. After several months of negotiation, an agreement on social dialogue was signed on 13 June 2019, leading to introduction of new employee representation and union bodies.

The declared aim of this new architecture is to have more strategic, effective social dialogue that is more appropriate to the company’s needs. The specificity of RTE’s agreement is that it assigns an important role to local representatives in keeping with the corporate values of local ties, it reinforces social dialogue about health and safety and working conditions, and it creates cross-function bodies and events (“Life on Site” meetings, interfunction meetings).

Raising managers’ awareness of social dynamics

The HR division produced a course that has been used in the regions to familiarise the entire managerial line with the issues and benefits of social regulation. 11 one-day sessions attended by an average 40 managers were held in 2019.

Support for change in accordance with the corporate mission statement

This support mainly takes the form of:

- bilateral consultation meetings on changes to the themes in the corporate mission statement, under a schedule developed in 2019 and early 2020;
- negotiations and consultations in 2020-2025 to support change (working time, measures to support mobility, etc.).

Collective agreements signed at RTE in 2019

- Agreement on the terms for access and use of information and communication technologies by unions and employee representatives at RTE.
- Pay measures agreement for 2020.
- Pre-election memorandum of understanding for elections of members of the central social and economic committee.
- Pre-election memorandum of understanding for the elections of members of the company social and economic committees held on 14 November 2019.
- Agreement on career paths for employees with employee representation and/or union duties.
- Agreement on support measures for the initial introduction of company social and economic committees at RTE.
- Agreement on social dialogue and personnel representation at RTE.
- Agreement on elections of members and deputy members of RTE's central social and economic committee.
- Amendment to the agreement of 14 May 2007 concerning additional measures applicable to shift-workers at RTE.
- Collective agreement concerning the number and scope of separate entities at RTE.
- Collective agreement concerning the methods for holding the elections of RTE's social and economic committees by electronic vote on 14 November 2019.
- Amendment to the agreement of 21 December 2015 on workplace equality and the gender balance at RTE.
- RTE agreement on the method for allocating the additional profit share paid for 2018.

4.6.4 Encouraging diversity, inclusion and workplace equality

Description of the challenge

Diversity, gender balance, and inclusivity are necessary in every company to maintain social cohesion and prosperity. This applies particularly to RTE due to its presence across the entire French territory, the diversity of its business activities, and its societal mission.

• RTE's actions and commitments

RTE is committed to developing each employee's potential and the diversity of profiles at the company by promoting gender equality, employment for young people and integration of disabled employees.

A recruitment policy that promotes equal opportunities and social integration

RTE's recruitment policy aims to hire competent, dedicated employees who are able to adapt to a technical environment that is set to see considerable change in the long term.

Recruitment remains an essential lever for increasing the proportion of female employees in the company, and RTE is continuing its efforts in that area. RTE requires each shortlist presented by recruitment consulting firms to include at least one female candidate with equivalent skills. In 2019, the proportion of externally-hired female employees reached 26.2% in certain functions where the proportion of qualified women is very often lower.

40% of new employees hired are under 26, and 57% are under 30. The 45-and-over age group accounts for 7% of new recruits (an increase of 1.5 points). In 2019, 16 employees officially recognised as disabled were hired by RTE on permanent contracts.

Finally, RTE pays close attention to "unusual" profiles: candidates changing careers or with non-standard experience, or who have had breaks in their working life.

An ambitious policy for gender equality at work

An amendment was signed in 2019 to RTE's 2015-2018 agreement for gender equality, extending it by an additional year. Through this agreement, the company is committed to guaranteeing equal pay and increasing the gender mix in its teams.

At RTE, gender equality at work is a factor taken into consideration in decisions regarding pay rises, and starting salaries are identical for men and women.

The percentage of women in RTE's workforce at 31 December 2019 was 22.7%, compared to 22.4% in 2018, an increase of 0.3 point after three years of relative stability.

Percentage of women in RTE's workforce

	2017	2018	2019
Percentage of workforce on work-study contracts	21.55%	22.4%	22.7%

The percentage of women in the management committees increased by 0.8 points between 2018 and 2019 to 25.4%. This is in line with RTE's declared ambitions and results from inclusion of this criterion in the considerations of internal transfer committees.

Percentage of women in the management committees

	2017	2018	2019
Percentage of women	19.5%	20.6%	25.4%

In 2019, the capacity of the intercompany crèche was multiplied by four (from 20 to 80 places for children of RTE employees).

Integration of young employees

To encourage employment of young people, RTE accentuated its policy of hiring under work-study programmes, taking on nearly 473 work-study students in 2019, 31.5% of them women. These students accounted for almost 5.4% of the company's total workforce.

Mentoring plays a special role in the work-study dynamic at RTE, where it is considered as an inter-generational connection that enriches the lives of both parties. Mentoring helps the student learn skills fast, and gives the mentor a better appreciation of younger generations.

In 2019, at least 223 employees on work-study contracts passed their final year of training, giving a success rate of at least 76%.

	2017	2018	2019
Percentage of workforce on work-study contracts	5.7%	5.8%	5.4%
Number of interns	311	305	223

In March 2019, RTE was given an award by the Lille-based "Pépites de l'alternance 2019" event, organised by the Hauts-de-France region, for its commitment to work-study programmes.

Integration of disabled employees

The 2018-2020 agreement for integration, retention and career development of disabled employees was signed unanimously by RTE's management and all social partners in April 2018.

In 2019, 16 employees officially recognised as disabled⁽¹⁾ were hired on permanent contracts, and 13 on work-study contracts.

RTE continued to take practical action through its partnership with the Arpejeh⁽²⁾ association supporting study projects for disabled students, which it founded in April 2008 together with SFR, Air France, L'Oréal and LVMH. This association exists to improve and promote training, qualifications and employment for disabled people.

In parallel, on 16 May 2019, RTE participated in the DuoDay operation organised by AGEFIPH⁽³⁾ (pairing disabled people with volunteer employees to overcome prejudice), setting up ten "duos". This action contributed to the total of 29 disabled interns who worked at RTE in 2019.

In application of its disability agreement, RTE's Disability Mission organised an event to mark its halfway point: the Disability Connection Forum, held in September 2019 at RTE's head office. This forum was a place for discussion concerning disabled employees and their inclusion in the company.

(1) I.e. with the status of RQTH: reconnaissance de la qualité de travailleur handicapé.

(2) Accompagner la réalisation des projets d'études de jeunes élèves et d'étudiants handicapés.

(3) Association de gestion du Fonds pour l'insertion professionnelle des personnes handicapées.

This informative event with its many speakers was attended by 250 guests, François Brottes, the Chairman of the Executive Committee, and a large number of internal and external actors.

In a similar vein, RTE took part in the annual European Disability Employment Week on 18-24 November 2019, organising awareness-raising workshops all over France.

Prevention and reporting of discriminations

To extend its actions to promote diversity and its “guide to legitimate questions and appropriate responses” produced for managers in 2018, RTE’s Human resources division began work in 2019 on an anti-discrimination guide for all employees, entirely co-constructed with all the trade unions.

A pay policy that promotes equity

The starting salary for a new employee is set by the recruiters’ network based on rules laying down the principles for starting salaries. Each qualification has a corresponding level of remuneration depending on its characteristics (type of school/university, work-study training, etc.). The value of experience is based on certain criteria (match for the post being filled, scarcity of skills and comparison with the market). To ensure fair treatment, each salary offer also takes into consideration the salary paid to the population of existing employees with the same job. Nearly 99% of RTE’s employees receive some performance-related pay each year based on their individual performance the previous year.

In 2019, salaries rose by an average 2.7% (compared to 3.55% in 2018), including 1% for the general rise applicable in the electricity and gas (IEG) sector to compensate for the increase in CSG social contributions. Individual variable (performance-related) pay was equivalent to 5.46% of basic pay, excluding employees seconded to unions or subsidiaries (the proportion remains stable).

Employees also benefit from a share of profits under an agreement negotiated with unions for three-year periods.

The average amount of profit share per employee was €1,893 in 2019, giving a total of €17 million based on RTE’s 2018 performance. Investing this in the company savings and/or pension plans enabled

employees to benefit from a total additional €13.2 million in matching contributions by the company to those plans.

In 2019, RTE signed a measure contained in the pay rise agreement to assign specific pay rises to office workers aged over 50 with low-level salaries.

Finally, RTE paid the “Macron bonus”, intended to increase purchasing power for workers on the lowest wages, to nearly 2,200 employees.

4.6.5 Commitment to the community

● Description of the challenge

The partnerships and initiatives of all kinds undertaken by RTE (for the environment, the company, society as a whole) support corporate life through strong commitment to involvement in the regions and local action.

● RTE’s actions and commitments

Skill sponsorship

Skill sponsorship is a practical expression of RTE’s human commitment to the public interest, a value that is closely bound up with the company’s history and is a factor in cohesion between employees.

This lever for mobilisation responds to the needs of employees who want meaning, openness, and new avenues in their work. It concerns fields as varied as missions for the charity *Électriciens sans frontières* (Electricians Without Borders), the Institut de l’engagement (Commitment Institute), the RTE Foundation, and France’s voluntary fire brigade: in addition to this “traditional” list, in 2019 an agreement was concluded to support the French Armed Forces Ministry’s military reserve force policy.

RTE employees who work with these entities are making practical contributions to generalising access to energy, supporting young people coming to the job market, fostering solidarity between geographical areas, supporting the military reserve forces, and helping their fellow citizens.

They provide expertise, enthusiasm and a fresh approach to serve these missions, which are as ambitious as they are crucial. In return, they have new opportunities to develop their adaptability and their talents (such as leadership or managing projects).

Apart from the diversity of the fields covered, all of RTE's skill sponsorship actions take a long-term perspective, as reflected in the successive renewals of multi-year agreements with *Électriciens sans frontières* and the Commitment Institute. This continuity enriches mutual knowledge, reinforces bonds between RTE employees and the beneficiaries of their skills, and firmly embeds skill sponsorship in the company's practices and DNA.

Socially-responsible commitment to the regions and local areas in France

● *Commitment Institute*

RTE and the Institut de l'engagement (Commitment Institute) joined forces in June 2013 to promote employment for young people.

The Institut de l'engagement is a French charity that spots high-potential young Europeans aged 16-25 engaged in a national volunteer service: they do not necessarily have qualifications, and come from varied backgrounds. It then aims to give these people "a hand" to help them into training/education and careers.

In 2019, RTE's employees once again took part in:

- the panels that shortlist candidates;
- thematic workshops (at the Commitment University event at the Sorbonne in Paris in October 2019, employees were mobilised to make a presentation on "Careers relating to the Environment and Nature");
- the institute's job forum (where recent graduates looking for a job or work-study contract can meet people from RTE and discuss their backgrounds and career plans);
- sponsorship operations.

● *France Active*

France Active is a local charity network with branches all over France, that helps people in difficulty to set up their own business or find employment.

In these times of high youth unemployment, France Active has developed the Cap'Jeunes programme which supports and funds business creation projects by young people under 26 who are unemployed or in a precarious work situation. RTE has supported this programme since 2017.

In 2019, for every euro donated by an employee, RTE gave an additional €2 to this charity.

Support for housing

Some of RTE's real estate properties have characteristics that make them suitable for innovative projects with social housing actors in local areas. For example, one project in the city of Nantes concerned three empty neighbouring houses belonging to RTE that were previously used as accommodation for employees on standby duty. The project was developed over nearly two years building on the experience of a local association that helps people to integrate into society through housing, with investment from a group of Nantes architects and consultation with local residents. Finally in 2019, in a sponsorship operation, ownership of the houses was transferred to the association, so they could be converted into temporary accommodation for vulnerable people who have no home.

RTE is currently working on the rest of its unused real estate, together with social and emergency housing actors, to identify opportunities for new projects.

Socially responsible commitment beyond national borders

RTE's support for the charity *Électriciens sans frontières* is another extension of the company's values of solidarity and social responsibility. RTE has chosen to provide particular support for work that meets vital needs, especially access to energy and water. Employees are seconded to ESF on a voluntary, temporary basis, and RTE makes an additional 100% contribution up to a maximum amount set by agreement.

Sponsorship of projects supported by the RTE Foundation

The RTE Foundation is accentuating its action to stimulate local area dynamics through sponsorship of co-funded projects, all devoted to economic, social and cohesive development of rural areas.

80% of the projects supported benefit from assistance from a current RTE employee who is the project's designated sponsor alongside the Foundation. The task of these employees is to help the Foundation to monitor the project's implementation, notably verifying that the subsidy is used correctly, and report on progress.

These 370 sponsors embody the company's values of open-mindedness and solidarity with local areas, which have been passed on to the Foundation. Some symbolic milestones were reached this year: since the Foundation was established eleven years

ago, close to 500 projects have been supported, covering all areas of mainland France, except for the immediate suburbs of Paris, a total of over €10 million of subsidies have been provided, and 8,000 jobs have been created or maintained in rural areas.

2019 saw the largest-ever programme in the Foundation's history, with €1.4 million of subsidies given.

The Foundation has also supported development of new forms of collective impact through coordinated intervention with other foundations: Fondation de France, Fondation Avril, Fondation Macif, Fondation du Crédit Coopératif, Fondation Carasso, and the Rural Mouvement fund.

As a laboratory for social innovation, the RTE Foundation has contributed to reflection, capitalisation, research and multi-actor innovative inter-area

cooperation projects to benefit the rural world. Some of these projects have won national awards.

For stakeholders in the RTE Foundation, new forms of community coordination have been introduced: an internal seminar for the RTE employees involved, notably the sponsors, and creation of Foundation workshops for the beneficiary associations. These events were so popular that they will be repeated in 2020. In April 2019, RTE approved a Vision 2030 plan for the Foundation setting a trajectory concentrating on support for general interest projects benefiting rural areas, conducted by social entrepreneurs. Drawing on this framework, the Foundation has defined a three-year work programme to modernise its practices in favour of actors in the social and inclusive rural economy.

05 — ECONOMIC AND FINANCIAL PERFORMANCE



5.1 ECONOMIC ENVIRONMENT

Gross consumption in mainland France (including Corsica) totalled 474 TWh, 1% less than in 2018. The decrease resulted from generally milder temperatures in February and March 2019, and less vigorous economic growth than in 2018.

Consumption by major industrial sites directly connected to the public transmission network declined by 3% compared to 2018 to 64.3 TWh⁽¹⁾. This downturn concerned the steel, paper and cardboard, automobile and rail transport sectors.

The highest peak in electricity consumption was 88.5 GW at 7 pm on 24 January 2019, during a significant episode of snow. This is consistent with the average peak level for the last twenty years in France.

The total generation fleet capacity in mainland France is 135,328 MW.

Installed wind power capacity stood at 16,494 MW at 31 December 2019, up by 9% from 2018. 890 MW of solar power capacity was connected in mainland France during 2019, bringing total installed solar power capacity to 9,435 MW by the end of the year (a 10.4% increase in one year).

Total electricity output in France in 2019 was 537.7 TWh, down by 2% (11 TWh) from 2018. Renewable energies account for more than 21% of total electricity production despite a 12% decrease in hydropower output compared to 2018. Wind and solar power output increased by 21.2% and 7.7% respectively.

The share of nuclear power, which accounted for 70.6% of French electricity in 2019, declined by 3.5% while the share of fossil-fuel generation (essentially by gas-fired plants) increased by 9.8%.

France was a net exporter to the extent of 55.7 TWh in 2019, down slightly from 2018 but still keeping France in the position of biggest exporting country in Europe.

Cross-border power exchanges remained very volatile throughout the year, ranging from a net import balance of 9.3 GW at 9 am on 19 November to an unprecedented net export balance of 17.4 GW at 4 pm on 22 February. These variations illustrate the flexibility of the French electricity system and how European solidarity is possible thanks to the existing interconnections.

The situation for contractual cross-border power exchanges was as follows in 2019:

- France was a substantial net exporter to Spain (balance of 9.7 TWh);
- France remained a net exporter to central and west Europe (Germany and Belgium) (balance of 2.7 TWh);
- The net export volume to Italy was again significant, at 18.8 TWh;
- France remained a net exporter to Switzerland (13.2 TWh);
- The net export volume to the United Kingdom was 11.3 TWh.

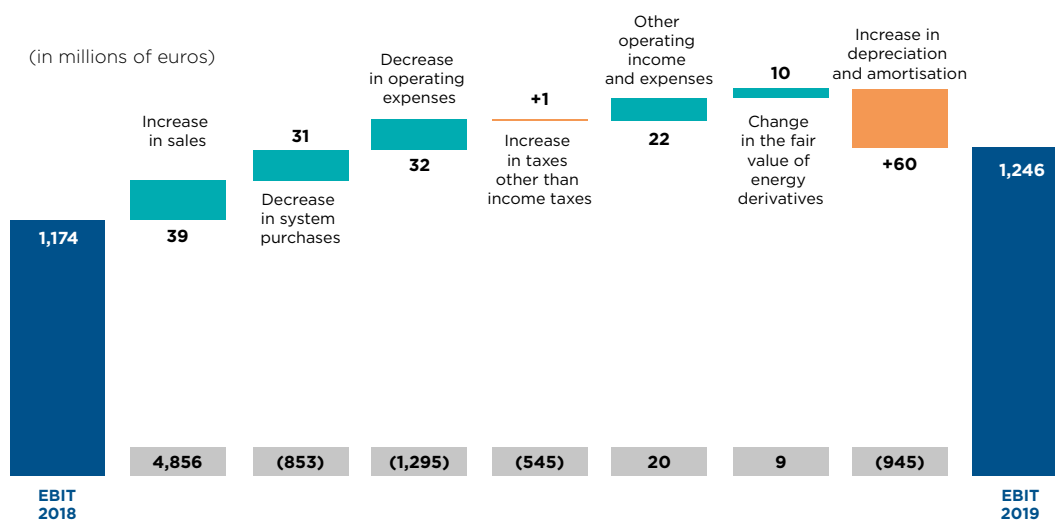
(1) Including self-consumption and excluding network losses and energy sectors, after adjustment for seasonal variations.

5.2 RESULTS, EBIT AND FINANCIAL STRUCTURE

These results are presented under IFRS.

5.2.1 Business and results in 2019

● 5.2.1.1 Change in EBIT: +€73 million



RTE's EBIT increased in 2019 by €73 million (+6%) compared to 2018, reaching €1,246 million. The factors contributing to this increase are explained below.

RTE's sales for 2019 amounted to €4,856 million compared to €4,817 million in 2018.

The €39 million increase (+1%) in 2019 is the combined result of the following effects:

- network access income (withdrawals and injections) was down by €22 million (-1%) to €4,278 million. This decline was due not only to the structurally lower level of withdrawals and capacities of industrial actors and distributors, but also to the weather effect which was unfavourable overall to RTE in 2019, although it was mitigated by the impact of tariff increases⁽¹⁾ introduced in 2018 and 2019;

- income from interconnections increased by €45 million (11%) to €450 million, and includes:
 - capacity revenues from interconnections, which are based on price differentials between national electricity markets, and were €54 million lower than in 2018;
 - for the first time in 2019, the sale of interconnection capacity guarantees via the Epex market for €99 million, which had no equivalent in 2018. In 2019, RTE began to participate in the capacity mechanism⁽²⁾ as an installation operator, via its interconnections;
- income from services rose by €16 million to €128 million. A key factor in this increase was the higher level of relocation of non-network infrastructures.

(1) As RTE is a regulated monopoly, network access income does not correspond to a market price but results from the TURPE tariff for use of the public electricity transmission network, which is set in a regulation issued by the French electricity market regulator CRE, an independent administrative authority. Following the CRE's decision of November 2016 defining the rules for the new TURPE 5 tariff which took effect on 1 August 2017, the hourly/seasonal adjustments in the tariff were reinforced. The subsequent tariff rises decided by the CRE were 3% from 1 August 2018 and 2.16% from 1 August 2019.

(2) This mechanism and its impact on the Group's consolidated financial statements are described in note 2.7 "Sales" in section 6, "Consolidated financial statements".

The total amount of electricity system operation purchases was **€853 million** in 2019, down by **€31 million** from 2018.

Electricity system operation purchases comprise:

- purchases of energy and capacity guarantees to compensate for electricity losses from the network (€423 million in 2019), which are auctioned and bid for by many actors, and operations on organised markets (Epex Spot and EEX);
- purchases for voltage ancillary services and balancing reserves (€304 million in 2019), on economic terms approved by the French energy regulator CRE;
- congestion costs (€17 million in 2019), i.e. the surplus costs generated by output adjustments in response to the operating constraints for the internal network or interconnection lines;
- interruptible load contracts (€79 million in 2019), introduced for the first time in 2014 and reinforced by the law on the energy transition for green growth, which follow an annual tender procedure;
- the balance of the "Balance Responsible Entity – Balancing Mechanism" account (€4 million in 2019), used for all income and expenses intended to maintain the supply-demand balance in the electricity system;
- exchange contracts between transmission system operators (TSOs) (–€1 million in 2019): mutual assistance services to neighbouring TSOs for the requirements of their own supply-demand balance;
- RTE's contribution to the balancing mechanism for network usage costs related to international transit (ITC) between European network operators (€22 million in 2019);
- load-shedding contracts (€6 million) to temporarily reduce the level of withdrawals by a consumption site; since 2018, the cost borne by RTE has been reimbursed by the contribution to the public electricity service (CSPE).

The **€31 million** decrease in electricity system operation purchases is mainly explained by the following effects:

- the lower cost of purchases of electricity to compensate for network losses, notably due to a price effect;
- the lower cost of system services, due to favourable price effects, particularly on primary and secondary reserves;
- the lower cost of load shedding due to the result of the tender procedure (€6 million in 2019, compared to €11 million in 2018);
- despite a rise in charges related to interruptible load contracts due to payment of a bonus in 2019 to one actor that did not qualify in 2018 because of a failing in its industrial site.

Operating expenses decreased by €32 million from 2018 to **€1,295 million**.

The main changes concerned technical effects:

- **other purchases and services⁽¹⁾** (€572 million in 2019) were €40 million lower than in 2018, mainly as a result of the first application of IFRS 16 concerning leases (–€36 million). Lease expenses have been partially reclassified as interest expenses (+€5 million), reducing the financial result, and partially as depreciation expenses (+€32 million);
- **net personnel expenses⁽²⁾** (€722 million in 2019) increased by €7 million. This increase is principally explained by the following two developments:
 - a **+€10 million** increase relating to the pay policy (mainly wage rises and employers' social security contributions),
 - a **–€3 million** decrease associated with long-term and post-employment benefits (effect of discount and inflation rates) and an increase in the capitalised share of labour costs.

Other operating income and expenses totalled a positive €20 million in 2019, up by €22 million from 2018. This increase is largely explained by indemnities received to compensate for damage, including one indemnity received from the *Saga Sky* cargo ship operator for damage caused to the IFA 2000 interconnection (+€17 million); sales of assets, including the Cuirassiers site (+€35 million); litigation in process (up by €10 million, with an unfavourable effect on other operating income and expenses) and operating subsidies (–€11 million).

(1) Reported net of the portion allocated to investments.

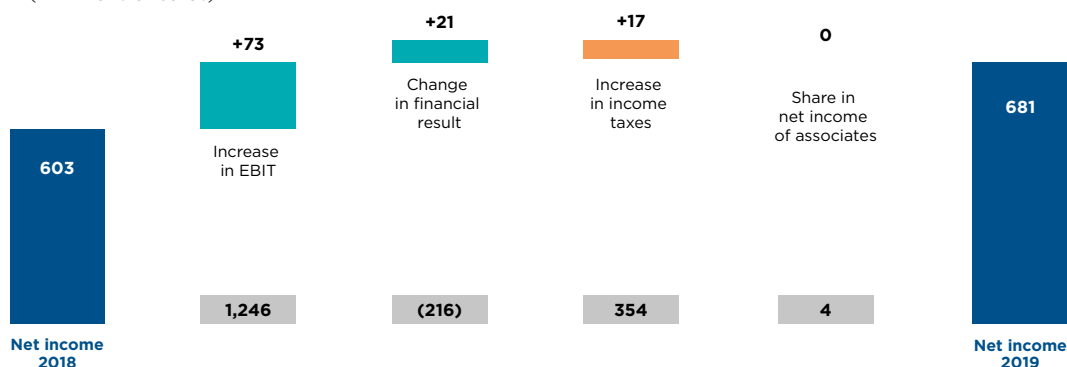
(2) The definition used also covers net increases to provisions for employees (for long-term and post-employment benefits, the employer's contribution to profit sharing on behalf of employees, etc.). This item is also reported net of the portion allocated to investments.

Depreciation and amortisation amounted to **€945 million**, €60 million more than in 2018, reflecting growth in investments. In 2019 for the first time, depreciation and amortisation include €32 million⁽¹⁾

of depreciation in respect of the rights of use contained in lease arrangements (due to the first year of application of IFRS 16).

● 5.2.1.2 Change in net income: +€77 million

(in millions of euros)



In 2019, the **net income increased by €77 million** over 2018 to reach **€681 million**.

Income taxes, totalling **€354 million**, increased by €17 million from 2018.

The **financial result** was a **net expense of -€216 million**: financial expenses decreased by €21 million from 2018, despite the €589 million rise in the bond debt, thanks to a lower average interest rate (1.84% at 31 December 2019, compared to 1.97% at 31 December 2018). In September 2019, RTE issued a €500 million zero-rate bond and a €700 million bond at 1.125%. A €600 million bond with coupon of 2.125% also matured in September 2019.

This change is explained by the effect of the tax basis, which was offset by the following favourable effects:

- the decrease in irregularly deferred depreciation and amortisation, which had a favourable impact of €2 million on income taxes compared to 2018;
- discontinuation of the cap on deductibility of financial expenses, which had a favourable impact of €19 million on income taxes compared to 2018.

⁽¹⁾ See note 2.13 "Leases" in section 6, "Consolidated financial statements".

RTE Group income statement under IFRS at 31 December 2019

(in millions of euros)	2019	2018	Change 2019-2018
Sales	4,856	4,817	39
network access: withdrawals	4,188	4,207	(19)
network access: injections	90	93	(3)
network access: interconnections	450	405	45
other services	128	112	16
System purchases	(853)	(884)	31
Operating expenses	(1,295)	(1,327)	32
other net purchases	(572)	(612)	40
net personnel expenses	(722)	(715)	(7)
Taxes other than income taxes	(545)	(544)	(1)
Other operating income and expenses	20	(3)	22
EBITDA	2,182	2,059	123
Net changes in fair value on energy derivatives	9	(1)	10
Net depreciation and amortisation	(945)	(884)	(60)
EBIT	1,246	1,174	73
Financial result	(216)	(237)	21
Consolidated profit before tax	1,031	937	94
Income tax	(354)	(337)	(17)
Share in income of associates	4	3	0
Net income	681	603	77

Reconciliation between RTE's net income under IFRS and RTE SA's net income under French GAAP

(in millions of euros)	2019	2018
RTE net income under IFRS	681	603
Impact of subsidiaries, net of intragroup transactions	(8)	(6)
Impact of intragroup transactions via profit and loss ⁽¹⁾	4	5
Impact of differences in accounting treatment under French GAAP and IFRS	(105)	(88)
RTE SA net income under French GAAP	573	514

(1) Corresponding to elimination of internal dividends.

● 5.2.1.3 Changes in the return on capital employed and return on equity

Key figures for RTE under French GAAP

(in millions of euros)	2019	2018
Income statement		
Sales	4,792	4,763
EBIT	1,116	1,095
Financial result	(230)	(250)
Net income	573	514
Balance sheet		
Economic assets at 1 January	15,779	15,361
Fixed assets at 31 December		
gross	34,334	33,132
depreciation and amortisation	16,469	15,735
net	17,865	17,397
Equity at 31 December	7,330	7,000
Net indebtedness (gross indebtedness adjusted for cash)	9,197	8,917
ROCE	7.1%	7.1%

Based on **RTE's individual financial statements** under French GAAP⁽¹⁾, the **return on capital employed (ROCE)**⁽²⁾, calculated as the ratio of EBIT to capital employed by RTE for its business activity, was 7.1% for 2019, stable compared to 2018.

This percentage can be compared to the ROCE expected by the regulator when setting the TURPE 5 tariff, which is based on the normal level of remuneration defined in the tariff (6.125%) adjusted for the effects of clearing regulation accounts or smoothing of network access income, as well as the reductions required by the CRE. The expected level of ROCE for 2019 was 6.0%.

The ROCE in 2019 was thus 1.1 points higher than the expected ROCE (7.1%, compared to 6.0%). This difference is essentially attributable to lower expenditure on system operation (the return was lower than expected for frequency and interruptible load system services); more than 80% of the differences observed are eligible for the income and expenses adjustment account (CRCP)⁽³⁾.

The **return on equity (ROE)**⁽⁴⁾, calculated as the ratio of net income to equity, was 11.9% (10.6% in 2018).

(1) This basis for calculation is used to ensure consistency with the terms of calculation for the TURPE tariffs, which are based solely on RTE's financial statements under French GAAP.

(2) To remain coherent with the regulator's view, EBIT for the year is divided by the economic assets as reported in the balance sheet at 1 January of the year concerned.

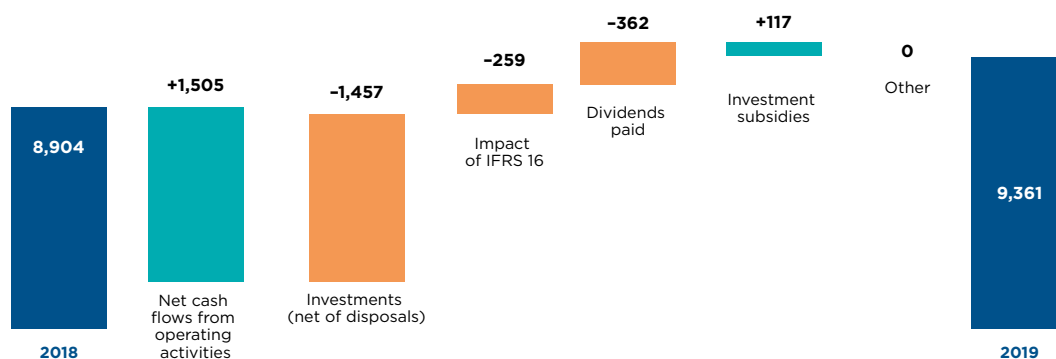
(3) A mechanism to measure and offset differences between the actual figures and the forecasts on which tariffs are based.

(4) Return on equity is calculated for the RTE Group based on financial statements under IFRS, using the equity value at 31 December.

5.2.2 Financing

Increase in net indebtedness: +€456 million

(in millions of euros)



The year-on-year increase in RTE's net indebtedness is explained by the following:

- net cash flows from operating activities⁽¹⁾, which generated resources of €1,505 million;
- investments net of disposals, amounting to €1,457 million. Investment expenditure approved by the CRE for 2019 amounted to €1,456 million (see table below);
- the first application of IFRS 16, which led to recognition of a lease liability amounting to €259 million at 31 December 2019;
- dividend payments out of 2018 profits, totalling €362 million.

Investment expenditure approved by the CRE

Categories (in millions of euros)	2019	2018
Network	1,215	1,203
Major transmissions and interconnections	426	345
Regional networks	789	858
Information systems	161	155
Logistics	80	90
Total investments for the scope regulated by the CRE⁽¹⁾	1,456	1,447

(1) Excluding disposals.

(1) Net cash flows from operating activities include the free cash flow and the change in working capital.

5.2.3. Financial structure

Equity amounted to €5.731 billion at 31 December 2019. Net indebtedness stood at €9.361 billion at 31 December 2019: €10.833 billion in financial indebtedness less cash and short-term financial assets amounting to €1.472 billion.



The gearing (net financial indebtedness/equity) increased from 1.57 at the 2018 year end to 1.63 at the 2019 year end

(1) Investments nets of disposals for the Group at 31 December 2019.

NB: figures for the RTE Group comply with IFRS, except for the return on capital employed which is calculated based on the parent company RTE's individual financial statements under French GAAP, for reasons of comparability with regulation parameters.

5.3 OUTLOOK FOR 2020

The TURPE 5 transmission tariff is revised on 1 August each year. After an initial increase of +6.76% on 1 August 2017, the date when the TURPE 5 first took effect, subsequent revisions were due on 1 August in the years 2018, 2019 and 2020; the change for the following year is based on current year consumer price and household consumption indexes and a correcting factor to balance the income and expenses adjustment account (CRCP). The tariff increase of 1 August 2019 was +2.16%, and the change on 1 August 2020 will be determined by the CRE on the basis of inflation observed in 2019 and any variances in 2019 on items eligible for the CRCP.

RTE's gross investment budget approved by the CRE for 2020 is €1,808 million, €352 million more than the actual investments of 2019 and €166 million above the authorised investment budget for 2019.

This increase is explained by a combination of several factors: progress made on work to develop the offshore network (particularly connection of the Saint-Nazaire wind farm), development of major network adaptation projects (including a ramp-up in work on the Avelin-Gavrelle line and deferral to 2020

of work on the Haute-Durance project), a greater number of connections (including the West Brittany CCG plant), an increase in network renewal (including the local plan to put power lines underground at Villeneuve-la-Garenne), and continuation of the digitisation of substation command and control (digital infrastructure). As completion nears for the IFA2 and Savoy-Piedmont projects, the pace of expenditure is slowing. The 2020 investment budget also includes €161 million for information systems and €86 million for real estate and logistics. Both these amounts are regulated separately from the amounts for other types of investment.

In a fast-changing energy market, RTE's investment strategy is continuing to evolve in response to the network impacts of the rise in renewable energies, and the increasing age of the network facilities.

In addition to these factors, RTE's prospects remain dependent on unpredictable developments in the weather and electricity generation plans (which affect the volumes withdrawn, losses, congestion and damage), movements in electricity prices (which affect expenses to cover network losses and income from allocation of interconnection capacities), and the general economic climate.

5.4 DETAILS OF SUBSIDIARIES

5.4.1 Subsidiaries and investments at 31 December 31 December 2019

(in thousands of euros) Company	Share capital	Gross value of shares owned	Impairment	% of capital owned directly by RTE	Loans and advances ⁽¹⁾	Sales	Equity	Net income	Dividends received in 2019
ARTERIA	650	650	-	100	-	12,270	12,558	1,688	300
RTE INTERNATIONAL	2,000	2,000	-	100	2,000	9,135	2,859	199	40
AIRTELIS	10,000	10,000	-	100	12,240	18,231	17,054	1,077	-
RTE IMMO	763	6,865	-	100	-	-	6 928	(73)	-
IFA2	500	250	-	50	-	371,677	465	5	-
CIRTÉUS	2,575	2,575	-	100	500	14,614	6,673	1,126	300
HGRT	52,119	20,854	-	34	-	-	91,658	10,669	3,570
CORES0	NA	NA	-	16	-	NA	NA	NA	-
INELFE	2,000	1,000	-	50	-	11,606	16,638	281	-
CELTIC INTERCONNECTOR	100	50	-	50	-	-	100	(75)	-
JAO	NA	NA	-	5	-	NA	NA	NA	NA
DECLARANET	NA	NA	-	12	NA	NA	NA	NA	NA

NA: Information not available.

(1) Made by RTE and still outstanding.

RTE comprises the parent company RTE, five subsidiaries which are directly fully-owned by RTE and fully consolidated, three jointly-controlled companies (INELFE, IFA2 and Celtic Interconnector, consolidated as joint operations) and two companies in which RTE exercises significant influence (HGRT and

CORES0, associates), which are accounted for by the equity method. RTE also holds investments in two other companies, JAO and Declaranet.

The activities of RTE's subsidiaries are described in section 2.2 "History of RTE".

5.5 OTHER FINANCIAL INFORMATION

5.5.1 Subsequent events

None.

5.5.2 Breakdown of supplier payables by maturity

In compliance with articles L. 441-6-1 and D. 441-4 of the French Commercial Code (*Code de commerce*), the breakdown by maturity at year end of the balance of amounts payable by RTE to suppliers is as follows for the last two years

(in thousands of euros)	<30 days		30-60 days		>60 days	
	2018	2019	2018	2019	2018	2019
Payables due	18,638	14,475	6,248	1,510	31,150	220
Payables not yet due	273,794	265,330	71,020	65,236	–	–
Total	292,431	279,806	77,269	66,745	31,150	220

5.5.3 Breakdown of customer receivables by maturity

In compliance with articles L. 441-6-1 and D. 411-4 of the French Commercial Code (*Code de commerce*), the breakdown by maturity at year end of the balance of amounts receivable from customers is as follows for the last two years

(in thousands of euros)	<30 days		30-60 days		>60 days	
	2018	2019	2018	2019	2018	2019
Receivables due	(16,892)	(11,478)	43,354	2,381	12,433	13,888
Receivables not yet due	551,265	583,757	–	–	–	–
Total	534,373	572,279	43,354	2,381	12,433	13,888

The credit balance of receivables due is explained by the amount concerning the JAO (Joint Allocation Office).

The JAO, a market actor, is the single entity in charge of implementing and running auctions for annual, monthly and daily energy transmission capacities on shared borders. It is an operator of explicit interconnection capacity auctions and is active in some fifteen countries on behalf of 27 electricity transmission system operators.

Every month, RTE records all invoices for month M-1 and receipts for month M on interconnections managed by the JAO as intermediary. Customer accounts due within thirty days can thus show a credit or a debit at the year-end, depending on fluctuations in exchanges via the interconnections.

5.5.4 Non-deductible expenses concerned by article 39-4 of the French Tax Code (*Code général des impôts*)

The amount of non-deductible expenses concerned by article 39-4 of the French Tax Code (*Code général des impôts*) was €803,114 in 2019.

5.5.5 Statutory auditors

As a result of the transposition of directive no. 2009/72/CE and in accordance with article L. 111-15 of the French Energy Code (*Code de l'énergie*), RTE's individual financial statements must be certified by at least one auditor who does not certify the financial statements of any other party to the Vertically Integrated Enterprise as defined by the regulator in the decision of 11 January 2018 concern-

ing certification of RTE, or the consolidated financial statements of such an entity.

To ensure compliance with this requirement, article 20 of RTE's bylaws requires such auditors to submit a document, prior to their appointment by the shareholders and subsequently each year before the General Shareholders' Meeting called to approve the annual financial statements, declaring whether or not they audit the financial statements of another party to the Vertically Integrated Enterprise.

RTE's statutory auditors are the two firms Mazars and KMPG.

Mazars, represented in the person of its partner, is designated as the statutory auditor that meets the requirement covered in article 20 of RTE's bylaws to have at least one auditor who is independent of the Vertically Integrated Enterprise.

06 — CONSOLIDATED FINANCIAL STATEMENTS AT 31 DECEMBER 2019



CONSOLIDATED INCOME STATEMENT

(in thousands of euros)	Notes	2019	2018
Sales	6	4,855,705	4,816,759
Energy purchases	7	(459,547)	(444,921)
Other external expenses	8	(799,404)	(896,260)
Personnel expenses	10	(889,014)	(869,748)
Taxes other than income taxes	11	(545,255)	(544,215)
Other operating income and expenses	12	19,718	(2,638)
Operating profit before depreciation and amortisation		2,182,203	2,058,976
Net changes in fair value on energy derivatives		8,860	(1,040)
Net depreciation and amortisation		(944,627)	(884,285)
Other income and expenses		–	–
Operating profit		1 246 436	1 173 651
Cost of gross financial indebtedness		(170,672)	(195,424)
Discount effect		(37,858)	(33,271)
Other financial income and expenses		(7,052)	(7,830)
Financial result	13	(215,581)	(236,526)
Consolidated profit before tax		1,030,855	937,125
Income taxes	14	(353,612)	(337,115)
Share in net income of associates	17	3,678	3,479
Consolidated net income		680,921	603,488
net income attributable to non-controlling interests		–	–
RTE net income		680,921	603,488
Earnings per share (RTE share) in Euros		3.19	2.83

STATEMENT OF NET INCOME AND GAINS AND LOSSES RECORDED DIRECTLY IN EQUITY

(in thousands of euros)	2019	2018
Consolidated net income	680,921	603,488
Gross change in fair value of financial assets ⁽¹⁾	118	571
Related tax effect	38	95
Change in fair value of financial assets	156	665
Gross change in fair value of hedging instruments ⁽²⁾	354	354
Related tax effect	(102)	(152)
Change in fair value of hedging instruments	252	202
Gains and losses recorded directly in equity that will be reclassified subsequently to profit or loss	408	867
Gross change in actuarial gains and losses on post-employment benefits	(375,389)	109,784
Related tax effect	96,298	(32,216)
Change in actuarial gains and losses on post-employment benefits	(279,091)	77,568
Impact of IFRS 16	3,416	–
Gains and losses recorded directly in equity that will not be reclassified subsequently to profit or loss	(275,674)	77,568
Total gains and losses recorded directly in equity	(275,266)	78,435
Net income and gains and losses recorded directly in equity	405,655	681,923

(1) These changes principally correspond to the effects of fair market valuation of negotiable debt instruments with maturity of over three months at the date of acquisition.

(2) In 2006 and 2011, the Group contracted financial instruments as pre-hedges to cover the interest rate risk associated with two highly probable bond issues. The balancing payments due upon termination of these hedges are spread over the residual duration of the hedged bond drawings.

CONSOLIDATED BALANCE SHEET

ASSETS (in thousands of euros)	Notes	2019	2018
Intangible assets	15	376,255	327,291
Property, plant and equipment	16	17,876,729	17,196,805
Investments in associates	17	31,776	31,582
Non-current financial assets	18	13,878	10,820
Deferred tax assets	14	269,342	173,060
Non-current assets		18,567,980	17,739,558
Inventories	19	120,389	112,436
Trade and similar receivables	20	1,321,191	1,182,970
Current financial assets	18	1,311,189	1,187,445
Current tax assets		(342)	9,297
Other receivables	21	188,501	210,666
Cash and cash equivalents	22	160,836	117,145
Current assets		3,101,764	2,819,959
TOTAL ASSETS		21,669,744	20,559,517
EQUITY AND LIABILITIES (in thousands of euros)	Notes	2019	2018
Share capital	23	2,132,286	2,132,286
RTE net income and consolidated reserves		3,598,594	3,555,344
Equity - RTE share		5,730,879	5,687,629
Equity - non-controlling interests		-	-
Total equity		5,730,879	5,687,629
Non-current provisions	24	1,852,741	1,455,524
Non-current financial liabilities	25	10,289,854	8,857,019
Non-current liabilities		12,142,595	10,312,543
Current provisions	24	128,239	101,648
Trade and similar payables	28	1,104,672	1,181,781
Current financial liabilities	25	543,187	1,351,836
Current tax liabilities		642	11
Other liabilities	28	2,019,530	1,924,067
Current liabilities		3,796,270	4,559,344
TOTAL EQUITY AND LIABILITIES		21,669,744	20,559,517

CONSOLIDATED CASH FLOW STATEMENT

(in thousands of euros)	2019	2018
OPERATING ACTIVITIES		
Consolidated profit before tax of consolidated companies	1,030,855	937,125
Depreciation and amortisation, provisions and changes in fair value	943,980	896,823
Financial income and expenses	178,926	203,975
Gains and losses on disposal of assets	25,985	22,791
Change in working capital	(103,714)	103,296
Net cash flow from operations	2,076,031	2,164,011
Net financial expenses disbursed	(190,505)	(243,632)
Income taxes paid	(380,680)	(377,250)
Net cash flow from operating activities	1,504,846	1,543,129
INVESTING ACTIVITIES		
Acquisitions of property, plant and equipment and intangibles	(1,458,273)	(1,449,710)
Disposals of property, plant and equipment and intangibles	4,382	6,240
Changes in financial assets	(127,491)	(175,037)
Net cash flow used in investing activities	(1,581,382)	(1,618,507)
FINANCING ACTIVITIES:		
Issuance of borrowings	1,170,670	1,250,295
Repayment of borrowings	(804,283)	(990,980)
Dividends paid	(362,093)	(223,424)
Investment subsidies	116,971	84,624
Net cash flow from financing activities	121,265	120,515
Financial income on cash and cash equivalents	(1,039)	(624)
Net increase (decrease) in cash and cash equivalents	43,691	44,513
Cash and cash equivalents - opening balance	117,145	72,632
Cash and cash equivalents - closing balance	160,836	117,145

CHANGES IN CONSOLIDATED EQUITY

(in thousands of euros)	Capital	Consolidated reserves and net income	Restatement to fair value of financial instruments ⁽²⁾	Equity (RTE share)	Equity (non-controlling interests)	Total equity
Equity at 31 December 2017	2,132,286	3,097,936	(933)	5,229,288	-	5,229,288
Total gains and losses recorded directly in equity ⁽¹⁾	-	77,568	867	78,435	-	78,435
2018 net income	-	603,488	-	603,488	-	603,488
Net income and gains and losses recorded directly in equity	-	681,056	867	681,923	-	681,923
Dividends paid	-	(223,424)	-	(223,424)	-	(223,424)
Other changes	-	-	(158)	(158)	-	(158)
Equity at 31 December 2018	2,132,286	3,555,568	(224)	5,687,629	-	5,687,629
Total gains and losses recorded directly in equity ⁽¹⁾	-	(279,091)	3,825	(275,266)	-	(275,266)
2019 net income	-	680,921	-	680,921	-	680,921
Net income and gains and losses recorded directly in equity	-	401,830	3,825	405,655	-	405,655
Dividends paid	-	(362,093)	-	(362,093)	-	(362,093)
Other changes	-	-	(312)	(312)	-	(312)
Equity at 31 December 2019	2,132,286	3,595,305	3,289	5,730,880	-	5,730,880

(1) For details of these changes, see the statement of net income and gains and losses recorded directly in equity.

(2) Including the impact of first application of IFRS 16 (€3,416,000).

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

RTE Réseau de transport d'électricité ("RTE") is a société anonyme, a French-domiciled publicly-traded limited company whose shares are unlisted.

RTE manages the French electricity transmission network, with responsibility for operating, maintaining and developing the network. It guarantees smooth and safe operation of the French electric system, providing on-demand, equitable access to all network users.

The consolidated financial statements of the RTE Group ("the Group") include the accounts of RTE, the accounts of five companies controlled exclusively by RTE which are fully consolidated, the accounts of three jointly-controlled companies consolidated as joint operations, and the accounts of two companies in which RTE exercises significant influence (associates) which are accounted for under the equity method. All these economic entities are collectively referred to as the "Group".

The five companies controlled exclusively by RTE are:

- Arteria, which markets:
 - use of optical fibres constructed by RTE;
 - "high points" (stand-alone radio transmitters or power system pylons), pre-equipped to host operators' mobile telephone facilities in order to carry broadband to the final customer at a lower cost, as a complement to optical fibres;
- RTE International (RTE I), which provides engineering, consulting and other services in all areas of an electricity transmission network operator's business;
- Airtelis, which markets services using one or more helicopters, and supplies products and equipment to enhance RTE's assets and/or skills (including operations, heliborne transport, and helicopter leases);
- RTE Immo which operates mainly in acquisition, management, administration and sale of real estate properties and rights, execution of work on real

estate properties to enhance their value, and provision of real estate services;

- Cirteus, which provides services, studies and advice in the competitive sector of the market for maintenance, operation and development of high-voltage and very high-voltage electricity installations.

The companies controlled jointly by RTE are:

- Inelfe (Interconnexion électrique France-Espagne), owned jointly with REE (Red Eléctrica de España SAU). Inelfe was formed for the planning and construction of any new interconnection project between France and Spain, increasing interconnection capacity between the French and Spanish transmission networks;
- IFA2 (Interconnexion France-Angleterre 2), owned jointly with NG IFA2 (National Grid IFA 2 Ltd). IFA2 was formed to construct the new interconnection line of the same name between the French and British transmission networks.
- Celtic Interconnector, owned jointly with EirGrid. Celtic Interconnector was formed to develop the project for construction of a new interconnection between the French and Irish transmission networks.

The Group's associates are:

- a holding company, HGRT (Holding des Gestionnaires de réseau de transport d'électricité, a French limited company⁽¹⁾) which holds an investment in Epex Spot, a company that handles financial management for energy purchase and sale markets on European territory;
- Coreso, a Belgian company which supplies safety assessments and designs coordinated preventive or corrective solutions to control safe operation of the electricity system covering the west of Europe.

The Group's financial statements at 31 December 2019 were prepared under the responsibility of its Executive Board, which approved them on 27 January 2020.

(1) Simplified joint stock company (SAS :- société par actions simplifiée).

NOTE 1 – GROUP ACCOUNTING STANDARDS

1.1 DECLARATION OF CONFORMITY AND GROUP ACCOUNTING POLICIES

Pursuant to European regulation 1606/2002 of 19 July 2002 on the adoption of international accounting standards, the Group's consolidated financial statements for the year ended 31 December 2019 are prepared under the international accounting standards published by the IASB and approved by the European Union for application at 31 December 2019. These international standards are IAS (International Accounting Standards), IFRS (International Financial Reporting Standards), and SIC and IFRIC interpretations.

The Group has decided against early application of the standards and interpretations that were not mandatory in 2019.

1.2 CHANGES IN ACCOUNTING STANDARDS AT 31 DECEMBER 2019

Apart from the changes indicated below, the accounting and valuation methods applied by the Group in the consolidated financial statements for the year ended 31 December 2019 are identical to those used in the consolidated financial statements for the year ended 31 December 2018.

1.2.1 Standards and amendments adopted by the European Union that are mandatory

The following accounting standards and amendments have been adopted by the European Union and are mandatory for financial years beginning on or after 1 January 2019:

- IFRS 16 "Leases". The Group applies this standard under the modified retrospective approach from 1 January 2019. Consequently, restatement of comparative information for the impacts of application of IFRS 16 is not required, and the prior year figures in the 2019 financial statements are presented as previously published. Details of the impacts of IFRS 16 for the Group are provided below in note 2.13 "Leases", note 16 "Property, plant and equipment", and note 25.2 "Loans and other financial liabilities".
- IFRIC 23 "Uncertainty over income tax treatments". This interpretation clarifies application of the provisions of IAS 12 "Income taxes" regarding recognition

and measurement of income tax when fiscal uncertainty exists. After analysis, the conclusion is that it has no impact on the Group.

- The Amendments to IAS 19 "Plan Amendment, Curtailment or Settlement", Amendments to IAS 28 "Long-term Interests in Associates and Joint Ventures", and Amendments to IFRS 9 "Prepayment Features with Negative Compensation" do not concern the Group.
- The Annual improvements to IFRS, 2015-2017 have no impact on the Group.

1.2.2 Standards and interpretations adopted by the European Union but not yet mandatory

There are currently no standards or interpretations that have been adopted by the European Union and are eligible for early application by listed European companies in their financial statements at 31 December 2019

1.2.3 Other standards and amendments published by the IASB but not yet adopted by the European Union

The Group has not yet assessed the potential impacts of the following IASB publications:

- IFRS 14, "Regulatory Deferral Accounts". IFRS 14 is a temporary standard providing an accounting solution for companies adopting IFRS for the first time. The European Commission is not going to propose this standard for adoption by the EU because very few European companies fall into its scope of application. The Commission has stated that it will examine any future standard concerning businesses operating under regulated tariffs with a view to potential adoption by the EU under the normal procedure.
- Amendments to IFRS 9, IAS 39 and IFRS 7, "Interest Rate Benchmark Reform"
- IFRS 17, "Insurance Contracts". This standard applies to insurers and consequently the Group is not concerned.
- Amendments to IAS 1 and IAS 8, "Definition of Material".
- Amendments to References to the Conceptual Framework in IFRS.
- Amendments to IFRS 3 "Definition of a business".

NOTE 2 – SUMMARY OF THE PRINCIPAL ACCOUNTING AND VALUATION METHODS

The following accounting methods have been applied consistently to all the periods presented in the consolidated financial statements.

2.1 VALUATION

The consolidated financial statements are based on historical cost valuation, with the exception of certain financial instruments and financial assets, which are stated at fair value.

The methods used to determine the fair value of these instruments are presented in note 2.15.

2.2 MANAGEMENT JUDGMENTS AND ESTIMATES

The preparation of the financial statements requires the use of judgments, best estimates and assumptions in determining the value of assets and liabilities, income and expenses recorded for the period, considering positive and negative contingencies existing at year-end. The figures in the Group's future financial statements could differ from current estimates due to changes in these assumptions or economic conditions.

The principal sensitive accounting methods involving use of estimates and judgments are described below. Given their importance in the Group's financial statements, the impact of any change in assumption in these areas could be significant.

2.2.1 Pensions and other long-term and post-employment benefit obligations

The value of pensions and other long-term and post-employment benefit obligations is based on actuarial valuations that are sensitive to all the actuarial assumptions used, particularly concerning discount rates and wage increase rates.

The principal actuarial assumptions used to calculate these post-employment and long-term benefits at 31 December 2019 are presented in note 24.2. These assumptions are updated annually. The Group considers the actuarial assumptions used at 31 December 2019 appropriate and well-founded, but future changes in these assumptions could have a significant effect on the amount of the obligations and the

Group's equity and net income. Sensitivity analyses are therefore presented in note 24.2.

2.2.2 Impairment of long-term assets

Impairment tests and the useful lives of long-term assets are sensitive to the macro-economic assumptions used, and medium-term financial forecasts. The Group therefore revises the underlying estimates and assumptions based on regularly updated information.

2.2.3 Financial assets and liabilities

The Group considers that the balance sheet values of cash and cash equivalents, negotiable debt instruments, trade receivables and trade payables are a good approximation of their market value due to the high liquidity of these items.

The market values of listed investment securities are based on their year-end stock market value. The net book value of other securities and current bank loans is a reasonable approximation of their fair value.

The fair value of financial liabilities was determined using estimated future cash flows, discounted at rates observable at the year-end for instruments with similar conditions and maturities.

2.2.4 Assessment of control

Since application of IFRS 10, IFRS 11 and IFRS 12 the Group has used judgment to assess control or classify the type of partnership arrangement represented by a jointly-controlled entity.

2.2.5 Other judgments

When there is no standard or interpretation applicable to a specific transaction, the Group exercises judgment to define and apply accounting methods that will supply relevant, reliable information for preparation of its financial statements.

2.3 CONSOLIDATION METHODS

Subsidiaries are companies in which the Group exercises exclusive control and are fully consolidated. Exclusive control means the power to govern the enterprise's financial and operating policies either directly or indirectly so as to obtain benefit from its activities. The Group is presumed to have exclusive control when the three following conditions are fulfilled:

- the Group holds power over the entity's relevant activities, i.e. the activities that have a significant impact on returns;
- the Group is exposed, or has rights, to variable returns;
- the Group has the ability to use its power over the entity to influence the amount of the investor's returns.

The Group considers all facts and circumstances when assessing control. All substantive potential voting rights exercisable, including by another party, are also taken into consideration.

A joint operation is a joint arrangement in which the parties (joint operators) that exercise joint control over the entity have direct rights to its assets, and obligations for its liabilities. In application of IFRS 11 the Group, as an operator in a joint operation, reports the assets and liabilities and income and expenses related to its investment line by line.

Associates are entities in which the Group exercises significant influence over financial and operating policies, without having exclusive or joint control. Significant influence is presumed to exist when the Group's investment is at least 20%. Associates are accounted for under the equity method.

In application of IFRS 12, investments in associates are carried in the balance sheet at historical cost adjusted for the share of net assets generated after acquisition, less any impairment. The Group's share in net income for the period is reported under the income statement heading "Share in net income of associates".

All significant internal transactions between consolidated companies, including realised internal profits, are eliminated.

A list of subsidiaries, joint operations and associates is presented in note 33.

2.4 FINANCIAL STATEMENT PRESENTATION RULES

Assets and liabilities of dissimilar natures or functions are disclosed separately.

Assets and liabilities contributing to working capital used in the entity's normal operating cycle are classified as current. Other assets and liabilities are classified as current if they mature within one year of the closing date, and non-current if they mature more than one year after the closing date.

The income statement presents items by nature. The heading "Other income and expenses" presented below the operating profit before depreciation and amortisation comprises any items of an unusual nature or amount.

2.5 TRANSLATION METHODS

2.5.1 Reporting currency and functional currency

The Group's financial statements are presented in Euros, which is both its functional and reporting currency. All figures are rounded up or down to the nearest thousand.

2.5.2 Translations of transactions in foreign currencies

In application of IAS 21, transactions expressed in foreign currencies are initially translated and recorded in the functional currency of the entity concerned, using the rate in force at the transaction date.

At each reporting date, monetary assets and liabilities expressed in foreign currencies are translated at the closing rate. The resulting foreign exchange differences are taken to the income statement.

IFRIC 22, "Foreign Currency Transactions and Advance Consideration" adopted on 28 March 2018, clarified a point of application of IAS 21 regarding the exchange rate that should be used when an advance payment is made before execution of the transaction. The purchase or sale transaction must be translated at the exchange rate of the date of initial recognition of the asset or liability corresponding to the advance payment. If several advance payments are made, an average exchange rate is determined for each transaction.

2.6 RELATED PARTIES

Related parties include the French State, companies in which the State holds majority ownership and certain of their subsidiaries (including EDF SA and certain subsidiaries), and companies in which RTE exercises joint control or significant influence. They also include members of the Group's management and governance bodies.

2.7 SALES

Sales essentially comprise income from energy transmission and services. Services include provision of interconnection capacity at national borders.

The Group accounts for sales when:

- there is a proven contractual relationship;
- delivery has taken place (or the service has been completed);
- a quantifiable price has been established or can be determined;
- and the receivables are likely to be recovered.

Delivery takes place when the risks and benefits associated with ownership are transferred to the buyer.

The Group applies IFRS 15 "Revenue from Contracts with Customers". Connection contracts qualify as contracts with customers under this standard, and income from those contracts has therefore been reclassified from a share of subsidies to sales.

RTE has opted to recognise the revenue over time. The income from a connection contract is thus spread over the period of use of the connection in the same way as the investment subsidy.

This decision corresponds to an economic approach: it is coherent to recognise income on connection in the same way as the associated expenses and depreciation, which are spread over the period of use of the connection.

Also, the service transferred to the customer is not the connection itself, but its use: the customer simultaneously receives and consumes its right to use the connection supplied by RTE. The service concerned by the contract is thus transferred to the customer continuously rather than at a specific date (see IFRS 15.35), and this is the reason why revenues from customer connections should be recognised progressively over the period of use of the connection.

Contract liabilities under IFRS 15 represent RTE's obligation to supply to its customers a service of connection to the network for which it has already received payment. These liabilities consist of advance payments received for the connection service (see note 28).

2.7.1 Capacity mechanism

A capacity mechanism has been set up in France to ensure secure power supplies during peak periods.

French law 2010-1488 of 7 December 2010 on the new organisation of the electricity market introduced an obligation in France to contribute to power supply security from 1 January 2017.

Operators of electricity generation facilities and load-shedding operators must have their capacities certified by RTE, and commit to a forecast level of availability for a given year of delivery. In return, they are awarded capacity certificates. Meanwhile, electricity suppliers and purchasers of power to compensate for network losses (obligated actors) must hold capacity certificates equivalent to consumption by their customers in peak periods. Suppliers pass on the cost of the capacity mechanism to final customers through their sale prices.

The system is completed by registers for capacity trading between actors. Capacity auctions are held several times a year.

The Group is concerned by this system, as a certifier (RTE SA), an operator of electricity installations via its interconnections (RTE SA) and as an obligated purchaser (RTE SA - as a purchaser of power to compensate for network losses).

The operations are recorded as follows:

- sales of capacity certificates are recognised in income when the auctions or over-the-counter sales take place;
- stocks of capacity certificates held by RTE as obligated actor are stated at their purchase value on the market. Decreases in the stock of certificates follow the pattern of peak periods;
- if the stocks of capacity certificates do not cover the obligation, an expense is recorded equivalent to the best estimate of the expense necessary to extinguish the obligation.

2.8 OTHER EXTERNAL EXPENSES

Transactions related to RTE's responsibility for balancing electricity generation and consumption in the electricity transmission network are reported under "Other external expenses".

2.9 INCOME TAXES

Income taxes include the current tax expense (income) and the deferred tax expense (income), calculated under the tax legislation in force in the countries where the earnings are taxable.

In compliance with IAS 12, current and deferred taxes are recorded in the income statement, or in equity if they concern items directly recorded in equity.

The current tax expense (income) is the estimated amount of tax due on the taxable income for the period, calculated using the tax rates adopted at the year-end. This expense includes reclassification of certain tax credits as components of "Other operating income and expenses" in the income statement.

Deferred taxes result from temporary differences between the book value of assets and liabilities and their tax basis.

Deferred tax assets and liabilities are valued at the future tax rate for the period in which the asset will be realised or the liability settled, as adopted at the year-end. If the tax rate changes, deferred taxes are adjusted to the new rate and the adjustment is recorded in the income statement, unless it relates to an underlying for which changes in value are recorded in equity, for example in accounting for changes in actuarial gains and losses or fair value on hedging instruments and financial assets.

Deferred taxes are reviewed at each closing date, to take into account changes in tax legislation and the prospects for recovery of deductible temporary differences. Deferred tax assets are only recognised when it is probable that the Group will have sufficient taxable profit to utilise the benefit of the asset in the foreseeable future, or beyond that horizon, if there are deferred tax liabilities with the same maturity.

Since 1 January 2018, RTE SA has been part of the CTE group's tax group. The tax group agreement stipulates that the tax to be borne by RTE SA is equal to the income tax that would have been payable on its taxable income and/or long-term capital gains of the year if it was taxed separately, less all deductions to which RTE SA would have been entitled if it was not part of a tax group.

2.10 EARNINGS PER SHARE

Earnings per share is calculated by dividing the Group's share of net income by the weighted average number of shares outstanding over the period. This weighted average number of shares outstanding is the number of ordinary shares at the start of the year, adjusted by the number of shares redeemed or issued during the year.

2.11 INTANGIBLE ASSETS

Intangible assets mainly consist of purchased or internally designed and developed software. These assets are amortised on a straight-line basis over their useful lives, which are generally between 3 and 15 years.

Software license acquisition costs or the cost of creating and developing software are reported at a value based on the costs incurred to acquire the software, or create it and put it into operation. Costs directly associated with production of identifiable, unique software that is controlled by the Group, and is likely to generate future economic benefits greater than the cost of the software over a period of more than one year, are capitalised. Costs directly associated with production include payroll costs for the personnel who developed the software and the internal and external expenses incurred in producing the asset.

Other research and development expenses are charged to expenses for the year they are incurred, unless they meet the requirements for capitalisation as defined by IAS 38.

2.12 PROPERTY, PLANT AND EQUIPMENT

2.12.1 Initial measurement

Property, plant and equipment is recorded at acquisition or production cost.

The cost of facilities developed in-house includes all labour and parts costs, and all other production costs attributable to the construction of the asset.

When a part of an asset has a different useful life from the overall asset's useful life, it is identified as an asset component and depreciated over a specific period.

Borrowing costs attributable to the financing of an asset incurred during the construction period are included in the value of the asset provided it is a "qualifying asset" as defined by IAS 23. The capitalisation rate applied depends on the borrowing terms, as presented in note 25.2.1.

2.12.2 Depreciation

Property, plant and equipment are depreciated on a straight-line basis over their useful life, defined as the period during which the Group expects to draw future economic benefits from their use.

Depreciation is calculated based on the gross value of the assets concerned, which will have zero residual value at the end of their useful life.

The estimated useful lives for the principal facilities are generally the following:

- lines and cables: 45 years;
- transformers: 40 years;
- cells and busbars: 45 years for "High voltage" equipment and 15 years for "Low voltage" equipment;
- reactive power compensation and auxiliary equipment: 45 years;
- telecommunications and telecontrol equipment: 10 years.

2.12.3 Subsequent investment expenditure

Subsequent costs are included in the book value of the asset, or recognised as a separate asset when it is probable that the future economic benefits from the asset will benefit the Group and the cost can be reliably measured.

2.12.4 Maintenance and compliance expenses

All repair and maintenance expenses are charged to the income statement during the period in which they are incurred.

The Group capitalises safety spare parts and compliance expenses incurred as a result of legal and regulatory obligations sanctioning non-compliance by an administrative ban from operation.

These expenses are amortised over the useful life of the relevant facilities.

2.12.5 Public transmission network concession

RTE is by law France's public transmission network operator, and exercises this mission under the amendment signed on 30 October 2008 to the agreement of 27 November 1958, transferring the concession for the French public electricity transmission network to RTE. The assets operated under this concession are by law the property of RTE, and are included in "property, plant and equipment".

2.13 LEASES

Under IFRS 16, applicable from 1 January 2019, a contract is, or contains, a lease if it confers the right to control the use of an identified asset for a period of time in exchange for a consideration. Identified arrangements that do not have the legal form of a lease contract but nonetheless convey the right to control the use of an asset or group of specific assets to the purchaser are treated by the Group as leases, and analysed by reference to IFRS 16.

IFRS 16 introduces significant changes to the accounting treatment of leases by the lessee. It eliminates the distinction between operating and finance leases and requires recognition of a right-of-use asset and a lease liability when a lease is set up.

The Group applies this standard retrospectively from 1 January 2019, without restating comparative period figures (this is known as the “modified” retrospective approach).

Leases are recognised in the balance sheet at their inception, at the discounted value of future lease payments, in the form of a financial liability included in “other financial liabilities” (see note 25) and a “right-of-use” asset included in property, plant and equipment (see note 16). They are written down over the term of the lease.

The Group assessed the potential impacts of the application of IFRS 16 through a survey of the purchasing division which centrally manages all RTE’s master contracts, and regional management controllers. The leases identified essentially concern real estate assets, and to a lesser extent transport vehicles.

The Group has decided to apply the two exemptions allowed by the standard for leases with a term of twelve months or less and leases of assets with individual value when new of less than USD 5,000.

The Group determines the lease liability by discounting the future lease payments over the term of the lease.

The term of the lease is the maximum period during which the lessee will have the right to use the leased asset, i.e. the period during which the lease cannot be terminated by the lessor, plus all possible extensions at the lessee’s sole initiative as set out in the contract.

The discount rates used by the Group are based on an incremental borrowing rate reflecting the Group’s specific features. These rates are equal to a swap rate (daily fixing) plus a margin corresponding to the Group’s credit risk as perceived by the market. The maturity of the chosen rate depends on the term of each lease contract.

Consequently, implementation of IFRS 16 in the Group’s financial statements at 1 January 2019 has an impact of around €1 million on equity. In the assets, a right of use has been recognised at the gross value of €215 million, and the corresponding lease liability is stated at €216 million.

At 31 December 2019, application of IFRS 16 has a favourable impact of approximately €36 million reflecting cancellation of lease payments, with a related increase of €32 million in depreciation and a €5 million unfavourable impact on the financial result.

2.14 IMPAIRMENT OF INTANGIBLE ASSETS AND PROPERTY, PLANT AND EQUIPMENT

At the year-end and at each interim reporting date, the Group assesses whether there is any indication that an asset could have been significantly impaired. If so, an impairment test is carried out in compliance with IAS 36.

2.15 FINANCIAL ASSETS AND LIABILITIES

Financial assets include assets (non-consolidated investments, investment securities), loans and receivables at amortised cost, including trade and similar receivables, and the positive fair value of derivatives.

Financial liabilities comprise financial borrowings and debts, trade and similar payables, bank credit and the negative fair value of financial derivatives.

Financial assets and liabilities are recorded in the balance sheet as current if they mature within one year and non-current if they mature after one year, apart from derivatives held for trading, which are all classified as current.

Operating debts and receivables, and cash and cash equivalents, are governed by IFRS 9 and reported separately in the balance sheet.

2.15.1 Financial assets (excluding derivatives)

Financial assets that give rise to cash flows which are not Solely Payment of Principal and Interest (SPPI) must be carried at fair value through profit and loss. However, IFRS 9 offers an irrevocable option, which must be exercised at inception for each individual investment, allowing investments in equity instruments to be carried at fair value through other comprehensive income, with no subsequent transfer to profit and loss even in the event of sale. Under this option, only dividends are recorded in income.

Financial assets that give rise to cash flows which are Solely Payment of Principal and Interest (SPPI) are carried at amortised cost under the effective interest rate method.

Financial assets carried at fair value through profit and loss are recognised at the transaction date at fair value, which is generally equal to the amount of cash paid out. Transaction costs directly attributable to the acquisition are recorded in the income statement. At each subsequent reporting date they are adjusted to fair value, which is determined by reference to (i) quoted prices on an active market (level 1), (ii) observable data from a market (level 2), or (iii) data that cannot be observed on a market (level 3).

Changes in fair value are recorded in the income statement under the heading "Other financial income and expenses".

Dividends and interest received on assets stated at fair value are recorded in the income statement under "Other financial income and expenses".

In the case of non-current financial assets carried at amortised cost, impairment is assessed on an individual basis, taking into consideration the counterparty's risk profile and the guarantees received. Upon initial recognition of these non-current financial assets, impairment equal to the expected credit losses over a twelve-month horizon is systematically booked. If there is a significant deterioration in the counterparty's creditworthiness, additional impairment is booked so that the total expected credit loss over the receivable's residual term is covered.

For sales receivables, the Group reviews customer receivables individually, taking into consideration the probability of default by the counterparty and the

degree to which the receivables are covered by provisions, and uses the simplified method allowed by IFRS 9, which consists of establishing provisions to cover expected credit losses over the receivables' residual term.

● 2.15.1.1 Financial liabilities (excluding derivatives)

Financial liabilities are recorded at amortised cost, with separate reporting of embedded derivatives where applicable. Transaction costs are deducted from the financed amount reported under financial liabilities. Interest expenses, calculated under the effective interest rate method including transaction costs related to financial liabilities, are recorded under the heading "Cost of gross financial indebtedness" over the duration of the financial liability. The fair value is determined by discounting future cash flows at market rates.

● 2.15.1.2 Derivatives

2.15.1.2.1 Scope

The scope of derivatives applied by the Group corresponds to the principles set out in IFRS 9.

In particular, forward purchases for physical delivery of energy are considered to fall outside the scope of application of IFRS 9 when the contract concerned has been entered into as part of the Group's normal business activity ("own use").

This is demonstrated to be the case when all the following conditions are fulfilled:

- a physical delivery takes place under all such contracts;
- the volumes purchased or sold under the contracts correspond to the Group's operating requirements;
- these contracts cannot be considered as options as defined by the standard.

The Group thus considers that transactions negotiated with a view to balancing the volumes of purchase commitments and the actual level of losses are part of its normal business as operator of the electricity transmission network, and are outside the scope of IFRS 9.

In compliance with IFRS 9, the Group analyses all its contracts, of both a financial and non-financial nature, to identify the existence of any "embedded" derivatives. Any component of a contract that affects the cash flows of that contract in the same way as a stand-alone derivative corresponds to the definition of an embedded derivative.

If they meet the conditions set out by IFRS 9, embedded derivatives are accounted for separately from the host contract at inception date.

2.15.1.2.2 Measurement and recognition

Derivatives are initially recorded at fair value, based on quoted prices and market data available from external sources. If no quoted prices are available, the Group may refer to recent comparable transactions or, if no such transactions exist, base its valuation on internal models that are recognised by market participants, giving priority to information derived directly from observable data, such as over-the-counter listings.

Changes in the fair value of these derivatives are recorded in the income statement, unless they are classified as hedges for a cash flow. Changes in the fair value of cash flow hedging instruments are recorded directly in equity, excluding the ineffective portion of the hedge.

In application of IFRS 13, the fair value of derivatives incorporates the counterparty credit risk for derivative assets and the own credit risk for derivative liabilities.

2.15.1.2.3 Financial instruments classified as hedges

The Group may use derivative instruments to hedge its foreign exchange and interest rate risks, and risks related to certain energy contracts.

The Group applies the criteria defined by IFRS 9 in classifying derivatives as hedges:

- the instrument must hedge changes in fair value or cash flows attributable to the risk hedged, and the effectiveness of the hedge (i.e. the degree to which changes in the value of the hedging instrument offset changes in the value of the hedged item or future transaction) must be between 80% and 125%;
- in the case of cash flow hedges, the future transaction being hedged must be highly probable;
- reliable measurement of the effectiveness of the hedge must be possible;
- the hedge must be supported by appropriate documentation from its inception.

The hedging relationship ends when:

- a derivative ceases to be an effective hedging instrument;
- a derivative expires, or is sold, terminated or exercised;

- the hedged item expires, is sold or redeemed;
- a future transaction ceases to be considered as highly probable.

The Group uses the following categories for hedges:

• (A) Fair value hedges

These instruments hedge the exposure to changes in the fair value of an asset or liability recorded in the balance sheet, or a firm commitment to purchase or sell an asset. Changes in the fair value of the hedged item attributable to the hedged component of that item are recorded in the income statement and offset by corresponding variations in the fair value of the hedging instrument. Only the ineffective portion of the hedge has an impact on income.

• (B) Cash flow hedges

These instruments hedge highly probable future transactions for which the variability in cash flows generated by the hedged transaction is offset by changes in the value of the hedging instrument.

The effective portion of accumulated changes in the hedge's fair value is recorded in equity, and the ineffective portion (i.e. changes in the fair value of the hedging instrument in excess of changes in the fair value of the hedged item) is recorded in the income statement.

When the hedged cash flows materialise, the amounts previously recognised in equity are transferred to the income statement in the same way as for the hedged item.

2.15.2 Derecognition of financial assets and liabilities

Derecognition is applied for all or part of:

- a financial asset, when the contractual rights making up the asset expire, or the Group transfers substantially all the significant risks associated with ownership of the asset;
- a financial liability, when the liability is extinguished due to cancellation or expiry of the obligation. When a debt is renegotiated with a lender giving rise to substantially different terms, a new liability is recognised.

2.16 INVENTORIES

Inventories are stated at the lower of historical cost and net realisable value. The cost of inventories is determined by the weighted average unit cost method, including both direct and indirect purchase costs. Inventory accounts include:

- operating materials and equipment such as spare parts supplied under a maintenance programme;
- certificates issued under capacity obligation mechanisms (capacity certificates in France) (see 2.7 above).

Impairment of inventories depends on the turnover of materials, their estimated useful lives and the degree of technical obsolescence.

2.17 TRADE AND SIMILAR RECEIVABLES

On initial recognition, trade and similar receivables are recorded at the fair value of the consideration received or to be received (which generally corresponds to their nominal value). Impairment is recorded when their carrying amount, based on the probability of recovery assessed according to the type of receivable, is less than their book value. Depending on the nature of the receivable, the risk associated with doubtful receivables is assessed individually.

Trade receivables also include the value of unbilled receivables for energy already supplied.

2.18 CASH AND CASH EQUIVALENTS

Cash and cash equivalents comprise immediately available liquidities and very short-term investments that are readily convertible into a known amount of cash, usually maturing within three months or less of the acquisition date, and with negligible risk of fluctuation in value.

Securities held short-term and classified as cash equivalents are recorded at fair value. Changes in the fair value of these securities are included in the heading "Other financial income and expenses".

2.19 EQUITY – IMPACT OF RESTATEMENT TO FAIR VALUE OF FINANCIAL INSTRUMENTS

The impact of restatement to fair value of financial instruments results from the adjustment to fair value of financial assets and certain hedging instruments.

2.20 PROVISIONS OTHER THAN EMPLOYEE BENEFIT PROVISIONS

The Group recognises a provision if the following three conditions are met:

- the Group has a present obligation (legal or constructive) towards a third party that arises from an event prior to the closing date;
- it is probable that an outflow of resources will be required to settle the obligation, without an equivalent consideration;
- the obligation amount can be estimated reliably.

Provisions are determined based on the Group's estimate of the expected cost necessary to settle the obligation. Estimates are based on assumptions adopted by the Group, and if necessary experience of similar transactions, or in some cases based on independent expert reports or contractor quotes. The various assumptions are reviewed for each closing of the accounts.

If it is anticipated that all or part of the expenses covered by a provision will be reimbursed, the reimbursement is recognised under receivables if and only if the Group is certain of receiving it.

2.21 EMPLOYEE BENEFITS

The Group grants its employees post-employment benefits (pension plans, retirement indemnities, etc) and other long-term benefits (e.g. long-service awards) in compliance with the specific laws and measures in force for the electricity and gas (IEG) sector in France.

2.21.1 Calculation and recognition of employee benefits

Obligations under defined-benefit plans are subject to actuarial valuation. They are calculated by the projected unit credit method, which determines the present value of entitlements earned by employees at year-end to pensions, post-employment benefits and

long-term benefits, taking into consideration economic conditions and expected wage increases.

In calculating post-employment benefit obligations, this method takes the following factors into consideration:

- career-end salary levels, with reference to employee seniority, projected salary levels at the time of retirement based on the expected effects of career advancement, and estimated trends in pension levels;
- retirement age, determined on the basis of the applicable rule (such as the degree of “active work” and number of children, taking into account the longer employee contribution period to qualify for a full pension);
- forecast numbers of pensioners, based on employee turnover rates and available mortality data;
- reversion pensions, taking into account both the life expectancy of the employee and his/her spouse and the marriage rate observed for the population of employees in the electricity and gas sector;
- a discount rate that depends on the duration of the obligations; in compliance with IAS 19 (revised), this rate is determined as the market yield on high quality corporate bonds or the year-end rate on government bonds with a similar duration to the company's commitments to employees.

The provision reflects the value of the fund assets that cover post-employment benefits, which are deducted from the value of the obligation as determined above.

For pensions and other post-employment obligations, all actuarial gains and losses generated by changes in actuarial assumptions (discount rate, inflation rate, wage laws, mortality, retirement age, etc) are immediately recognised in the statement of net income and gains and losses recorded directly in equity.

For long-term employee benefits, actuarial gains and losses and the entire past service cost are recognised immediately in the provision.

The net expense booked for employee benefit obligations during the year thus includes:

- the cost of additional vested benefits, and the financial discount cost on existing benefits;
- the income corresponding to the expected return on fund assets;
- the income or expenses related to amendments or settlements of benefit plans or introduction of new plans;
- the change in actuarial gains and losses on long-term benefits.

2.21.2 Post-employment benefit obligations

When they retire, Group employees covered by the electricity and gas (IEG) sector system benefit from pensions determined under the statutory IEG rules. Since the financing reform for the IEG sector system took effect on 1 January 2005, the CNIEG (Caisse nationale des IEG, the sector's specific pension body) has managed not only the special IEG pension system, but also the industrial accident, invalidity and death insurance system for the sector.

The CNIEG is a social security body governed by private law, formed by the law of 9 August 2004. It has legal entity status and reports to the French government, operating under the joint supervision of France's ministers for the Budget, Social Security and Energy. Under the funding arrangements introduced by the law, IEG companies establish pension provisions to cover entitlements not funded by France's standard systems (CNAV, AGIRC-ARRCO), to which the IEG system is affiliated, or by the CTA (contribution tarifaire d'acheminement) levy on gas and electricity transmission and distribution services.

The provision for pensions thus covers:

- specific benefits earned by employees from 1 January 2005 for the regulated transmission activity (past benefits were financed by the CTA levy);
- specific benefits of employees benefiting from early retirement before the standard legal retirement age.

In addition to pensions, other benefits are granted to IEG status employees not currently in active service, as detailed below:

• *Benefits in kind (electricity/gas):*

Article 28 of the IEG National Statutes entitles all employees (active or inactive) to the same benefits in kind in the form of supplies of electricity or gas at the preferential “Employee price”. The Group's obligation for supplies of energy to employees corresponds to the probable present value of kWh supplied to beneficiaries during their retirement, valued on the basis of the unit cost, taking into account the payment received under the energy exchange agreement with Engie.

• *Retirement gratuities*

These gratuities are paid upon retirement to employees due to receive the statutory old-age pension, or to their dependents if the employee dies before reaching retirement. These obligations are almost totally covered by an insurance policy.

● *Bereavement benefit*

This benefit is paid out upon the death of an inactive or disabled employee, in order to provide financial assistance for the expenses incurred at such a time (Article 26 §5 of the National Statutes). It is paid to the deceased's principal dependants (statutory indemnity equal to three months' pension) or to a third party that has paid funeral costs (discretionary indemnity equal to the costs incurred).

● *Bonus pre-retirement paid leave*

All employees eligible to benefit immediately from the statutory old-age pension and aged at least 55 at their retirement date are entitled to eighteen days of bonus paid leave during the last twelve months of their employment.

● *Cost of studies indemnity and study grants*

The cost of studies indemnity is a family benefit not defined by the statutes, intended to provide assistance to inactive employees (or their dependants) whose children are still in education. It is also paid to beneficiaries of the orphan's pension. An agreement on education fees that came into force on 1 October 2011 introduced Study grants, which are progressively replacing the Cost of studies indemnity. In November 2017 the unions and employers' groups signed an amendment to the agreement of 7 March 2011, agreeing to review and improve the study grant system, notably to simplify the qualifying conditions. This amendment took effect on 1 January 2018.

● *Time banking for additional retirement leave*

Following the 2008 pension reform, an agreement was reached in 2010 that replaced the early retirement arrangements for "active work" (i.e. non-sedentary) employees joining the Group on or after 1 January 2009.

Under this agreement:

- the employee earns 10 days of additional retirement leave for each year of 100% "active work",
- days are attributed on a prorated basis if the proportion of "active work" is less than 100%,
- no days are attributed if the proportion of "active work" is less than 20%.

The employee retains his/her entitlement to days of leave earned under this time banking system if he/she leaves the IEG sector or is transferred to an IEG status company. This leave can only be taken when

he/she retires, between the date at which he/she qualifies for a pension and the age limit set by article 4 of the National Statutes for IEG personnel.

2.21.3 Other long-term benefit obligations

These benefits concern employees currently in service, and are earned according to IEG statutory regulations. They include:

- Annuities and benefits following invalidity, industrial accident or work-related illness; like their counterparts in the general national system, IEG employees are entitled to financial support in the event of industrial accident or work-related illness, and invalidity annuities and benefits. The obligation is measured as the probable present value of future benefits payable to current beneficiaries, including any possible reversions;
- long-service awards;
- specific benefits for employees who have been in contact with asbestos.

2.22 INVESTMENT SUBSIDIES

Investment subsidies received by Group companies, principally for connecting customers to the transmission network, are included in liabilities under the heading "Other current liabilities" and transferred to income as and when the economic benefits of the corresponding assets are utilised.

In accordance with IFRS 15⁽¹⁾, investment subsidies associated with connection contracts have been reclassified as sales revenues and are recognised progressively over the useful life of the corresponding asset.

2.23 ENVIRONMENTAL EXPENSES

Environmental expenses are identifiable expenses incurred to prevent, reduce or repair damage to the environment that has been or may be caused by the Group as a result of its business. Two possible treatments apply to these expenses:

- they are capitalised if they are incurred to prevent or reduce future damage or preserve resources;
- they are recognised as expenses if they are operating expenses for the bodies in charge of environmental concerns, environmental supervision, training and skill enhancement in environmental matters, environmental duties and taxes, and waste processing.

(1) See Note 2. "Sales".

NOTE 3 – SIGNIFICANT EVENTS AND TRANSACTIONS OF 2019 AND 2018

3.1 SIGNIFICANT EVENTS AND TRANSACTIONS OF 2019

3.1.1 Investment programme for 2019

In response to the challenges of the energy transition, RTE's investment programme serves substantial needs, concerning not only reinforcement of inter-connections with neighbouring European networks, but also the incorporation of new types of generation facilities, adaptation of the network in line with changes in consumption patterns, and replacement of assets to maintain a quality service. Investment expenditure for 2019 amounted to €1,456 million, 89% of the amount authorised by the French energy regulator CRE (Commission de régulation de l'énergie).

The principal investment expenditure of 2019 concerned major transmission projects, particularly the IFA2 and Savoy-Piedmont interconnection projects, reconstruction of the Avelin-Gavrelle line, and regional projects such as reinforcement of the Durance valley electricity line, replacing the Carrières-Valescourt line by a new underground line, and the Saint Nazaire offshore wind farm connection project.

3.1.2 TURPE 5 network access tariff

The TURPE 5 transmission network access tariff came into force on 1 August 2017 for a four-year period, with revisions on 1 August every year to reflect inflation and the gradual balancing of the income and expenses adjustment account (CRCP⁽¹⁾).

The "TURPE 5 HTB" tariffs for use of the high-voltage public electricity transmission network were raised by 2.16% from 1 August 2019 in application of the CRE's decision of 6 June 2019.

3.1.3 Financing transactions of the year

In September 2019, RTE issued two new bonds:

- a €700 million bond with 30-year maturity and an annual coupon of 1.125%,
- a €500 million bond with 8-year maturity and an annual coupon of 0%.

In September 2019 RTE redeemed a bond totalling €600 million.

In October 2019 RTE repaid €200 million of an EIB loan.

These operations contribute to the financing of RTE's investment programmes and extend the average maturity of debt, which increased from 9.1 to 10.2 years between 31 December 2018 and 31 December 2019.

3.1.4 Tax inspections

RTE has no significant tax litigation in process. The tax inspection concerning the years 2015 and 2016 was completed in December 2018. The financial consequences of this inspection are non-significant as the principal amounts only have a temporary financial impact in RTE's financial statements.

3.1.5 Dividends

On 5 June 2019, the Supervisory Board approved the proposal put forward by the shareholders at their General Meeting of 5 June 2019 to pay a dividend of €362 million or approximately €1.70 per share.

3.2 SIGNIFICANT EVENTS AND TRANSACTIONS OF 2018

3.2.1 Investment programme for 2018

In response to the challenges of the energy transition, RTE's investment programme serves substantial needs, concerning not only reinforcement of inter-connections with neighbouring European networks, but also the incorporation of new types of generation facilities, adaptation of the network in line with changes in consumption patterns, and replacement of assets to maintain a quality service. Investment expenditure for 2018 amounted to €1,447 million, 97% of the amount authorised by the French energy regulator CRE (Commission de régulation de l'énergie). The principal investment expenditures in 2018 concerned the major projects for construction of the Savoy-Piedmont and IFA2 interconnections, the Durance valley network reinforcement project (Haute Durance regional network project), and conversion of the Cergy-Persan major transmission line from 225kV to 400kV.

⁽¹⁾ *Compte de régulation des charges et des produits*. The CRCP account for each tariff period records the differences between forecasts and actual results on certain items the CRE considers difficult to forecast or difficult to control (network access, energy purchases to compensate for network losses, interconnections). These differences are then passed on to network users through future tariff adjustments.

3.2.2 TURPE 5 network access tariff

The TURPE 5 transmission network access tariff came into force on 1 August 2017 for a four-year period, with revisions on 1 August every year to reflect inflation and the gradual balancing of the income and expenses adjustment account (CRCP⁽¹⁾).

The “TURPE 5 HTB” tariffs for use of the high-voltage public electricity transmission network were raised by 3% from 1 August 2018 in application of the CRE’s decision of 17 May 2018.

3.2.3 Financing transactions of the year

In June 2018, RTE made a fourteen-year drawing of €250 million on financing from the European Investment Bank (EIB).

In September 2018, RTE issued a €1 billion bond in two tranches, one of €500 million with twelve-year maturity and an annual coupon of 1.5%, and the other of €500 million with 20-year maturity and an annual coupon of 2.125%.

In September 2018, RTE redeemed a bond totalling €1 billion.

These operations contributed to the financing of RTE’s investment programmes and extended the average maturity of debt, which increased from 8.3 to 9.1 years between 31 December 2017 and 31 December 2018.

3.2.4 Tax inspections

RTE had no significant tax litigation in process in 2018.

The tax inspection concerning the years 2015 and 2016 was completed in December 2018. The financial consequences of this inspection are non-significant as the principal amounts only have a temporary financial impact in RTE’s financial statements.

(1) *Compte de régulation des charges et des produits*. The CRCP account for each tariff period records the differences between forecasts and actual results on certain items the CRE considers difficult to forecast or difficult to control (network access, energy purchases to compensate for network losses, interconnections). These differences are then passed on to network users through future tariff adjustments.

NOTE 4 – CHANGES IN THE SCOPE OF CONSOLIDATION

As of 2019, Celtic Interconnector is included in the Group's scope of consolidation.

NOTE 5 – SEGMENT REPORTING

In compliance with IFRS 8 “Operating segments”, which requires segment reporting, the Group only reports one operating segment, corresponding to the electricity transmission activity as regularly reviewed by the Executive Board.

NOTE 6 – SALES

Sales are comprised of:

(in thousands of euros)	2019	2018
Transmission network access – distributors	3,736,213	3,753,889
Transmission network access – other users	541,501	545,576
Interconnections	450,152	404,992
Other services	127,840	112,301
Sales	4,855,705	4,816,759

NOTE 7 – ENERGY PURCHASES

(in thousands of euros)	2019	2018
Energy purchases	(459,547)	(444,921)

Energy purchases concern electricity purchases undertaken to compensate for transmission network losses. Each year they include settlement of forward energy purchase contracts concluded in previous years. They also include the impact of capacity certificate purchases made in application of the Capacity Mechanism (see note 2.7).

NOTE 8 – OTHER EXTERNAL EXPENSES

Other external expenses comprise:

(in thousands of euros)	2019	2018
External services	(525,625)	(561,547)
System operation purchases (excluding energy purchases)	(393,621)	(438,889)
Other purchases	(275,231)	(163,639)
Change in inventories and capitalised production	395,073	267,816
Other external expenses	(799,404)	(896,260)

NOTE 9 – CONTRACTUAL OBLIGATIONS AND COMMITMENTS

In the course of its business, the Group has given and received commitments jointly with third parties. At 31 December 2019, these commitments mature as follows:

Commitments given (in thousands of euros)	31.12.2019	Maturities			31.12.2018
		<1 year	1-5 years	>5 years	
Operating contract performance commitments given	–	–	–	–	332
Commitments related to orders for operating items	884,677	662,712	220,912	1,054	1,217,168
Other operating commitments	–	–	–	–	–
Total operating commitments given	884,677	662,712	220,912	1,054	1,217,500
Financing commitments given	50,000	50,000	–	–	–
Investing commitments given	1,086,047	835,423	250,187	438	887,751
Total commitments given	2,020,725	1,548,135	471,098	1,492	2,105,251

Commitments received (in thousands of euros)	31.12.2019	Maturities			31.12.2018
		<1 year	1-5 years	>5 years	
Operating commitments received	350,176	308,279	40,276	1,622	410,807
Financing commitments received	1,550,000	50,000	1,500,000	–	1,500,000
Investing commitments received	498,313	142,988	355,324	–	714,150
Total commitments received	2,398,489	501,267	1,895,601	1,622	2,624,957

These commitments (given and received) represent existing rights and obligations with effects (inflows and outflows of resources) that depend on fulfilment of conditions or execution of subsequent operations.

The Group expects to draw future economic benefits from operating commitments given.

The Group has entered into forward electricity purchases as part of its normal business. These commitments are included in “Commitments related to orders for operating items”.

NOTE 10 – PERSONNEL EXPENSES

10.1 PERSONNEL EXPENSES

Personnel expenses comprise:

(in thousands of euros)	2019	2018
Wages and salaries	(543,896)	(528,308)
Social contributions	(308,243)	(303,991)
Employee profit sharing including employer contribution	(38,789)	(41,651)
Other expenses linked to short-term benefits	4,066	(462)
Short-term benefits	(886,863)	(874,412)
Benefits paid	73,271	76,028
Current year service cost	(62,119)	(76,561)
Plan amendment	-	-
Post-employment benefits	11,152	(533)
Benefits paid	10,607	10,573
Current year service cost	(12,615)	(12,802)
Actuarial gains and losses	(11,295)	7,427
Other long-term benefits	(13,303)	5,197
PERSONNEL EXPENSES	(889,014)	(869,748)

10.2 WORKFORCE

RTE's year-end workforce numbers were as follows:

	31.12.2019	31.12.2018
Executives	4,583	4,442
Supervisory and technical	3,743	3,739
Operational staff	382	381
Workforce with IEG status	8,708	8,562
Non IEG status	606	599
Total workforce	9,314	9,161

RTE's subsidiaries⁽¹⁾ have a total of 77 employees.

NOTE 11 – TAXES OTHER THAN INCOME TAXES

Taxes other than income taxes comprise:

(in thousands of euros)	2019	2018
Tax on pylons	(272,310)	(265,543)
Network tax (IFER)	(102,137)	(100,260)
Local economic contribution (CET)	(94,424)	(98,061)
Real estate tax	(39,156)	(40,025)
Other taxes	(37,227)	(40,326)
Taxes other than income taxes	(545,255)	(544,215)

(1) Subsidiaries owned 100% by RTE.

NOTE 12 - OTHER OPERATING INCOME AND EXPENSES

Other operating income and expenses comprise:

(in thousands of euros)	2019	2018
Gains (losses) on disposal of fixed assets	11,015	(23,104)
Net variation in provisions on current assets	474	875
Net variation in provisions for operating contingencies and losses	(10,102)	(2,718)
Other income and expenses	18,331	22,308
Other operating income and expenses	19,718	(2,638)

“Other income and expenses” mainly include certain penalties paid and received.

NOTE 13 - FINANCIAL RESULT

13.1 COST OF GROSS FINANCIAL INDEBTEDNESS

(in thousands of euros)	2019	2018
Cost of gross financial indebtedness	(170,672)	(195,424)

The cost of gross financial indebtedness mainly comprises:

- interest expenses on bond issues, totalling €191 million;
- application of IAS 23, which requires borrowing costs directly attributable to the acquisition, construction or production of a qualifying asset to be capitalised as part of the cost of that asset. The impact in 2019 was a positive €26 million (compared to €21 million in 2018).

13.3 OTHER FINANCIAL INCOME AND EXPENSES

Other financial income and expenses comprise:

(in thousands of euros)	2019	2018
Income on cash, cash equivalents and available-for-sale financial assets	(959)	(527)
Gains (losses) on other financial assets	(7,215)	(7,964)
Other financial income (expenses)	(477)	(707)
Return on fund assets	1,599	1,368
Other financial income and expenses	(7,052)	(7,830)

13.2 DISCOUNT EFFECT

(in thousands of euros)	2019	2018
Discount effect	(37,858)	(33,271)

The discount effect essentially concerns provisions for post-employment and long-term benefits.

NOTE 14 - INCOME TAXES

14.1 BREAKDOWN OF INCOME TAX

Details are as follows:

(in thousands of euros)	2019	2018
Current tax expense	(353,660)	(339,485)
Deferred taxes	48	2,370
Total	(353,612)	(337,115)

14.2 RECONCILIATION OF THE THEORETICAL AND EFFECTIVE TAX EXPENSE

(in thousands of euros)	2019	2018
Consolidated profit before tax of consolidated companies	(1,030,855)	(937,125)
Tax rate applicable	34.43%	34.43%
Theoretical tax expense	(354,948)	(322,652)
Differences in tax rate	(512)	1,431
Permanent differences ⁽¹⁾	(134)	(20,559)
Taxes without basis ⁽²⁾	1,333	1,336
Other	651	3,328
Actual tax expense	(353,612)	(337,115)
Effective tax rate	-34.30%	35.97%

(1) This principally includes the impact of restrictions on the deductibility of interest on borrowings.

(2) Tax credits reclassified as operating items, and the impact of the tax inspection for 2015-2016.

14.3 BREAKDOWN OF DEFERRED TAXES BY NATURE

(in thousands of euros)	31.12.2019	31.12.2018
Differences between depreciation recorded for accounting and tax purposes	14,407	13,026
Financial instruments	213	390
Provisions for employee benefits	466,748	365,895
Investment subsidies	205,502	190,045
Other deductible temporary differences	9,010	8,316
Total deferred tax assets	695,880	577,672
Differences between depreciation recorded for accounting and tax purposes	(372,618)	(360,602)
Other taxable temporary differences	(53,920)	(44,011)
Total deferred tax liabilities	(426,538)	(404,613)
Net deferred taxes	269,342	173,060

NOTE 15 – INTANGIBLE ASSETS

Intangible assets essentially comprise purchased or internally designed and developed software. The Group recognised no impairment on intangible assets at 31 December 2019 or 2018.

Increases in gross value include acquisitions of assets

and reclassifications. Decreases in gross value include disposals, retirements and reclassifications. Reclassifications mainly reflect the transfer of an asset from “intangible assets in progress” to the corresponding asset account when an asset is commissioned.

15.1 AT 31 DECEMBER 2019

(in thousands of euros)	31.12.2018	Augmentations	Diminutions	31.12.2019
Intangible assets in progress	136,628	107,522	(83,398)	160,752
Other intangible assets	858,198	84,604	(690)	942,112
Intangible assets, gross	994,826	192,126	(84,088)	1,102,864
Amortisation	(667,535)	(59,074)	–	(726,610)
Intangible assets, net	327,291	133,052	(84,088)	376,255

15.2 AT 31 DECEMBER 2018

(in thousands of euros)	31.12.2017	Increases	Decreases	31.12.2018
Intangible assets in progress	114,341	86,617	(64,330)	136,628
Other intangible assets	790,334	67,863	–	858,198
Intangible assets, gross	904,675	154,480	(64,330)	994,826
Amortisation	(613,377)	(54,158)	–	(667,535)
Intangible assets, net	291,298	100,322	(64,330)	327,291

NOTE 16 – PROPERTY, PLANT AND EQUIPMENT

The Group recognised no impairment on property, plant and equipment at 31 December 2019 or 2018.

Increases in gross value include acquisitions of assets and reclassifications. Decreases in gross value include disposals, retirements and reclassifications. Reclassifications mainly reflect the transfer of an

asset from “property, plant and equipment in progress” to the corresponding asset account when an asset is commissioned.

16.1 AT 31 DECEMBER 2019

(in thousands of euros)	31.12.2018	IFRS 16	01.01.2019	Increases	Decreases	31.12.2019
Land	175,504	-	175,504	2,230	(1,179)	176,555
Buildings (including IFRS 16 right-of-use assets) ⁽¹⁾	2,760,256	214,642	2,974,898	111,628	(14,402)	3,072,124
Réseaux	25,938,539	-	25,938,539	804,030	(151,013)	26,591,556
Other installations, machinery and equipment	1,081,761	-	1,081,761	105,299	(16,835)	1,170,226
Other property, plant and equipment	440,091	-	440,091	59,025	(15,367)	483,749
Property, plant and equipment in progress	1,894,831	-	1,894,831	1,346,860	(1,062,917)	2,178,020
Property, plant and equipment, gross	32,290,983	214,642	32,505,625	2,429,073	(1,261,713)	33,672,230
Land improvements	(64,311)	-	(64,311)	(2,466)	186	(66,592)
Buildings (including IFRS 16 right-of-use assets) ⁽¹⁾	(1,356,309)	-	(1,356,309)	(90,610)	12,373	(1,434,546)
Networks	(12,620,735)	-	(12,620,735)	(665,873)	111,710	(13,174,898)
Other installations, machinery and equipment	(780,887)	-	(780,887)	(61,606)	15,021	(827,472)
Other property, plant and equipment	(271,936)	-	(271,936)	(34,264)	14,207	(291,993)
Depreciation	(15,094,178)	-	(15,094,178)	(854,819)	153,496	(15,795,501)
Property, plant and equipment, net	17,196,805	214,642	17,196,805	1,574,254	(1,108,217)	17,876,729

(1) IFRS 16 right-of-use assets

At 31 December 2019, the Group has not recognised any impairment on its right-of-use assets. Increases in gross value include rights to use buildings. Decreases in gross value correspond to extinction of the right of use related to commercial leases.

(in thousands of euros)	01.01.2019	Increases	Decreases	31.12.2019
Commercial leases	211,482	51,519	(12,105)	250,896
Vehicle leases	3,160	-	-	3,160
Gross value	214,642	51,519	(12,105)	254,056
Commercial leases	-	(30,858)	12,105	(18,752)
Vehicle leases	-	(1,562)	-	(1,562)
Depreciation	-	(32,420)	12,105	(20,315)
Net value	214,642	19,099	-	233,741

16.2 AT 31 DECEMBER 2018

(in thousands of euros)	31.12.2017	Increases	Decreases	31.12.2018
Land	171,394	10,272	(6,162)	175,504
Buildings	2,709,429	91,014	(40,188)	2,760,256
Networks	25,217,537	1,036,277	(315,274)	25,938,539
Other installations, machinery and equipment	1,017,441	87,320	(23,000)	1,081,761
Other property, plant and equipment	419,423	31,460	(10,792)	440,091
Property, plant and equipment in progress	1,539,967	1,465,179	(1,110,315)	1,894,831
Property, plant and equipment, gross	31,075,191	2,721,522	(1,505,730)	32,290,983
Land improvements	(63,368)	(2,547)	1,604	(64,311)
Buildings	(1,303,454)	(74,019)	21,164	(1,356,309)
Networks	(12,089,255)	(710,324)	178,845	(12,620,735)
Other installations, machinery and equipment	(741,008)	(56,025)	16,146	(780,887)
Other property, plant and equipment	(250,839)	(30,343)	9,245	(271,936)
Depreciation	(14,447,924)	(873,258)	227,005	(15,094,178)
Property, plant and equipment, net	16,627,267	1,848,264	(1,278,725)	17,196,805

NOTE 17 - INVESTMENTS IN ASSOCIATES

Details of investments in associates are as follows:

(in thousands of euros)	31.12.2019			31.12.2018		
	% capital held	Share of equity	Share of net income	% capital held	Share of equity	Share of net income
HGRT	34%	31,288	3,628	34%	31,231	3,510
CORESO	16%	488	50	16%	351	(32)
Total		31,776	3,678		31,582	3,479

NOTE 18 – FINANCIAL ASSETS

18.1 BREAKDOWN BETWEEN CURRENT AND NON-CURRENT FINANCIAL ASSETS

Current and non-current financial assets break down as follows:

(in thousands of euros)	31.12.2019			31.12.2018		
	Current	Non-current	Total	Current	Non-current	Total
Financial assets	1,310,750	947	1,311,697	1,176,079	947	1,177,026
Loans and financial receivables ⁽¹⁾	439	12,931	13,370	11,366	9,873	21,239
Financial assets	1,311,189	13,878	1,325,067	1,187,445	10,820	1,198,266

(1) Net of impairment.

18.2 CHANGE IN CURRENT AND NON-CURRENT FINANCIAL ASSETS

The change in financial assets breaks down as follows:

18.2.1 At 31 December 2019

(in thousands of euros)	31.12.2018	Increases	Decreases	Changes in fair value	Impairment	31.12.2019
Financial assets	1,177,026	135,349	–	(679)	–	1,311,697
Loans and financial receivables	21,239	3,216	(11,075)	–	(10)	13,370
Financial assets	1,198,265	138,565	(11,075)	(679)	(10)	1,325,067

18.2.2 At 31 December 2018

(in thousands of euros)	31.12.2017	Increases	Decreases	Changes in fair value	Impairment	31.12.2018
Financial assets	1,000,448	177,085	(1,077)	571	–	1,177,026
Loans and financial receivables	23,218	54,571	(56,552)	–	2	21,239
Financial assets	1,023,666	231,655	(57,628)	571	2	1,198,265

18.3 BREAKDOWN OF FINANCIAL ASSETS

(in thousands of euros)	31.12.2019			31.12.2018		
	Equities	Debt securities/ investment funds	Total	Equities	Debt securities/ investment funds	Total
Liquid assets	-	1,310,750	1,310,750	-	1,176,079	1,176,079
Other securities	947	-	947	947	-	947
Financial assets	947	1,310,750	1,311,697	947	1,176,079	1,177,026

Liquid assets are financial assets consisting mostly of investment funds or negotiable debt instruments with maturity of over three months at the acquisition date, that are readily convertible into cash and are managed according to a liquidity-oriented policy.

They are stated at fair value, determined under the principles presented in note 2.15. In view of the characteristics of the investment funds, the fair value at 31 December 2019 was lower than their acquisition cost.

NOTE 19 - INVENTORIES

Inventories mostly consist of technical equipment for internal use.

(in thousands of euros)	31.12.2019	31.12.2018
Inventories, gross value	139,078	130,536
Impairment	(18,689)	(18,100)
Inventories, net value	120,389	112,436

NOTE 20 – TRADE AND SIMILAR RECEIVABLES

(in thousands of euros)	31.12.2019	31.12.2018
Trade and similar receivables, gross value	1,327,367	1,190,654
Provisions	(6,176)	(7,684)
Trade and similar receivables, net value	1,321,191	1,182,970

All trade receivables mature within one year.

The credit risk on trade and similar receivables is shown below:

	31.12.2019			31.12.2018		
(in thousands of euros)	Gross values	Provisions	Net values	Gross values	Provisions	Net values
Trade receivables	1,327,367	(6,176)	1,321,191	1,190,654	(7,684)	1,182,970
overdue by less than 6 months	788	(75)	713	4,863	(900)	3,963
overdue by 6-12 months	2,905	(582)	2,323	1,248	(198)	1,050
overdue by more than 12 months	9,877	(5,323)	4,554	11,414	(6,447)	4,966
Total overdue	13,570	(5,979)	7,591	17,525	(7,546)	9,979
Trade receivables not yet due	1,313,797	(196)	1,313,601	1,173,129	(138)	1,172,991

Most trade receivables not yet due concern invoices not yet issued.

NOTE 21 – OTHER RECEIVABLES

(in thousands of euros)	31.12.2019	31.12.2018
Payments in advance	14,231	38,893
Other receivables	160,835	157,209
Prepaid expenses	15,867	16,551
Other receivables, gross value	190,933	212,653
Provisions	(2,432)	(1,987)
Other receivables, net value	188,501	210,666

The majority of payments on other receivables are due within one year.

“Other receivables” mainly comprise amounts due from public authorities and the State, including VAT receivables.

The change in provisions on other receivables breaks down as follows:

(in thousands of euros)	31.12.2018	Increases	Decreases	31.12.2019
Provisions on other receivables	(1,987)	(577)	132	(2,432)

NOTE 22 – CASH AND CASH EQUIVALENTS

Cash and cash equivalents as stated in the cash flow statements include the following amounts recorded in the balance sheet:

(in thousands of euros)	31.12.2019	31.12.2018
Cash	130,836	77,138
Cash equivalents	30,000	40,007
Cash and cash equivalents	160,836	117,145

NOTE 23 – EQUITY

23.1 SHARE CAPITAL

At 31 December 2019, the share capital amounted to €2,132,285,690 and comprised 213,228,569 fully subscribed and paid-up shares with nominal value of €10 each, held by CTE.

In application of article 7 of the law of 9 August 2004, all of RTE's share capital must be held by EDF, the French state, or other public-sector companies or organisations.

23.2 DIVIDENDS

On 5 June 2019, the Supervisory Board approved the proposal put forward by the shareholders at their General Meeting of 5 June 2019 to pay a dividend of €362 million or approximately €1.70 per share.

NOTE 24 – PROVISIONS

24.1 BREAKDOWN BETWEEN CURRENT AND NON-CURRENT PROVISIONS

The breakdown between current and non-current provisions is as follows:

(in thousands of euros)	31.12.2019			31.12.2018		
	Current	Non-current	Total	Current	Non-current	Total
Provisions for employee benefits	106,111	1,822,272	1,928,383	78,214	1,437,142	1,515,356
Other provisions	22,128	30,469	52,597	23,434	18,382	41,816
Provisions	128,239	1,852,741	1,980,980	101,648	1,455,524	1,557,172

24.2 EMPLOYEE BENEFITS

24.2.1 Breakdown of changes in provisions for employee benefits

(in thousands of euros)	Obligations	Fund assets	Provision in the balance sheet
Balance at 31.12.2018	1,584,877	(69,521)	1,515,356
Net expense for 2019	111,820	(1,599)	110,221
Actuarial gains and losses	396,764	(10,080)	386,684
long-term benefits	11,295	-	11,295
post-employment benefits	385,469	(10,080)	375,389
Contributions to funds	-	-	-
Benefits paid	(87,986)	4,108	(83,878)
Balance at 31.12.2019	2,005,475	(77,092)	1,928,383

The change in provisions since 31 December 2018 results from changes in vested benefits, discounting of the liability, payments to external funds, benefits paid, changes in actuarial gains and losses and the past service cost.

24.2.2 Post-employment and long-term employee benefit expenses

(in thousands of euros)	31.12.2019	31.12.2018
Current service cost	74,734	89,364
Actuarial gains and losses - long-term benefits	11,295	(7,427)
Plan curtailments or settlements	-	-
Net expenses included in operating expenses	86,029	81,937
Interest expense (discount effect)	37,086	32,529
Return on fund assets	(1,599)	(1,368)
Net expenses included in financial result	35,487	31,161
Employee benefit expense recorded in the income statement	121,516	113,098
Actuarial gains and losses - post-employment benefits	385,469	(114,029)
Actuarial gains and losses - fund assets	(10,080)	4,245
Actuarial gains and losses	375,389	(109,784)
Gains and losses on employee benefits recorded directly in equity	375,389	(109,784)

Actuarial gains and losses on post-employment benefits break down as follows:

(in thousands of euros)	Long-term benefits	Post-employment benefits	31.12.2019
Experience adjustments	(2,888)	38,973	36,085
Changes in demographic assumptions	2,555	46,208	48,763
Changes in financial assumptions ⁽¹⁾	11,628	300,288	311,916
Actuarial gains and losses on obligations	11,295	385,469	396,764

(1) Financial assumptions mainly concern the discount rate, inflation rate and wage increase rate.

24.2.3 Breakdown by nature of provisions for employee benefits:

At 31 December 2019:

(in thousands of euros)	Obligations	Fund assets	Provision in the balance sheet
Provisions for post-employment benefits at 31 December 2019	1,863,716	(77,092)	1,786,624
including:			
Pensions	555,640	-	555,640
Benefits in kind (electricity/gas)	1,080,642	-	1,080,642
Retirement gratuities	86,926	(77,092)	9,834
Bereavement benefit	99,412	-	99,412
Other post-employment benefits	41,095	-	41,095
Provisions for other long-term benefits at 31 December 2019	141,759	-	141,759
including:			
Annuities following invalidity, industrial accident or work-related illness	85,552	-	85,552
Long-service awards	18,045	-	18,045
Other long-term benefits	38,163	-	38,163
Provisions for post-employment benefits at 31 December 2019	2,005,475	(77,092)	1,928,383

Fund assets amounted to €77 million at 31 December 2019 (€70 million at 31 December 2018).

They cover retirement gratuities and take the form of insurance contracts comprising 34.2% equities and 65.8% bonds at 31 December 2019 (respectively 27.3% and 72.7% at 31 December 2018).

24.2.4 Future cash flows

Cash flows related to future employee benefits are as follows:

	31.12.2019	
(in thousands of euros)	Cash flow under year-end economic conditions	Amount covered by provision (present value)
Less than one year	77,773	77,272
One to five years	271,540	261,574
Five to ten years	235,486	214,083
More than ten years	2,226,049	1,452,546
Cash flows related to employee benefits	2,810,848	2,005,475

24.2.5 Actuarial assumptions

The main actuarial assumptions used in calculating employee benefit obligations are summarised below:

(in %)	2019	2018
Discount rate / Return on fund assets	1.30	2.30
Inflation rate	1.30	1.50

24.2.6 Sensitivity analysis

(in %)	2019	2018
Impact of a 25 bp increase or decrease in the discount rate		
- on the amount of the obligation	-5.7 / +6.2	-5.0 / +5.5
- on the net expense for the following year	-3.1 / +3.4	-2.9 / +3.2
Impact of a 25 bp increase or decrease in the discount rate		
- on the amount of the obligation	+5.8 / -5.3	+5.1 / -4.7
- on the net expense for the following year	+7.4 / -6.7	+6.5 / -5.9

24.3 OTHER PROVISIONS

Details of changes in other provisions are as follows:

(in thousands of euros)	31.12.2018	Increases	Decreases ⁽¹⁾		31.12.2019
			Utilisations	Reversals	
Employer contribution to profit sharing	18,134	15,847	(18,134)	-	15,847
Other provisions	23,681	17,589	(4,520)	-	36,750
Other provisions	41,816	33,436	(22,655)	-	52,597

(1) Only provisions utilised.

“Other provisions” in this table mainly comprise an indemnity agreement and a provision for litigation with social security bodies.

24.4 CONTINGENT LIABILITIES

None.

NOTE 25 – FINANCIAL LIABILITIES

25.1 BREAKDOWN BETWEEN CURRENT AND NON-CURRENT FINANCIAL LIABILITIES

Current and non-current financial liabilities break down as follows:

(in thousands of euros)	31.12.2019			31.12.2018		
	Non-current	Current	Total	Non-current	Current	Total
Bonds	8,678,149	82,716	8,760,865	7,488,421	683,819	8,172,240
Other financial liabilities	1,611,705	460,471	2,072,176	1,368,599	668,017	2,036,616
Financial liabilities	10,289,854	543,187	10,833,041	8,857,019	1,351,836	10,208,855

(1) The IFRS 16 lease liability amounts to €259,306,000 at 31 December 2019.

“Other financial liabilities” essentially include RTE’s borrowings from the European Investment Bank, amounting to €1,350 million at 31 December 2019 (€1,550 million at 31 December 2018), and the IFRS 16 lease liability amounting to €259 million.

25.2 LOANS AND OTHER FINANCIAL LIABILITIES

25.2.1 Changes in loans and other financial liabilities

(in thousands of euros)	Bonds	Loans from EDF SA	Other financial liabilities (including the IFRS 16 lease liability) ⁽¹⁾	Accrued interest	Total
Balance at 31 December 2017	8,097,330	-	1,775,598	94,913	9,967,841
Increases	1,006,490	-	260,903	84,080	1,351,473
Decreases	(1,015,585)	-	39	(94,913)	(1,110,459)
Balance at 31 December 2018	8,088,236	-	2,036,540	84,080	10,208,855
Increases	1,185,136	-	252,873	82,775	1,543,730
Decreases	(595,223)	-	(217,296)	(84,080)	(919,545)
Balance at 31 December 2019	8,678,148	-	2,072,117	82,775	10,833,040

(1) Breakdown of the change in the IFRS 16 lease liability:

(in thousands of euros)	IFRS 16 lease liability
Balance at 1 January 2019	215,729
Increases	51,519
Decreases	(7,942)
IFRS 16 lease liability at 31 December 2019	259,306

All debts are in euros.

In September 2019, RTE issued two new bonds:

- a €700 million bond with 30-year maturity and an annual coupon of 1.125%,
- a €500 million bond with 8-year maturity and an annual coupon of 0%.

In September 2019 RTE redeemed a bond totalling €600 million.

The nominal values of the Group's principal borrowings at 31 December 2019 are as follows:

(in thousands of euros)	Issuance date	Maturity	Amount	Currency	Rate
Bond	2010	2022	750,000	EUR	3.875%
Bond	2011	2021	500,000	EUR	4.125%
Bond	2011	2021	250,000	EUR	4.125%
Bond	2013	2023	500,000	EUR	2.875%
Bond	2013	2028	100,000	EUR	3.380%
Bond	2014	2029	600,000	EUR	2.750%
Bond	2014	2024	500,000	EUR	1.625%
Bond	2014	2034	250,000	EUR	2.625%
Bond	2015	2025	1,000,000	EUR	1.625%
Bond	2016	2036	700,000	EUR	2.000%
Bond	2016	2026	650,000	EUR	1.000%
Bond	2017	2037	750,000	EUR	1.875%
Bond	2018	2030	500,000	EUR	1.500%
Bond	2018	2038	500,000	EUR	2.125%
Bond	2019	2049	700,000	EUR	1.125%
Bond	2019	2027	500,000	EUR	0.000%

The Group's bonds contain no financial covenant-type clauses.

25.2.2 Maturity of loans and other financial liabilities

(in thousands of euros)	Bonds	Other financial liabilities (including the IFRS 16 lease liability) ⁽¹⁾	Total
Less than one year	683,819	668,017	1,351,836
From one to five years	1,995,546	204,618	2,200,164
More than five years	5,492,875	1,163,980	6,656,855
Total loans and other financial liabilities at 31 December 2018	8,172,240	2,036,616	10,208,855
Less than one year	82,716	577,848	660,564
From one to five years	2,493,617	205,465	2,699,082
More than five years	6,184,531	1,288,863	7,473,395
Total loans and other financial liabilities at 31 December 2019	8,760,865	2,072,176	10,833,041

(1) Breakdown of changes in the IFRS 16 lease liability:

(in thousands of euros)	IFRS 16 lease liability
Less than one year	29,705
From one to five years	99,262
More than five years	130,339
IFRS 16 lease liability at 31 December 2019	259,306

25.2.3 Credit line

(in thousands of euros)	Total	Maturity		
		<1 year	1-5 years	>5 years
Confirmed credit line	1,500,000	–	1,500,000	–

On 21 June 2016 RTE signed a new bank credit facility that can be used to a maximum value of €1,500 million and is available for a period of five years, which can be extended for 2 further one-year periods. At 31 December 2019, the amount available on this credit facility was €1,500 million.

25.2.4 Fair value of loans and other financial liabilities

(in thousands of euros)	31.12.2019		31.12.2018	
	Fair value	Net book value	Fair value	Net book value
Bonds	10,170,269	8,760,865	9,076,424	8,172,240
Loan from EIB	1,340,537	1,350,000	1,497,405	1,550,000
Total	11,510,806	10,110,865	10,573,829	9,722,240

25.3 NET INDEBTEDNESS

Net indebtedness is not defined by accounting standards. It comprises total loans and financial liabilities, less cash and cash equivalents and liquid assets. Liquid assets are financial assets consisting of funds or negotiable debt instruments with initial maturity of over three months that are readily convertible into cash, and are managed according to a liquidity-oriented policy.

(in thousands of euros)	31.12.2019	31.12.2018
Loans and other financial liabilities	10,833,041	10,208,855
Cash and cash equivalents	(160,836)	(117,145)
Current financial assets	(1,311,189)	(1,187,445)
Net indebtedness	9,361,016	8,904,265

25.4 CHANGE IN NET INDEBTEDNESS

(in thousands of euros)	2019	2018
Operating profit before depreciation and amortisation (EBITDA)	2,182,203	2,058,976
Cancellation of non-monetary items included in EBITDA	(2,459)	1,736
Change in working capital	(103,714)	103,296
Other	–	3
Net cash flow from operations	2,076,031	2,164,011
Acquisitions of property, plant and equipment and intangibles	(1,458,273)	(1,449,710)
Disposals of property, plant and equipment and intangibles	4,382	6,240
Net financial expenses disbursed	(190,505)	(243,632)
Income tax paid	(380,680)	(377,250)
Free cash flow	50,955	99,658
Repayment of the lease liability	(259,306)	–
Adjusted free cash flow	(208,351)	99,658
Investments net of disposals	(3,042)	(791)
Dividends paid	(362,093)	(223,424)
Investment subsidies	116,971	84,624
Other changes	(2,346)	10,159
(Increase)/ Decrease in net indebtedness, excluding the impact of changes in scope of consolidation and exchange rates	(458,860)	(29,774)
Effect of other non-monetary changes	2,109	7,053
(Increase)/Decrease in net indebtedness	(456,751)	(22,721)
Net indebtedness at beginning of period	8,904,265	8,881,545
Net indebtedness at end of period	9,361,016	8,904,265

NOTE 26 – MANAGEMENT OF FINANCIAL RISKS

See section 3.3 of the Management report “Financial risks”.

NOTE 27 – DERIVATIVES

The Group may use derivatives in a range of hedging or macro-hedging strategies to limit the interest rate risk.

Details of interest rate hedging derivatives held for trading (interest rate swaps) that are not classified as hedges are as follows at 31 December 2019:

(in thousands of euros)	Notional at 31.12.2019			Notional at 31.12.2018		Fair value	
	<1 year	1 to 5 years	>5 years	Total	Total	31.12.2019	31.12.2018
Fixed rate payer / floating rate receiver	50,000	–	–	50,000	575,000	16	4
Floating rate payer / fixed rate receiver	–	–	–	–	–	–	–
Derivatives	50,000	–	–	50,000	575,000	16	4

NOTE 28 – TRADE AND OTHER PAYABLES

Details of trade and other payables are as follows:

(in thousands of euros)	31.12.2019	31.12.2018
Advance payments received	251,079	221,983
Trade payables	1,104,672	1,181,781
Tax and social charges	596,642	579,020
Deferred income	29,648	35,839
Investment subsidies	1,136,816	1,063,155
Other	5,344	24,070
Trade and other payables	3,124,202	3,105,849

NOTE 29 – RELATED PARTIES

29.1 TRANSACTIONS WITH EDF AND COMPANIES CONTROLLED BY EDF

Details of the main transactions with EDF or companies controlled by EDF (Enedis, EDF Trading, etc) are as follows:

(in thousands of euros)	31.12.2019	31.12.2018
Financial assets		
Investments	-	-
Other assets		
Trade and similar receivables	1,004,287	893,782
Other receivables	-	-
Advances and progress payments on orders	-	-
Financial liabilities		
Other liabilities		
Advances and progress payments on orders	79,498	88,543
Trade and similar payables	74,173	69,373
Other liabilities	-	-
Operating income and expenses		
Sales	3,780,663	3,796,445
Purchases for operation of the electricity system	220,846	255,433

“Trade and similar receivables” and “Sales” essentially correspond to invoicing for access to the electricity transmission network.

29.2 RELATIONS WITH THE FRENCH STATE AND OTHER ENTITIES OWNED BY THE STATE

In accordance with the legislation applicable to all companies having the French State as their majority shareholder, RTE is subject to certain inspection procedures, in particular economic and financial inspections by the State, audits by the French Court of Auditors (Cour des Comptes) or Parliament, and verifications by the French General Finance Inspectorate (Inspection Générale des Finances).

The French State intervenes through the regulation of electricity and gas markets, particularly for establishment of transmission tariffs, setting the ARENH (regulated access to historical nuclear electricity) price under the "NOME" law for modernisation of the electricity market, and the level of the Contribution to the Public Electricity Service (Contribution au service public de l'électricité or CSPE).

The Group carries out transactions with certain public-sector entities, essentially for invoicing of network access.

29.3 BOARD COMPENSATION

The Group's key management personnel are the members of the Executive Board and the Supervisory Board.

(in euros)	2019	2018
Compensation of Executive Board members	1,469,498	1,462,868
Compensation of Supervisory Board members ⁽¹⁾	332,134	337,257
Total	1,801,632	1,800,125

(1) Other than shareholder and State representatives.

The compensation paid to members of the Executive Board includes short-term benefits (basic salaries, performance-related salary, benefits in kind and indemnities) excluding social security charges.

The compensation paid to Supervisory Board members comprises the salary and benefits in kind (excluding social security charges) paid by RTE to the Chairman of the Supervisory Board and board members who are employee representatives and have an employment contract with the Group.

Board members who belong to the IEG regime benefit from the employee benefits (as defined by IAS 19) attached to that status. They receive no other special pension system, starting bonus or severance payment.

NOTE 30 – STATUTORY AUDITORS' FEES

The following table sets forth the fees paid to the statutory auditors for services during the 2019 financial year:

(in thousands of euros)	KPMG	Mazars
Statutory audit of RTE's individual and consolidated financial statements	375	375
Review of the individual financial statements of fully-consolidated entities	19	34
Non-audit services	98	30
Total	492	438

NOTE 31 – ENVIRONMENT

Expenses for the protection of the environment are described in chapter 4 of the Group's 2019 management report.

NOTE 32 – SUBSEQUENT EVENTS

None.

NOTE 33 – SCOPE OF CONSOLIDATION

The scope of consolidation at 31 December 2019 is as follows:

Company	Head office	% ownership	% voting rights	Consolidation method	Business sector
RTE, Réseau de transport d'électricité	Immeuble Window 7C, place du Dôme 92073 Paris-la Défense			Parent company	T
ARTERIA		100%	100%	FC	S
RTE INTERNATIONAL		100%	100%	FC	S
RTE IMMO		100%	100%	FC	S
AIRTELIS		100%	100%	FC	S
CIRTEUS		100%	100%	FC	S
IFA 2		50%	50%	JO	S
HGRT		34%	34%	EM	S
INELFE	Tour Cœur Défense B 100, esplanade du Général-de-Gaulle 92932 Paris-la Défense Cedex	50%	50%	JO	S
CORESO	71, avenue de Cortenbergh 1000 Bruxelles	16%	16%	EM	S
CELTIC INTERCONNECTOR	Dublin	50%	50%	JO	S

Consolidation methods: FC = full consolidation, JO = joint operation, EM = accounted for under the equity method.
Business segments: T = Transmission, S = Services.

APPENDIX



DETAILS OF METHODOLOGY FOR THE DECLARATION OF NON-FINANCIAL PERFORMANCE

To prepare the non-financial section of the 2019 Management report, the audit and risk division, the CSR division and the finance division worked with the main departments able to meet the requirements of articles L. 225-102-1 and R. 225-105-2 of the French commercial code. RTE publishes a Declaration of non-financial performance voluntarily; the regulatory requirement applies to CTE (Coentreprise de transport d'électricité).

These non-financial indicators derive from analysis of the risks presented in section 3 of this management report. They cover RTE's main environmental, social and societal risks.

Scope of non-financial reporting

The non-financial reporting concerns the full scope of the RTE Group, using its own methods which are applied across the whole year. The rules for inclusion in the reporting scope and consolidation of non-financial data are as follows:

- qualitative information: the scope comprises RTE SA and its fully-owned subsidiaries under exclusive control;
- quantitative environmental information: the scope comprises RTE SA and its fully-owned subsidiaries under exclusive control. Some RTE sites are installations classified for environmental protection purposes (ICPE⁽¹⁾), which are included in the non-financial reporting scope. RTE does not have any Seveso sites;

- quantitative company information: RTE SA, excluding subsidiaries (except for the workforce numbers reported in 4.6).

Fully-owned subsidiaries under exclusive control (Arteria, Cirtéus, RTE Immo, Airtelis, RTE International) account for 0.06% of the workforce.

Collection, consolidation, and control of datas

Reporting systems

Each business function has its own specific computer system for recording and consolidating the data used to form indicators.

RTE has an HR system that centralises most of the data for human resource management, taking data from the monitoring systems and the associated supporting documents. Data on training comes from a dedicated system.

On matters of safety, in October 2018 RTE set up an IT system to dematerialise the process for declaring accidents to the Carsat⁽²⁾.

For environmental information, the department in charge of environmental coordination uses a balanced scorecard to collect all the information required in the environmental management system. Some of these indicators are presented in the societal section of this report. There are also two dedicated information systems for biodiversity and waste management.

⁽¹⁾ Installation classée pour la protection de l'environnement.

⁽²⁾ Caisse d'assurance retraite et de la santé au travail, a workplace health body.

Consolidation process

Information from the HR system (apart from data on absenteeism) is reported monthly, as of the end of each month. It is consolidated in the regions, then passed on to national level, to the department in charge of contract management and payroll.

Environmental information is consolidated by the regions, which collect data from the local sub-units on their territory. The key data are reported to the department in charge of environmental coordination at national level three times a year for the purposes of the environmental management system. Other data are reported at variable frequencies.

Internal control procedures

Internal control procedures are rolled out through a network of local, regional and national correspondents. Data consolidation at regional, then national level is subject to coherence checks, and any significant variances must be explained.

Methodological details

The indicator definitions are based on several national and international references (social review, ISO 14001 and ISO 26000).

The choice of the key performance indicators presented reflects the specificities of the activity of a transmission network operator covering French territory only, and some require technical explanation.

Time scope

The time scope for all indicators is 1 January to 31 December of the year concerned, except for the percentage of women in the management committees, which corresponds to the percentage at 31 October 2019 (the figure published for 2018 has been updated and corresponds to the percentage at 31 December 2018).

Definitions of specific indicators

● *Social indicators*

- The social indicators presented concern the entire workforce (IEG and NON-IEG status, fixed-term and permanent contracts) whose work contract is in force at 31 December of the year. RTE SA employees seconded to Group subsidiaries are therefore included. Employees on secondment to subsidiaries owned less than 100%, employees on career-end leave and leave associated with training for promo-

tion, and absent employees whose contracts are suspended (unpaid leave) are not included. The distribution of employees by geographical zone is not presented, as all Group entities are located in mainland France.

- Fixed-term contracts include apprenticeship and professionalisation contracts.
- The absenteeism rate measures the percentage of total work time occupied by sick leave (excluding long-term sick leave) and other absences such as unexplained absences and absences following sanctions or industrial action.
- Training costs include the running costs of the employee professionalisation department, total payroll costs for trainers and trainees, and all expenses to do with courses themselves (training materials, employee travel costs, etc.).
- The figures for work-related accidents concern all accidents at work (excluding the journey between home and work) declared by RTE and all its contractors for the scopes of Maintenance and Development & Engineering between 1 January and 31 December 2019. Accidents that happened at contractors' premises outside these scopes are monitored by RTE but not included in calculation of the frequency rate since the total contractors' hours worked is not available. The principle is that only accidents recognised by the pension and workplace health body Carsat and the social security body CPAM⁽¹⁾ are included, although all accidents declared from mid-November are included regardless of the Carsat and CPAM decisions, since their decisions are issued up to two months after the first registration of the accident.
- To calculate the overall accident frequency rate, the ratio of "fatal accidents at work/ hours worked" is used, for both RTE employees and contractors' employees. The number of accidents at work comprises accidents that happened to RTE employees and accidents that happened to contractors' employees recorded for operations undertaken by the two main entities (Maintenance, and Development & Engineering). This means that 4 of the 67 accidents entailing sick leave reported by contractors in 2019 are not included in the overall frequency rate, because they concern non-Maintenance and Development & Engineering contractors. The volume of hours worked is included on the following basis: for RTE employees, it comprises actual hours worked, considered equivalent to theoretical hours worked as defined in their contracts, plus overtime, less absences; for contractors, the num-

(1) Caisse primaire d'assurance maladie.

ber of hours consumed is based on the amounts validated in contracts for transmission network infrastructures, painting and pruning issued by the three main RTE entities working with contractors (Maintenance, Development & Engineering, and GDIN). The overall accident frequency rate is calculated for a full calendar year.

- Percentage of women in the management committees: this indicator excludes members of the Executive Committee and the Executive Board. It concerns members of the management committees for the establishments, centres and sections.
- Employee pride score: this indicator is taken directly from RTE's internal "social barometer" survey, which is published annually.
- Percentage of employees who benefited from a professional development measure: this is the percentage of all RTE's employees (total workforce at year-end, excluding management executives) who attended a training or awareness-raising session during the year.

• *Environmental indicators*

- The "Overall waste recycling rate" indicator corresponds more specifically to the portion of waste that has entered a recycling process for waste produced directly by RTE's activities and waste produced by its contractors.
- Recycling rate for waste produced by RTE: the percentage of total waste resulting from RTE's activities that has entered a recycling process.
- Volume of SF₆ leaks: this indicates volumes of leaks of SF₆ based on observation of volumes added to the facilities during the year.

- Biodiversity-friendly sites: measurement of sites made biodiversity-friendly in the areas around network installations.
- "Zero phyto" office sites, new substations and existing substations: the percentage of RTE's office sites, new substations and existing substations managed under a "zero phyto" approach. The percentage for 2019 is calculated based on the maintenance instructions given to contractors.
- Recovery rate for hazardous waste tracking documents: this is calculated on the basis of returned documents between 1 July 2018 and 30 June 2019.

• *Societal indicators*

- The percentage of total purchases that were made from SMEs.
- The customer satisfaction rate, which is calculated by an external firm.

• *Industrial performance*

- The renewable energy power connected to the HTB high-voltage network: this is the renewable energy connected to RTE's network with power above 12 MW.
- Equivalent outage time, which measures the quality of the electricity delivered to customers.
- Equivalent outage time caused by weather events: this indicator is used to monitor the percentage of equivalent outage time attributable to weather conditions. It only reflects the share of outages with consequences for customers that results from atmospheric conditions.

External audit

Mazars has verified the compliance of the Declaration of non-financial performance in the 2019 management report and the sincerity of the information published, in accordance with articles L. 225-102-1 and R. 225-105-2 of the French commercial code.

Table of concordance with the Declaration of non-financial performance

Sections of the Declaration of non-financial performance	Links to the relevant chapters of the report
Business model	Chapter 2.1: Business model
Analysis and presentation methodology for major non-financial risks	Chap 3.1: Methodology (Risks) Chapter 3.2: Major risks including non-financial risks
Presentation of policies and procedures for major non-financial risks	Chapter 3.2: Major risks including non-financial risks Chapter 4.6: Looking after employees, rewarding and growing talents Chapter 4.4: Fighting climate change, protecting biodiversity and resources Chapter 3.6: Vigilance plan
Key performance indicators	Chapter 3.2: Major risks including non-financial risks

Table of concordance with the required themes stated in article L. 225-102-1

Elements of the Declaration of non-financial performance	Links to the relevant chapters of the report
Social consequences of the company's activity	Chapter 4.6: Looking after employees, rewarding and growing talents
Environmental consequences of the company's activity	Chapter 4.4: Fighting climate change, protecting biodiversity and resources
Respect of human rights	Chapter 3.2.2.5: Legal risk
Anti-corruption measures	Chapter 3.2.2.5: Legal risk
Anti-tax avoidance measures	Chapter 3.3.2: Action against tax avoidance
The climate change impact of the company's activity and use of the goods and services it produces	Chapter 3.2.2.11: (Risk of) Activities and networks ill-adapted to climate change Chapter 4.4.1: Action against climate change
Societal commitment to promote the circular economy	Chapter 4.4.2: Preserving resources (circular economy) and biodiversity
Collective agreements signed in the company and their impacts on its economic performance and employees' working conditions	Chapter 4.6.3: Encouraging social dialogue
Action against discrimination and to promote diversity	Chapter 4.6.4: Encouraging diversity, inclusion and workplace equality
Societal commitment to reduce food waste	Theme not relevant to RTE due to the nature of its activities
Measures in favour of disabled people	Chapter 4.6.4: Encouraging diversity, inclusion and workplace equality
Societal commitment to reduce food insecurity	Theme not relevant to RTE due to the nature of its activities
Societal commitment to promote animal welfare	Theme not relevant to RTE due to the nature of its activities
Societal commitment to promote responsible, fair, sustainable food	Theme not relevant to RTE due to the nature of its activities
Societal commitment to promote sustainable development	Chapter 3.2.2.13: Environmental damage: pollution, waste, biodiversity

GLOSSARY

Multi-year energy programme PPE (Programmation pluriannuelle de l'énergie)	France's new policy instrument setting out the priorities for action by the public authorities in relation to the energy transition, in accordance with the commitments made in the law on the energy transition for green growth.
CRE (Commission de régulation de l'énergie)	France's independent energy market regulator set up by law 2000-108 of 10 February 2000. The CRE's main mission is to oversee the operation of the electricity and gas market and ensure there is no discrimination, cross-subsidy or anticompetitive practice.
ENTSO-E (European Network of Transmission System Operators for Electricity)	Association of 41 TSOs from 34 member countries, formed to promote important aspects of electricity policies such as safety, the rise of renewable energies and the electricity market.
TSO	Transmission System Operator
SDDR (Schéma décennal de développement du réseau)	Ten-year network development plan
SRADDET (Regional plans for reorganisation, sustainable development, and regional equality)	Regional plans for reorganisation, sustainable development, and regional equality
ANSSI (Agence nationale de la sécurité des systèmes d'information)	The ANSSI is France's national authority for information systems security. It proposes rules to apply to protect State information systems and verifies application of the measures adopted.
Essoc law	French law "for a State serving a society of trust"
EirGrid	The Irish TSO
Avere France (Association nationale pour le développement de la mobilité électrique)	An association promoting development of electric mobility
Ademe (Agence de l'environnement et de la maîtrise de l'énergie)	French agency for the environment and energy control
Afnor (Association française de normalisation)	The French national organisation for standardisation

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STATUTORY AUDITORS' REPORT ON THE CONSOLIDATED FINANCIAL STATEMENTS

For the year ended 31 December 2019

This is a translation into English of the statutory auditors' report on the financial statements of the company issued in French and it is provided solely for the convenience of English speaking users.

This statutory auditors' report includes information required by European regulation and French law, such as information about the appointment of the statutory auditors or verification of the management report and other documents provided to shareholders.

This report should be read in conjunction with, and construed in accordance with, French law and professional auditing standards applicable in France.

To the Shareholders,

OPINION

In compliance with the engagement entrusted to us by your annual general assembly, we have audited the accompanying consolidated financial statements of RTE for the year ended 31 December 2019.

In our opinion, the consolidated financial statements give a true and fair view of the assets and liabilities and of the financial position of the Group as at 31 December 2019 and of the results of its operations for the year then ended in accordance with International Financial Reporting Standards as adopted by the European Union.

The audit opinion expressed above is consistent with our report to the Audit Committee.

BASIS FOR OPINION

Audit framework

We conducted our audit in accordance with professional standards applicable in France. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Our responsibilities under those standards are further described in the statutory auditors' responsibilities for the audit of the consolidated financial statements section of our report.

Independence

We conducted our audit engagement in compliance with independence rules applicable to us, for the period from 1 January 2019 to the date of our report and specifically we did not provide any prohibited non-audit services referred to in article 5⁽¹⁾ of Regulation (EU) No. 537/2014 or in the French Code of ethics (*Code de déontologie*) for statutory auditors.

Emphasis of matter

We draw attention to the following matter described in note 1.2.1 and 2.13 to the consolidated financial statements relating to IFRS 16 "Leases" which was adopted by the European Union and is mandatory for financial years beginning on or after 1 January 2019. Our opinion is not modified in respect of this matter.

JUSTIFICATION OF ASSESSMENTS - KEY AUDIT MATTER

In accordance with the requirements of articles L. 823-9 and R. 823-7 of the French Commercial Code (*Code de commerce*) relating to the justification of our assessments, we inform you of the key audit matter relating

to risks of material misstatement that, in our professional judgment, was of most significance in our audit of the consolidated financial statements of the current period, as well as how we addressed this risk.

This matter was addressed in the context of our audit of the consolidated financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on specific items of the consolidated financial statements.

REGULATED ENVIRONMENT

Notes 2.7 "Sales", 2.12 "Property, plant and equipment", 3.1.2 "TURPE 5" et 7 "Energy purchases"

Description of risk

RTE is overseen by the French Energy Regulatory Commission (CRE). The tariff mechanism is set to cover all of RTE's costs, insofar as they reflect the cost of an efficient system operator and makes it possible to smooth and rectify the effects of certain climatic events or economic risk which can impact the electricity transmission in France.

The tariff authorised by the CRE being applied since 1 August 2017 (TURPE 5: *tarif d'utilisation des réseaux public d'électricité 5*) sets the targets of significant investments planned, operational costs and interconnections revenues over the period of four years from 1 January 2017 to 31 December 2020:

- interconnections revenues;
- operational costs expenses related to the electrical system;
- net operating cost;
- normative capital cost.

The CRCP (*Compte de régulation des charges et des produits*) account for each period records the differences between forecasts and actual results on certain items (network access, energy purchases to compensate for network losses, interconnections) the CRE considers difficult to forecast or difficult to control. These differences are then passed on to network users through future tariff adjustments.

In addition to the tariff, the CRE also sets out a regulatory framework to encourage RTE to improve its performance by setting up incentive mechanisms. These financial mechanisms result in bonuses or penalties, depending on whether the objectives are met.

Compliance with defined forecasts and incentive mechanisms both are essential for the accounting of RTE's business.

Given its impacts on the sales, on energy purchases, on Opex or Capex classification and on the accounting treatment of regulatory mechanisms, we deemed the regulatory environment to be a key audit matter.

How our audit addressed this risk

Our work included:

- having a good understanding of the regulatory mechanisms (in particular the new TURPE 5) and of controls set by the Group for accounting sales, operating expenses and investments;
- analyzing main financial aggregates above, and significant variations compared to the previous year to drive our work;
- ensuring that TURPE 5 new tariff conditions have been updated in the information systems;
- checking reciprocal positions declared by Enedis facing RTE;
- reconciling data from the Joint Allocation Office (joint auction office with several European network operators) with the interconnections revenues;
- testing, on a sample basis, sales booked as revenue and assess the accounting classification used;
- testing, on a sample basis, operating expenses booked in the income statement and assess the accounting classification used;
- analyzing main projects of the period in order to test their commissioning dates, and check the new investment subsidies;
- testing, on a sample basis, capital expenditure booked as assets in the balance sheet to ensure they meet the accounting rules and principles described in note 2.12;

- analyzing effects of regulatory mechanisms, in particular on energy purchases, and assess application of accounting standards and associated accounting impacts;
- analyze and validate the absence of any significant impact linked to the application of IFRS 15 on revenue recognition;
- appreciate the information provided in the appendix.

SPECIFIC VERIFICATIONS

We have also performed, in accordance with professional standards applicable in France, the specific verifications required by laws and regulations of the Group's information given in the management report of the Executive Board.

We have no matters to report as to its fair presentation and its consistency with the consolidated financial statements.

We attest that the consolidated non-financial statement required by article L. 225-102-1 of the French Commercial Code (*Code de commerce*) is included in the Group's management report, it being specified that, in accordance with the provisions of article L. 823-10 of this code, we have verified neither the fair presentation nor the consistency with the consolidated financial statements of the information contained therein, and this information must be reported by an independent third party.

REPORT ON OTHER LEGAL AND REGULATORY REQUIREMENTS

Appointment of the statutory auditors

We were appointed as statutory auditors of RTE by the annual general meeting held on 30 May 2017 for KPMG and on 19 June 2009 for Mazars.

As at 31 December 2019, KPMG and Mazars were in the third year and eleventh year of total uninterrupted engagement respectively.

RESPONSIBILITIES OF MANAGEMENT AND THOSE CHARGED WITH GOVERNANCE FOR THE CONSOLIDATED FINANCIAL

STATEMENTS

Management is responsible for the preparation and fair presentation of the consolidated financial statements in accordance with International Financial Reporting Standards as adopted by the European Union and for such internal control as management determines is necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated financial statements, management is responsible for assessing the company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless it is expected to liquidate the company or to cease operations.

The Audit Committee is responsible for monitoring the financial reporting process and the effectiveness of internal control and risks management systems and where applicable, its internal audit, regarding the accounting and financial reporting procedures.

The consolidated financial statements were approved by the Management Board.

STATUTORY AUDITORS' RESPONSIBILITIES FOR THE AUDIT OF THE CONSOLIDATED FINANCIAL STATEMENTS

Objectives and audit approach

Our role is to issue a report on the consolidated financial statements. Our objective is to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with professional standards will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated financial statements.

As specified in article L. 823-10-1 of the French Commercial Code (*Code de commerce*), our statutory audit does not include assurance on the viability of the company or the quality of management of the affairs of the company.

As part of an audit conducted in accordance with professional standards applicable in France, the statutory auditor exercises professional judgment throughout the audit and furthermore:

- Identifies and assesses the risks of material misstatement of the consolidated financial statements, whether due to fraud or error, designs and performs audit procedures responsive to those risks, and obtains audit evidence considered to be sufficient and appropriate to provide a basis for his opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control;
- obtains an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the internal control;
- evaluates the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management in the consolidated financial statements;
- assesses the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the company's ability to continue as a going concern. This assessment is based on the audit evidence obtained up to the date of his audit report. However, future events or conditions may cause the company to cease to continue as a going concern. If the statutory auditor concludes that a material uncertainty exists, there is a requirement to draw attention in the audit report to the related disclosures in the consolidated financial statements or, if such disclosures are not provided or inadequate, to modify the opinion expressed therein;

- evaluates the overall presentation of the consolidated financial statements and assesses whether these statements represent the underlying transactions and events in a manner that achieves fair presentation;

- obtains sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express an opinion on the consolidated financial statements. The statutory auditor is responsible for the direction, supervision and performance of the audit of the consolidated financial statements and for the opinion expressed on these consolidated financial statements.

Report to the Audit Committee

We submit a report to the Audit Committee which includes in particular a description of the scope of the audit and the audit program implemented, as well as the results of our audit. We also report, if any, significant deficiencies in internal control regarding the accounting and financial reporting procedures that we have identified.

Our report to the Audit Committee includes the risks of material misstatement that, in our professional judgment, were of most significance in the audit of the consolidated financial statements of the current period and which are therefore the key audit matter, that we are required to describe in this audit report.

We also provide the Audit Committee with the declaration provided for in article 6 of Regulation (EU) No. 537/2014, confirming our independence within the meaning of the rules applicable in France such as they are set in particular by articles L. 822-10 to L. 822-14 of the French Commercial Code (*Code de commerce*) and in the French Code of Ethics (*Code de déontologie*) for statutory auditors. Where appropriate, we discuss with the Audit Committee the risks that may reasonably be thought to bear on our independence, and the related safeguards.

Paris-la Défense, on 12 February 2020

The statutory auditors

French original signed by

KPMG Audit

Département de KPMG SA

Jacques-François Lethu
Partner

Mazars

Francisco Sanchez
Partner

REPORT BY ONE OF THE STATUTORY AUDITORS ON THE CONSOLIDATED NON-FINANCIAL STATEMENT INCLUDED ON A VOLUNTARY BASIS IN THE GROUP MANAGEMENT REPORT

For the year ended 31 December 2019

This is a free translation into English of the statutory auditor's report issued in French and is provided solely for the convenience of English speaking readers. This report should be read in conjunction with, and construed in accordance with, French law and professional standards applicable in France.

To the Shareholders,

In our capacity as statutory auditor of your company, we hereby report to you on the non-financial statement⁽¹⁾ for the year ended 31 December 2019 (hereinafter the “Statement”), included on a voluntary basis in the Group management report in reference to the requirements of articles L. 225-102-1, R. 225-105 and R. 225-105-1 of the French commercial code (*Code de commerce*).

THE ENTITY’S RESPONSIBILITY

The Board of Directors is responsible for preparing the Statement, including a presentation of the business model, a description of the principal non-financial risks, a presentation of the policies implemented considering those risks and the outcomes of said policies, including key performance indicators.

The Statement has been prepared in accordance with the entity's procedures (hereinafter the “Guidelines”), the main elements of which are presented in the Statement or are available on request at company headquarters.

INDEPENDENCE AND QUALITY CONTROL

Our independence is defined by the requirements of article L. 822-11-3 of the French commercial code (*Code de commerce*) and the French code of ethics (*Code de déontologie*) of our profession. In addition, we have implemented a system of quality control including documented policies and procedures regarding compliance with applicable legal and regulatory requirements, the ethical requirements and French professional guidance.

RESPONSIBILITY OF THE STATUTORY AUDITOR

On the basis of our work, our responsibility is to provide a report expressing a limited assurance conclusion on:

- the compliance of the Statement with the requirements of article R. 225-105 of the French commercial code (*Code de commerce*);
- the fairness of the information provided in accordance with article R. 225-105 I, 3° and II of the French commercial code (*Code de commerce*), i.e., the outcomes, including key performance indicators, and the measures implemented considering the principal risks (hereinafter the “Information”).

However, it is not our responsibility to comment on the entity's compliance with other applicable legal and regulatory requirements, in particular the French duty of care law and anti-corruption and tax avoidance legislation nor on the compliance of products and services with the applicable regulations.

NATURE AND SCOPE OF OUR WORK

The work described below was performed in accordance with the provisions of articles A. 225-1 *et seq.* of the French commercial code (*Code de commerce*), as well as with the professional guidance of the French Institute of statutory auditors ("CNCC") applicable to such engagements and with ISAE 3000⁽¹⁾.

Our procedures allowed us to assess the compliance of the Statement with regulatory provisions and the fairness of the Information:

- we obtained an understanding of all the consolidated entities' activities, the description of the social and environmental risks associated with their activities and, where applicable, the impact of this activity on compliance with human rights and anti-corruption and tax evasion legislation, as well as the resulting policies and their outcomes;
- we assessed the suitability of the Guidelines with respect to their relevance, completeness, reliability, neutrality and understandability, with due consideration of industry best practices, where appropriate;
- we verified that the Statement includes each category of social and environmental information set out in article L. 225-102-1 III: as well as information regarding compliance with human rights and anti-corruption and tax evasion legislation;
- we verified that the Statement includes an explanation for the absence of the information required under article L. 225-102-1 III, 2;
- we verified that the Statement presents the business model and the principal risks associated with all the consolidated entities' activities, including where relevant and proportionate, the risks associated with their business relationships, their products or services, as well as their policies, measures and the outcomes there of, including key performance indicators;
- we verified, where relevant with respect to the principal risks or the policies presented, that the Statement provides the information required under article R. 225-105 II;
- we assessed the process used to identify and confirm the principal risks;
- we asked what internal control and risk management procedures the entity has put in place;
- we assessed the consistency of the outcomes and the key performance indicators used with respect to the principal risks and the policies presented;
- we verified that the Statement covers the scope of consolidation, i.e. all the companies included in the scope of consolidation in accordance with article L. 233-16 within the limitations set out in the Statement;
- we assessed the data collection process implemented by the entity to ensure the completeness and fairness of the Information.

For the key performance indicators and other quantitative outcomes that we considered to be the most important, we implemented:

- analytical procedures to verify the proper consolidation of the data collected and the consistency of any changes in those data;
- substantive tests, using sampling techniques, in order to verify the proper application of the definitions and procedures and reconcile the data with the supporting documents. This work was carried out on a selection of contributing entities and covers between 21% and 100% of the consolidated data relating to the key performance indicators and outcomes selected for these tests;
- we referred to documentary sources and conducted interviews to corroborate the qualitative information (measures and outcomes) that we considered to be the most important;
- we assessed the overall consistency of the Statement based on our knowledge of all the consolidated entities.

We believe that the work carried out, based on our professional judgement, is sufficient to provide a basis for our limited assurance conclusion; a higher level of assurance would have required us to carry out more extensive procedures.

(1) SAE 3000 – Assurance engagements other than audits or reviews of historical financial information.

MEANS AND RESOURCES

Our work was carried out by a team of six people between October 2019 and January 2020 and took a total of six weeks.

We conducted some 15 interviews with the people responsible for preparing the Statement, representing in particular the CSR department, the risk department, the human resources department, the health and safety department, the environment department and the purchasing department.

CONCLUSION

Based on the procedures performed, nothing has come to our attention that causes us to believe that the non-financial statement is not presented in accordance with the applicable regulatory requirements and that the Information, taken as a whole, is not presented fairly in accordance with the Guidelines, in all material respects.

KPMG Audit

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STATUTORY AUDITORS' REPORT ON REGULATED AGREEMENTS AND COMMITMENTS

For the year ended 31 December 2019

This is a translation into English of the statutory auditors' report on the financial statements of the company issued in French and it is provided solely for the convenience of English speaking users.

This statutory auditors' report includes information required by European regulation and French law, such as information about the appointment of the statutory auditors or verification of the management report and other documents provided to shareholders.

This report should be read in conjunction with, and construed in accordance with, French law and professional auditing standards applicable in France.

To the Shareholders,

In our capacity as your company's statutory auditors, we hereby report to you on regulated agreements and commitments.

It is our responsibility to report to shareholders, based on the information provided to us, on the main terms and conditions as well as the rationale for the interest in the company of agreements and commitments that have been disclosed to us or that we may have identified as part of our engagement, without commenting on their relevance or substance or identifying any undisclosed agreements or commitments. Under the provisions of article R. 225-58 of the French Commercial Code (*Code de commerce*), it is the responsibility of the shareholders to determine whether the agreements and commitments are appropriate and should be approved.

Where applicable, it is also our responsibility to provide shareholders with the information required by article R. 225-58 of the French Commercial Code (*Code de commerce*) in relation to the implementation during the year of agreements and commitments already approved by the Shareholders' Meeting.

We performed the procedures that we deemed necessary in accordance with the guidance issued by the French Institute of statutory auditors (Compagnie nationale des commissaires aux comptes) for this type of engagement. These procedures consisted in verifying that the information given to us is consistent with the underlying documents.

AGREEMENTS AND COMMITMENTS SUBMITTED TO THE APPROVAL OF THE GENERAL SHAREHOLDERS' MEETING

Agreements and commitments authorized during the year

In accordance with article R. 225-88 of the French Commercial Code (*Code de commerce*), we have been informed of the following agreements and commitments approved prior to your Supervisory Board.

Agreement between RTE and EDF for the financial regularization of costs and gains due to the long-guaranteed stop of unit 2 of the Porcheville power plant.

This transactional agreement has been signed in order to financially regularize all the costs and gains for EDF directly attributable to RTE's request of 9 January 2017 to exit the longterm guaranteed shutdown of unit 2 of the Porcheville power plant. This exit was the only lever at the time allowing to guarantee the safety of the electrical grid given the forecast weather conditions.

The amount due from RTE to EDF, under this transactional protocol, has been set at €2,868 thousand (without tax). The different principles and methods of

regularisation have been validated by the Energy Regulatory Commission before the end of the protocol.

In accordance with article 14-IV of the bylaws, the Supervisory Board of RTE authorised the conclusion of this transactional protocol during its meeting of 12 December 2019. This protocol was signed on 9 January 2020.

CONTINUING AGREEMENTS AND COMMITMENTS PREVIOUSLY APPROVED BY THE GENERAL SHAREHOLDERS' MEETING

Agreements and commitments approved in prior years and which remained current during the last year

In accordance with article R. 225-57 of the French Commercial Code (*Code de commerce*), we have been informed of the following agreements and commitments approved in prior years and which remained current during the last year.

Agreement for the transfer of assets between RTE - Réseau de transport d'électricité and Enedis (ERDF) extending the arrangements made at the time of the contribution of assets by EDF

Pursuant to law no. 2004-803 dated 9 August 2004 and decree no. 2005-172 dated 22 February 2005, defining the characteristics of the electricity transmission system and setting out principles for the classification of infrastructure components, Électricité de France (via its Réseau de Distribution and EDF-GDF Services divisions) and RTE - Réseau de transport d'électricité prepared, on 4 April 2005, a list classifying 2,131 source substations into three groups and eight categories based on those principles and specifying, in particular, the owner of each asset.

The agreement with Enedis (ERDF) signed on 22 December 2011 sets out the principles for the transfers of property between RTE - Réseau de transport d'électricité and Enedis (ERDF), Électricité de France's subsidiary in charge of electricity distribution.

For the year ended 31 December 2019, your company sold source substations to Enedis (ERDF) in an amount of €434 thousand (without tax) and acquired source substations by Enedis (ERDF) in an amount of €800 thousand (without tax).

Members of the Supervisory Board concerned:
Ms Marie-Hélène Poinssot et Mr Xavier Girre, members of the Supervisory Board of Enedis (ERDF).

Pass of an electricity transmission link in the safety tunnel of the Fréjus road tunnel, now second tube

Agreement signed between RTE and Société française du tunnel routier du Fréjus (SFTRF), related to the execution of the works in the second road tube of the Fréjus tunnel concluded as part of the realisation of the Savoy-Piedmont project. Its signature on 15 November 2018 was authorised by the Supervisory Board at the meeting of 24 July 2018.

For the year ended 31 December 2019, the execution of this agreement led to invoiced services for an amount of €3,197 thousand (excluding taxes) with SFTRF.

Members of the Executive Board concerned:
Ms Valérie Champagne, director and chairman of the audit committee of Société française du tunnel routier du Fréjus (SFTRF).

Paris-la Défense, on 12 February 2020

The statutory auditors

French original signed by

KPMG Audit
Département de KPMG SA

Jacques-François Lethu
Partner

Mazars

Francisco Sanchez
Partner



Le réseau
de transport
d'électricité

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