



The Energy Regulatory Commission (CRE) consults with market participants.

## **PUBLIC CONSULTATION OF FEBRUARY 14<sup>TH</sup> 2019 NO 2019-003 ON THE REGULATORY FRAMEWORK APPLICABLE TO THE OPERATORS OF REGULATED INFRASTRUCTURE IN FRANCE**

Under Articles L. 452-1 to L. 452-3 and L. 341-3 of the Energy Code, the Energy Regulatory Committee (Commission de Régulation de l'Énergie - CRE) is responsible for determining the methodology for setting the tariffs for the use of regulated infrastructure in the energy sector (natural gas and electricity). As such, it has set for several years, regularly every four years:

- a tariff structure for each type of infrastructure, composed of different terms or components. This structure, set in a transparent and non-discriminatory manner, shall be determined in such a way as to reflect the costs incurred by users, in particular in order to avoid cross-subsidisation between categories of users or between users within those categories;
- the level of the authorised income for infrastructure operators, which must cover all the costs incurred by those infrastructure operators to the extent that these costs correspond to those of an efficient network operator. Revenue generated by the payment of tariff terms or components shall cover that authorised income;
- a multiannual regulatory framework incorporating incentive mechanisms to encourage infrastructure operators to improve their performance, in particular with regard to quality of service and supply, to promote integration of the European internal market and security of supply and to seek productivity efforts;

The following tariffs are currently in force: TURPE 5 HTB (RTE), TURPE 5bis HTA-BT (Enedis), ATRT 6 (GRTgaz and Teréga), ATTM 5 (Elengy and Fosmax LNG), ATS 1 (Storengy, Teréga and Géométhane) as well as ATRD 5 (GRDF and local distribution companies (Entreprises Locales de Distribution - ELD) for gas).

GRDF ATS 1 and ATRD 5 tariffs are in force until 2020. Due to the implementation of Regulation (EU) 2017 / 460 establishing a network code on the harmonisation of tariff structures for the transmission of gases (hereinafter "tariff network code"), the ATRT 6 tariff is to be revised and the CRE therefore intends the implementation of ATRT 7 in 2020. Preparations for these new gas network and infrastructure tariffs will be carried out by the CRE throughout 2019 for implementation in 2020.

The HTB and HTA-BT TURPE and the ATTM tariff are planned to apply from 2021 and the associated tariff work will be carried out by the CRE in 2020.

ELD ATRD5 tariffs will apply until 2022 and the associated tariff work will be conducted by the CRE in 2021.

With regard to the regulatory framework, the CRE wishes to conduct a cross-business reflection for all network operators, with the general objectives being similar for all regulated operators.

The CRE considers that the regulatory framework must be predictable and stable, while at the same time promoting the necessary adaptation to the evolution of the energy system. In particular, the regulatory framework must promote the use of innovative solutions to meet the needs of tomorrow's energy networks and infrastructure and ensure that infrastructure operators facilitate the implementation of the energy transition by all actors in the energy system.

The main objective of the multiannual tariff regulation framework is to:

**1- Control over time the evolution of network costs, which represent a significant part of the final consumer's invoice**

With regard to operating expenses, the tariff framework must allow to incite operators to achieve efficiency gains on the one hand and ensure that consumers benefit from them over time on the other hand. Thus, the current framework provides that infrastructure operators shall retain all productivity gains or losses that could be realised over a tariff period in relation to the trajectories defined ex ante by the CRE. It should then be ensured that the level of efficiency achieved is taken into account in establishing the following tariffs.

With regard to investments, which are a decisive factor in balancing the quality of service provided by infrastructure with its cost, the regulatory framework, whose role is to match as much as possible the interests of operators with those of the community, must encourage network operators to prioritise and carry out the investments most useful to the community under the best cost conditions. This objective is particularly important, in view of the outlook for changes in consumption, in order to ensure the sustainability and acceptability of investment expenditure and to avoid the risk of stranded costs resulting from unnecessary investment. Controlling the investments of regulated infrastructure operators is therefore a crucial tariff issue, all the more so given that operators' investment decisions have long-term tariff implications because of the lifetime of the assets.

**2- Enabling infrastructure operators to finance long-term investments in networks**

The tariff regulatory framework must cover the costs of an efficient operator and allow reasonable remuneration for the capital invested to finance regulated assets, while giving a fair signal for the investment. In this respect, the operator's level of remuneration must, on the one hand, enable him to finance interest expenses on his debt and, on the other hand, provide him with a return on own funds consistent with the level of risk associated with comparable assets. Each tariff provides for a remuneration rate applying to a regulated asset base (Base d'Actifs Régulés - BAR) aggregating the value of all assets operated by the same operator<sup>1</sup>.

**3- Achieve and maintain a high level of service and supply**

The quality of service to network users, which includes continuity of supply, is a major objective of the tariff regulatory framework. Incentive regulation on quality of service, an integral part of the regulatory framework, ensures that cost control does not come at the expense of services provided by these networks. Relevance and usefulness of incentives must be regularly questioned to ensure that they are in line with user needs.

The purpose of this public consultation is to present to market participants the preliminary reflections of the CRE on the tariff framework and to collect their contributions on this subject.

Paris, February 14th, 2019.  
For the Energy Regulatory Commission,  
The President,

Jean-François CARENCO

<sup>1</sup> With the exception of the HTA-BT TURPE, which provides for special arrangements for Enedis in view of the specific structure of its liabilities. This particular issue will be addressed in the preparatory work for TURPE 6.

### **Reply to the consultation**

The CRE shall invite interested parties to send their contribution by March 31st, 2019 at the latest:

- by e-mail to: [dr.cp3@cre.fr](mailto:dr.cp3@cre.fr) ;
- by contributing directly in the CRE website ([www.cre.fr](http://www.cre.fr)) under the heading "Public Consultations";
- by post: 15, rue Pasquier - F-75379 Paris Cedex 08 ;
- by asking to be heard by the CRE.

For the sake of transparency, contributions will be published by CRE.

**Should your contribution contain elements for which you wish to preserve confidentiality, a version hiding these elements shall also be submitted.** In this case, only this version will be published. The CRE reserves the right to publish elements that may be essential to the information of all actors, provided that they do not fall within the scope of the secrets protected by law.

**In the absence of an obscured version, the full version shall be published,** subject to information falling within the scope of the secrets protected by law.

Interested parties are invited to respond to questions with reasoned answers.

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## 1. BACKGROUND OF THE PUBLIC CONSULTATION

### 1.1 Reminder of the CRE's competences and of the principles of the regulatory framework

The competences of the CRE to determine the methods used to establish the tariffs for the use of electricity and gas infrastructures (transmission networks, distribution networks, underground natural gas storage facilities and liquefied natural gas facilities) are detailed in Articles L.452-1 to L.452-3 of the Energy Code for Gas Infrastructure and in Article L. 341-3 of the same Code for Electrical Networks.

Pursuant to those Articles, the CRE may, in particular, provide for *"a multiannual framework for price developments and appropriate short-term or long-term incentives to encourage operators to improve their performance related, inter alia, to the quality of service rendered, the integration of the internal gas market, security of supply and the search for productivity efforts"*.

For gas such as for electricity, Articles L.341-3 and L.452-3 of the Energy Code stipulate that the CRE *"shall, in a manner which it determines, consult the actors in the energy market"*.

### 1.2 Presentation of the different regulated operators in France

The distribution of gas and electricity is carried out by many network operators of variable size (approximately 150 electricity grid operators and 26 gas distribution network operators). However, about 95% of the French market is covered by Enedis for electricity and GRDF for gas.

Enedis, 100% owned by EDF, operates, maintains and develops an average and low voltage electricity distribution network of approximately 1.4 million km. Enedis delivers approximately 400 TWh of electricity per year to nearly 36 million consumers and about 400,000 producers. It earned EUR 14,083 million in 2017, with 39,000 employees.

GRDF, wholly owned by Engie, operates, maintains and develops an average and low pressure natural gas distribution network of approximately 200,000 km. GRDF delivers approximately 300 TWh of natural gas per year to nearly 11 million consumers. It earned EUR 3,562 million in 2017, with 12,000 employees.

Regarding transmission, RTE is the only electricity network operator. GRTgaz and Teréga are natural gas network operators.

RTE, 50% owned by EDF, 30% by the Caisse des Dépôts et Consignations and 20% by CNP Assurances, operates, maintains and develops a high-voltage electricity transmission network over 100,000 km which extends throughout metropolitan France. RTE delivers approximately 520 TWh of electricity per year. It earned EUR 4,648 million in 2017, with 9,000 employees.

GRTgaz, owned 75 % by Engie and 25 % by the Société d'Infrastructures Gazières (SIG), a public consortium composed of CNP Assurances, CDC Infrastructure and the Caisse des Dépôts, operates, maintains and develops a high-pressure gas transmission network of more than 32,000 km covering a large part of the metropolitan territory with the exception of the southwest. GRTgaz delivers approximately 620 TWh of gas per year. It earned EUR 1,972 million in 2017, with 3,000 employees.

Teréga (formerly TIGF), owned by a consortium composed of Snam (40.5%), GIC (31.5%), EDF Investissement (18%) and Prédica (10%), operates, maintains and develops a high-pressure gas transmission network of over 5,000 km in southwestern France. Teréga delivers approximately 130 TWh of gas per year. It is also an infrastructure operator of the Lussagnet Natural Gas Storage Grouping for a useful volume of 33.1 TWh and maintains separate accounts for its two activities. Teréga achieved a total turnover of EUR 471 million in 2017, including EUR 294 million in the transmission business, with a total staff of nearly 600 employees. In 2018, its authorised revenue for the storage business was EUR 153 million<sup>2</sup>.

Underground storage of French natural gas is also held by two other operators: Storengy and Géomthane.

Storengy, a wholly owned subsidiary of Engie, owns and operates a pool of 12 sites in France (3 of them in reduced operation), for a useful volume of 102.1 TWh. Storengy has nearly 1,000 employees. In 2018, its authorised income was EUR 523 million.

Géomthane, owned by Storengy (50%), CNP (49%) and Géostock (1%), holds the Manosque storage site, with a useful volume of 3.3 TWh. This site is operated by Storengy. Geomthane employs approximately 50 employees. In 2018, its authorised income was EUR 38 million<sup>1</sup>.

Finally, French regulated methane terminals are operated by Elengy and Fosmax LNG.

<sup>2</sup>Storage operators were not regulated in 2017.

Elengy, a wholly owned subsidiary of GRTgaz, owns and operates the Montoir-de-Bretagne and Fos Tonkin terminals. The Montoir terminal, which entered into service in 1980, has a regasification capacity of 10 billion m<sup>3</sup> per year. The Fos Tonkin terminal, which entered into service in 1972, has a regasification capacity of 3 billion m<sup>3</sup> per year. Elengy achieved a turnover of EUR 145 million in 2017 for the regulated regasification activity, with 370 employees.

Fosmax LNG, a 72.5% subsidiary of Elengy and 27.5% subsidiary of Total Gaz Electricité Holding France (TGEHF), owns the Fos Cavaou terminal. Fosmax LNG markets terminal regasification capabilities. Its operation and maintenance are entrusted to Elengy. The Fos Cavaou terminal, which entered into service on April 1st, 2010, has a regasification capacity of 8.25 billion m<sup>3</sup> per year. Fosmax LNG generated a turnover of EUR 137 million for the regulated regasification activity in 2017.

### **1.3 The regulatory framework must cover the costs of infrastructure operators over time**

Tariff regulation of gas and electricity transmission and distribution infrastructures is based on a principle of covering the costs of operators operating these infrastructures. Both for gas and electricity, the energy code provides that *"the tariffs for the use of the public transmission network and public distribution networks shall be calculated in a transparent and non-discriminatory manner, in order to cover all the costs incurred by the operators of those networks to the extent that those costs correspond to those of an efficient network operator"*.<sup>3</sup>

In accordance with the applicable provisions, the CRE shall determine, for each tariff period and per operator, an authorised income, which shall cover:

- on the one hand, operating expenses (gross operating expenses from which are deducted operating income such as capitalized production, non-tariff products, etc.);
- on the other hand, the capital expenses borne by the operator in the exercise of its regulated activity (remuneration of fixed capital and depreciation of operators' assets).

These expenses shall be covered as long as they correspond to those of an efficient operator. Thus, it is up to the CRE to assess the operator's efficiency in determining whether these expenses can be covered by the infrastructure use expenses.

As far as capital expenses are concerned, the regulated asset base (Base d'Actifs Régulés - BAR) of each operator, which brings together all the assets put into service by operators for the exercise of their regulated activities, constitutes the basis for the calculation. BARs are remunerated at rates that are set at normal levels on the basis of macroeconomic and financial parameters and taking into account the level of risk of companies with a comparable activity.

The level of remuneration of the capital invested depends directly on the short- and long-term financial risk borne by the network operator. This remuneration thus depends on the risk-sharing between the network operator and the network user: the more the operator's risks are covered by the regulations and the tariff regulatory framework, the less its remuneration must be high and vice versa.

### **1.4 The regulatory framework must encourage infrastructure operators to control costs while maintaining a high level of quality of service**

The tariff regulation framework applied to the use of gas and electricity transmission and distribution networks must encourage operators to improve their economic efficiency, i.e. to control the costs incurred in carrying out their activity. It is necessary to ensure that these efficiency gains are not achieved to the detriment of the quality of service provided to network users.

The CRE has therefore established a regulatory framework based on two balanced objectives:

- a set of cost control incentives aiming in particular at encouraging the reduction of operating expenses over time by defining trajectories over the period covered by the tariff: this scheme is complemented by incentives to control the costs of investment in infrastructure without encouraging their reduction in volume;
- incentives to maintain and improve the quality of service provided to the consumer: the CRE has thus defined indicators for monitoring the performance of operators in several areas considered relevant for assessing the quality of services provided (quality of supply, interventions with end customers, relations with suppliers, relations with users, connections to the network, metering and invoicing, measures and forecasts of consumption, environment, etc.). These indicators are accompanied, for those that are most

<sup>3</sup> Article L 341-2 of the Energy Code relating to the transmission and distribution of electricity. In the gas sector, Article L 452-1 of the same Code also specifies that the rates for the use of infrastructure *"shall be established in a transparent and non-discriminatory manner in order to cover all the costs incurred by those operators, in so far as those costs correspond to those of an efficient network or facilities operator"*.

important for the functioning of the market, by financial incentives, bonuses or malus depending on the performance achieved. This mechanism evolves regularly, in order to best meet the expectations of market participants;

While the regulatory framework has evolved gradually since the opening up of markets, economic efficiency and quality of service remain the two fundamental pillars of incentive regulation.

### **1.5 The regulatory framework must be predictable and stable, but must also adapt to the evolution of the energy system**

In the interests of all players in the energy market, the regulatory framework for regulated gas and electricity infrastructure must be predictable and stable, both to give visibility to network users and to preserve an environment conducive to medium- and long-term decisions for regulated operators. The current four-year duration of the regulatory framework allows operators to take actions to improve their performance.

However, the regulatory framework must also evolve in order to monitor changes in the energy sector and ensure a constant alignment with the activities of the network operators. This is particularly important in the current period when the energy system is in a major transformation phase.

## **2. ASSESMENT OF THE CURRENT TARIFF REGULATORY FRAMEWORK AND NEW CHALLENGES IN THE COMING PERIOD**

### **2.1 The current tariff framework works well overall, allowing cost control over time and an improvement in the quality of service and supply**

For more than 10 years, the tariff framework has pursued three main objectives:

- encourage infrastructure operators to control the evolution of network costs in order to limit the impact of tariffs on the final consumer;
- enable infrastructure operators to finance investments in networks;
- aim for a high level of service and supply quality.

To this end, it is based on the implementation of regulatory mechanisms, aimed at encouraging network operators to seek efficiency over time. Consequently, from 2008 and 2009, a tariff period of 4 years and the principle of financial incentives on costs and quality of service were introduced. The current regulatory framework also leaves ample room for the management of each of the network companies, allowing each to look for performance improvements where they consider it relevant.

Overview over time on this tariff framework allows to carry out an assessment. A detailed assessment is provided in the appendix to this public consultation. The data used for this assessment will be published on the CRE's open data site.

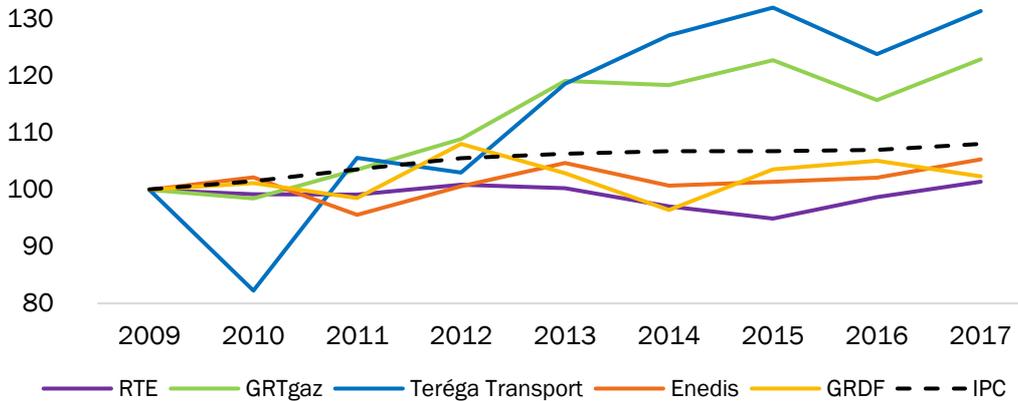
#### **2.1.1 Monitor the evolution of network costs to limit the impact of tariffs on the final consumer**

##### **Net operating expenses**

The regulatory framework provides for a trajectory of operating expenses over the 4-year tariff period. Operators are thus encouraged to improve their efficiency over the period. The CRE shall ensure that the level of efficiency revealed during the tariff period is taken into account in setting the following tariffs, so that network users benefit from productivity gains over time. For this purpose, the trajectories of operating expenses, set for a new tariff period, must be based on the levels of expenditure incurred by operators over the previous period.

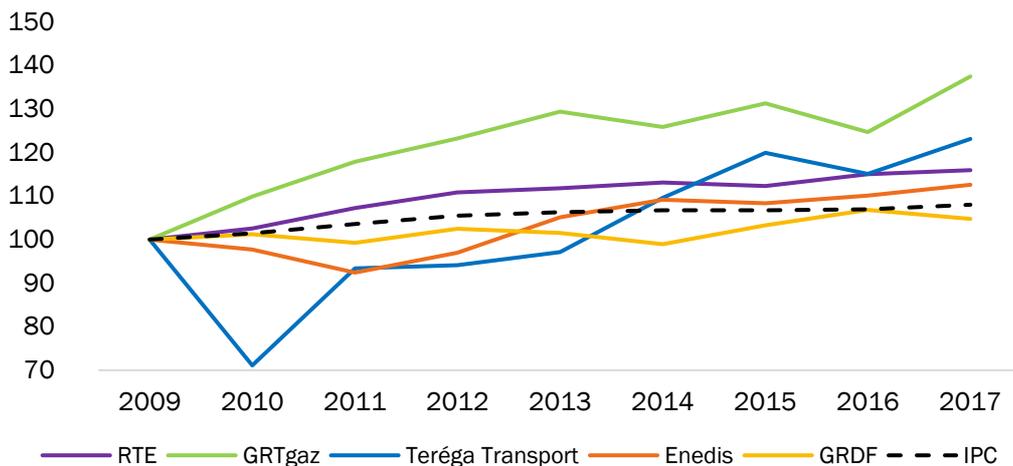
The figure below shows the evolution of the total net operating expenses (Charges Nettes d'Exploitation - CNE) (incentivised, partially incentivised and not incentivised) of gas and electricity transmission and distribution operators carried out over the period 2009-2017:

Evolution of realised CNE  
base 100 in 2009



In order to assess the evolution of operating expenses, it is relevant to exclude energy expenses, losses, reserve constitution expenses, congestion costs and, for Enedis, expenses for access to the transmission network.

Evolution realised CNE - not counting energy  
base 100 in 2009



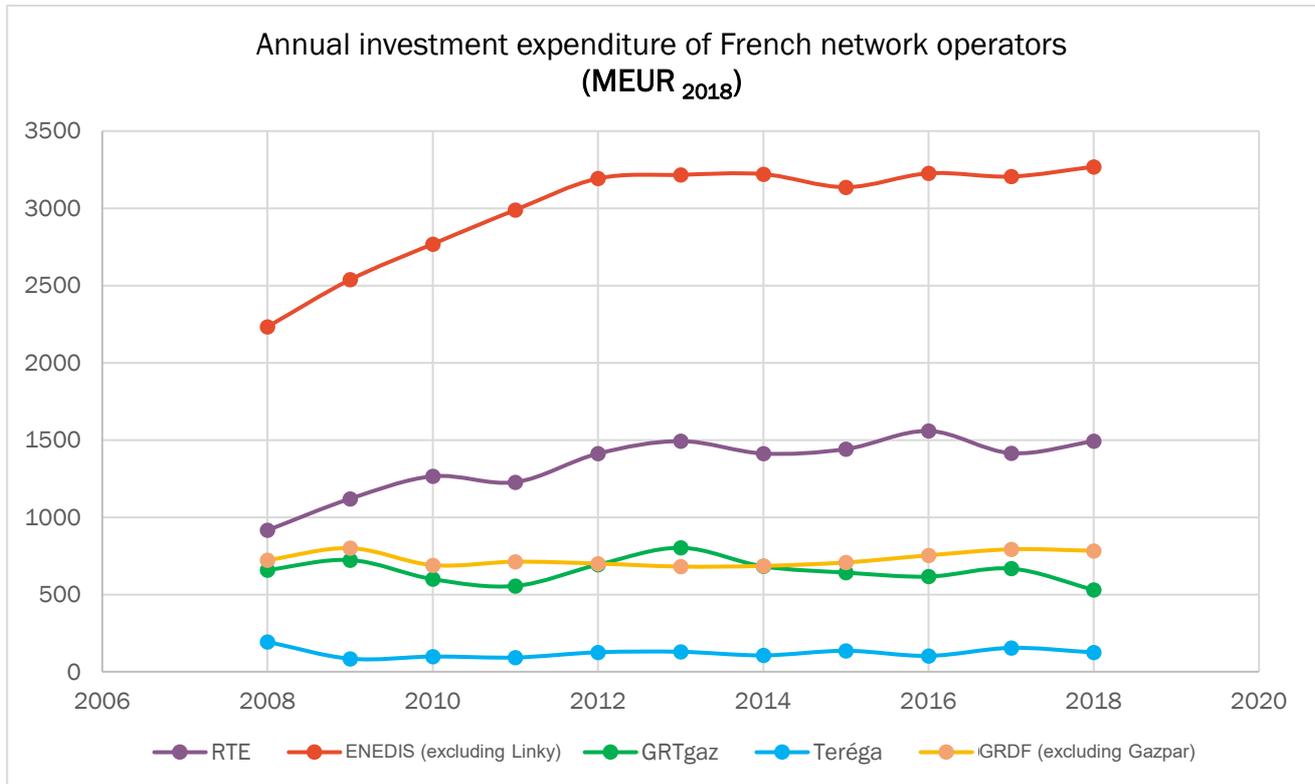
Over the last ten years, the level of net operating expenses of operators has been contained for distribution network operators (Gestionnaires de Réseaux de Distribution - GRD). In a context in which the number of customers is increasing for electricity (+3 million consumers and +400,000 producers since 2008 for Enedis), where distribution networks are developing to enable, inter alia, the linking of renewable energy production, where regulatory and safety requirements are strengthened and where new processes and information systems have been implemented for the opening up of markets, the evolution for the operating expenses of these operators (+0.3% for GRDF and +0.6% for Enedis on average per annum, +0.5% and +1.3% on average per annum for operating expenses) has been close to inflation (+0.9% on average per annum).

For transmission network operators (Gestionnaires de Réseaux de Transport - GRT), the change in net operating expenses is higher than inflation over the period (+ 0.2% for TEN, + 2.3% for GRTgaz and + 3.1% for Teréga transmission on average per year, respectively +1.7%, +3.8% and +2.3% on average per year for operating expenses). This development must be seen in the light of the major challenges faced by these operators, (in particular full separation of parent companies, development of the network particularly for gas transmission, development of interconnections, and implementation of European packages).

The CRE considers at this stage that the incentive regulation put in place on operating expenses leads in the long term to good control of operators' operating expenses.

**Investments and capital expenses**

The graph below shows the development of investment by regulated operators since 2008. The latter are up sharply in terms of electricity, in a context marked, on the one hand, by a need for renewal of the networks (burial, changes in regulatory constraints, particularly following the 1999 storm, etc.), and on the other hand, by their development in order to adapt them to the needs of the energy transition. With regard to natural gas networks, investments are stable in terms of distribution (excluding Gazpar communicating meter projects) and stable at a high level concerning transmission, in particular because of the investments made necessary by the zone merger completed in 2018 in France. .

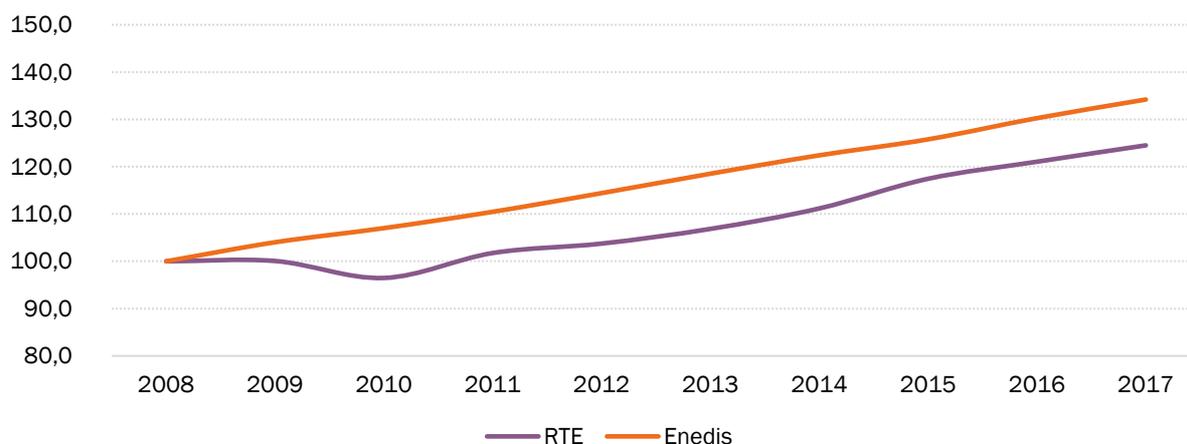


Whatever the operator, within the current framework, the investments made are integrated into the regulated asset base (Base d'Actifs Régulés - BAR) following their commissioning.

The regulated asset bases (BAR) - which correspond to the aggregate value of the investments made by the operators not yet amortized - of the main French operators of regulated electricity and gas infrastructures have therefore experienced significant developments over the last 10 years.

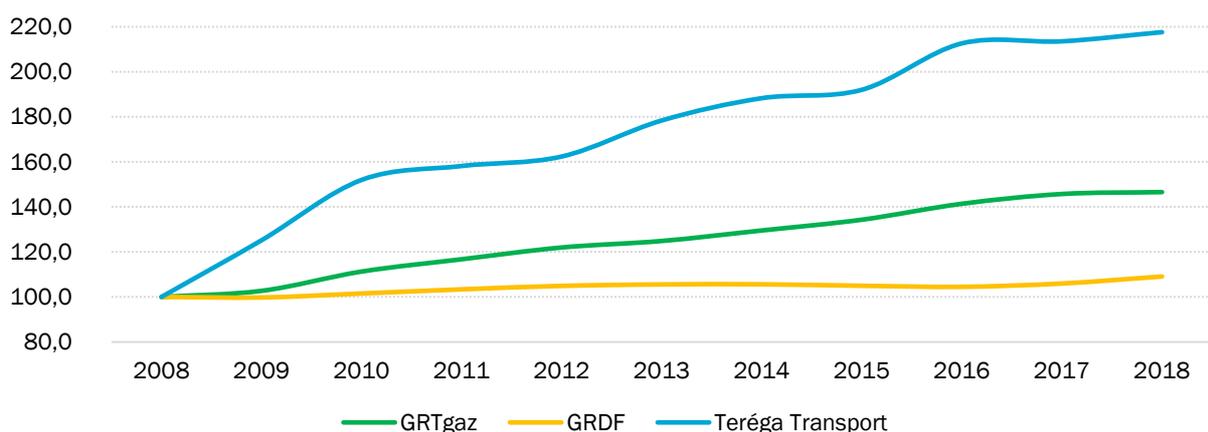
With regard to electricity networks, the BAR for Enedis and RTE increased by almost 34% and 25% respectively between 2008 and 2017.

### Evolution of BAR for electricity operators base 100 in 2008



With regard to gas infrastructure, the BAR for GRDF has made little progress over the last decade (+ 6 %), while those for the two GRT have increased significantly: the BAR for GRTgaz grew by almost 46% and that for Teréga transmission more than doubled over the same period (+ 114 %).

### Evolution of BAR for gas operators base 100 en 2008



On January 1st, 2018, the estimated sum of BARs for electricity system operators in metropolitan France (excluding electric ELDs) was EUR 65 billion. That of operators of the gas system in metropolitan France (including operators of regulated LNG terminals and regulated gas storage operators and excluding gas ELDs) amounts to 30 billion euros.

Investment decisions are a decisive factor in balancing the quality of service provided by infrastructure with its cost. Under the current tariff framework, operators are not encouraged to reduce the volume of their investments, and capital expenses are then covered on the basis of realisation<sup>4</sup>.

The tariff regulatory framework, whose role is to align the interests of operators as closely as possible with those of the community, must encourage network operators to prioritise and carry out the investments most useful to the community under the best possible cost conditions. Therefore, in addition to its work under its competence to approve transmission investments, the CRE has gradually introduced various incentive mechanisms for investment:

- an incentive on unit costs in distribution;
- an incentive on the costs of the largest transmission projects;
- specific incentive regulation for advanced counting projects;

<sup>4</sup>Except for capital expenses relating to off-grid assets (real estate, vehicles, information systems) whose differences between the tariff trajectory and realised are excluded from the account for the adjustment of expenses and income (CRCP), from the ATRD 5 tariff, within the same tariff period.

- specific regulation for "off-grid" investments.

The relatively recent introduction of these mechanisms does not allow for their full assessment.

In summary, the CRE considers that the current regulatory framework has enabled regulated operators to make all the investments necessary to carry out their missions.

Investment decisions have long-term tariff implications. The CRE considers that the issue of their control is a priority for the next tariff period, in view of the changing consumption environment, in order to ensure the sustainability and acceptability of tariffs and to avoid the risk of stranded costs arising from unnecessary investment.

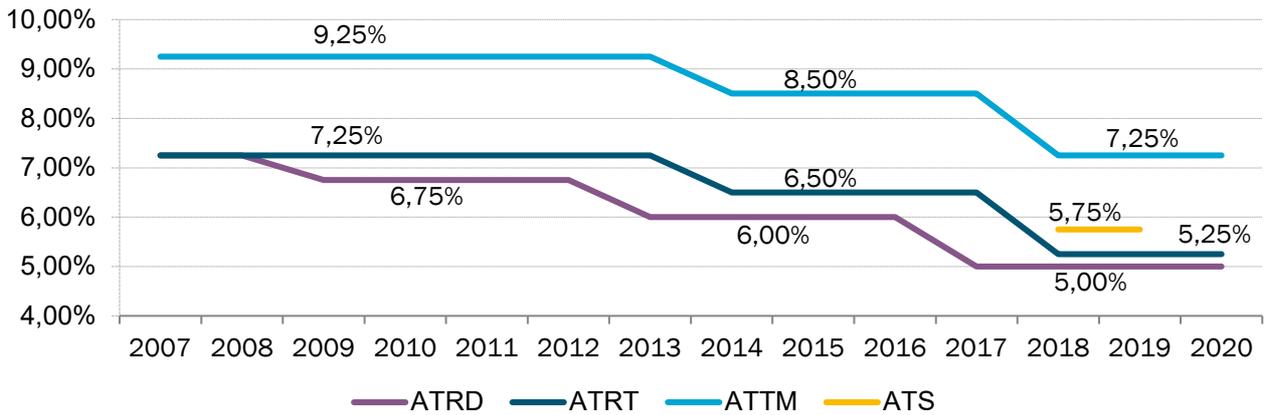
**2.1.2 Enable infrastructure operators to finance investments in networks**

The tariff regulatory framework must ensure a reasonable remuneration for the invested capital that allows both the financing of regulated assets and a fair signal to investment. In this respect, the operator's level of remuneration must, on the one hand, enable him to finance interest expenses on his debt and, on the other hand, provide him with a return on own funds consistent with the level of risk associated with comparable assets.

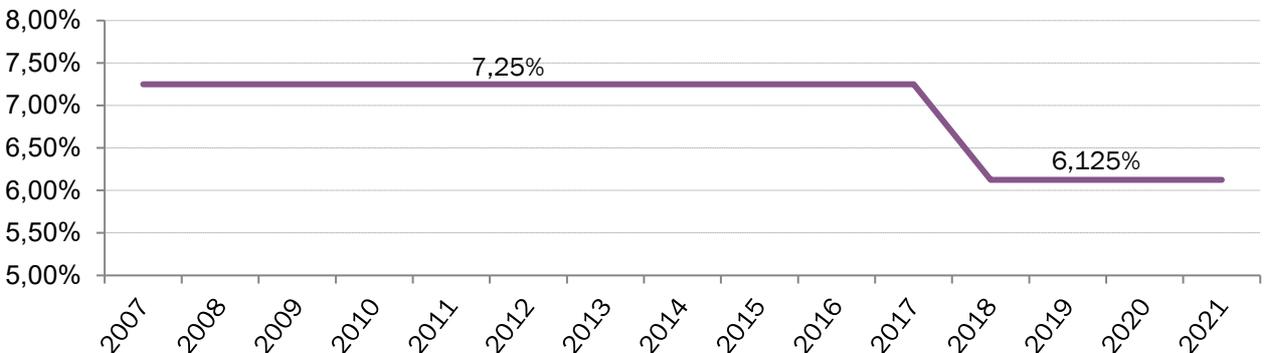
The CRE shall set a remuneration rate, or weighted average cost of capital (WACC), applying to the BAR aggregating the value of all assets operated by the same operator. It shall be set for the entire tariff period and calculated on the basis of calculation parameters derived from long-term data. In particular, the risk-free rate is calculated on the basis of long-term averages of long maturities, consistent with the long-term assets comprising the BAR.

The graphs below compare the evolution of the WACC of the different gas and electricity infrastructures with the evolution of the rates recorded on the markets. Enedis is not included in these graphs because of its particular remuneration structure.

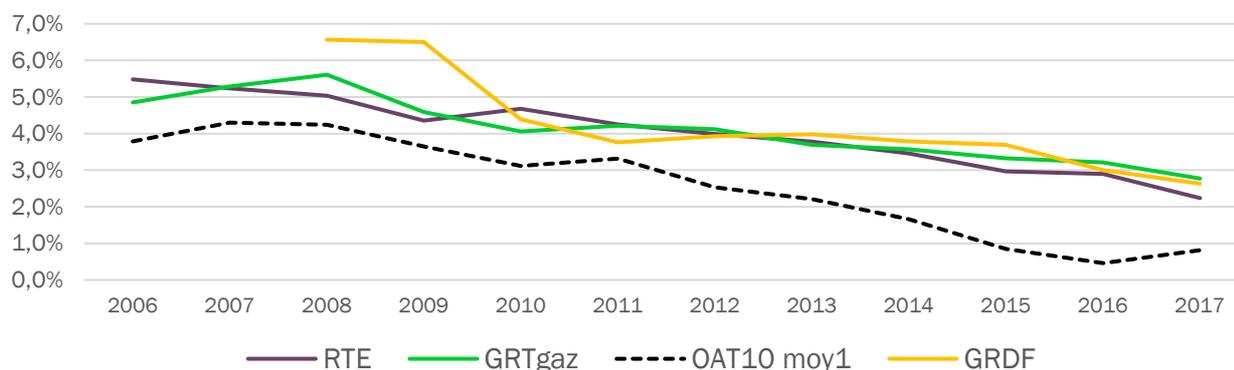
**Base CMPC - gas tariffs**  
(real, before taxes)



**Base CMPC - TURPE HTB**  
(nominal, before taxes)



### Evolution cost of the effective debt of the operators and of the 10 years OAT - 1 year average rolling.



The use of long-term averages in setting the remuneration rates of regulated infrastructure operators appears to be adapted to these activities, which are characterised by long-term investments. However, it raises the question of the signal sent to investment. Indeed, these long-term averages may differ significantly from the rates observed on the market at the time operators can finance themselves.

#### 2.1.3 Aim for a high level quality of service and supply

Quality of service, including continuity of supply, is a major concern for network users. Incentive regulation on quality of service is one of the pillars of the regulatory framework defined by the CRE, as it ensures that economic efficiency is not achieved at the expense of the services provided by these networks.

Improving incentives for quality of service and supply is a continuous process. The relevance and usefulness of incentives must be regularly questioned in order to ensure that they are in line with the needs of network users.

Overall, the quality of service of GRDs and GRTs for electricity and natural gas has improved over time.

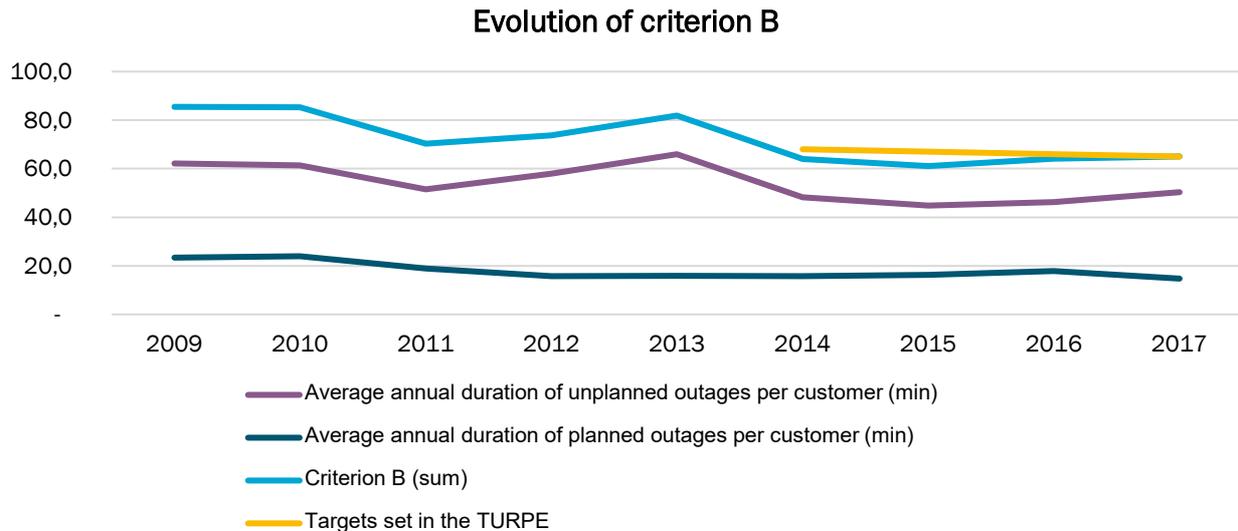
As an illustration, the outage frequency on the RTE network has improved by almost 40% over the period 2008-2017. The introduction of a financial incentive in 2013 for the TURPE 4 HTB tariff period reinforced this momentum.

**Table1 - Change in outage frequencies for RTE**

Outage Frequency (OF)	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
OF except exceptional events	0.593	0.511	0.378	0.483	0.400	0.533	0.455	0.387	0.382	0.355
OF exceptional events	0.025	0.071	0.030	-	0.039	0.010	0.001	-	0.002	0.011
Total OF	0.618	0.582	0.408	0.483	0.439	0.543	0.456	0.387	0.384	0.366
Targets	N/A	N/A	N/A	N/A	N/A	0.600	0.600	0.600	0.600	0.460

As a reminder, the average outage frequency of year N on the HTB transmission network is defined as the ratio of the number of long and short outages over year N by the number of customers connected on December 31st of year N.

For the distribution of electricity, criterion B, which corresponds to the annual average outage times in the territory served by Enedis and is incentivised since TURPE 3, is undergoing a trend improvement.



Despite this strong overall performance by operators on service and supply quality indicators, feedback from some actors shows that some services are subject to recurring complaints. In particular, the question of connection delays is regularly highlighted. This mismatch calls for a regular questioning on the relevance of the indicators monitored, both in terms of the themes followed, the construction of indicators and the strength of incentives.

## 2.2 The challenges facing energy systems require continuous reflection on improving the regulatory framework

### 2.2.1 The energy transition affects the management of energy systems and implies greater vigilance over future costs

The energy transition, with the birth of electric and gas renewable energies (énergies renouvelables - EnR) and the development of new uses of these energies, particularly on electricity networks, forces all actors in the electricity and gas systems, operators but also regulators, to think differently.

Network operators, one of whose priority tasks is to support the development of these new uses and means of production and ensure their proper integration into energy systems, must be able to reconcile two contradictory trends:

- a strong trend towards stabilising (in electricity) and decreasing (gas) consumption, driven in particular by actions to control energy demand (Maîtrise de la Demande d'Énergie - MDE);
- an increase in costs to enable, in particular, the integration of the EnRs into the networks and the deployment of recharging infrastructures for electric vehicles.

As far as electricity is concerned, for instance, the development of EnRs and self-consumption is changing the electrical system from a highly centralized architecture to decentralised operation. Electricity flows are thus modified, forcing network operators to rethink their network dimensioning methods. Indeed, the current network has been dimensioned mainly according to the extraction flows during winter peak consumption periods. In the long run, however, decentralised injections could lead to consolidation needs, should they take place in low-consumption areas where the network is unable to accommodate this injection volume.

In the same way, electricity networks will need to allow the charging terminals for electric vehicles to be inserted. Although the electrical system as a whole, according to the analyses of the network operators, can respond without difficulty to the energy demand generated by the massive development of this electrical mobility, its impact on the peak, and the significant power calls that this new use could generate must be given special attention.

As far as gas is concerned, the development of biomethane production sites injecting into the networks will generate significant investments in both distribution and transmission networks in order to achieve the objectives of the Pluriaannual Energy Programme (Programmation Pluriannuelle de l'Énergie - PPE).

In order to control future price developments, in a context of reduced consumption, the regulatory framework must adapt in order to encourage network operators to control future investments and limit the risks of stranded costs, particularly in gas.

## 2.2.2 Innovation must be placed at the heart of the regulatory framework

Innovation and the new opportunities offered by the digital revolution are a lever to optimise the costs associated with the network transformations imposed by the energy transition. The regulatory framework should promote the use of these innovative solutions if they reduce the total costs for the community and/or the risks of over-investment or even stranded costs. As regards the activities of the network operators, two issues are particularly relevant:

- on the one hand, the incentive regulation for research and development and innovation (R&D&I): the regulatory framework must allow operators to carry out research and development operations in order to test, before the industrialisation phase, the relevance of innovative technical or organisational solutions. The incentive regulation of R&D&I must be adapted to the whole innovation process, from the emergence of the innovative project to its demonstration phase. In the event that the demonstration phase is successful, the regulatory framework must also allow a logical transition to an effective deployment of the developed solution;
- on the other hand, the OPEX / CAPEX arbitrations: in order to promote innovation in adapting the energy system to the energy transition, the investment regulatory framework must be favourable to the adoption of innovative solutions, whatever their nature. For example, it should be ensured that regulated operators are not structurally encouraged to promote investments in the network based on innovative technical or organisational solutions, but which would be generating additional operating expenses.

Beyond the very activities of the network operators, because of their central role in the electricity and gas systems they must also be the facilitators of innovation for their infrastructure users. The digitalisation of the energy sector, including the development of advanced meters and the data they generate, and the emergence of new uses, are changing and increasing the possibilities in this area and raise the question of strengthening the requirements imposed on operators on these issues.

By way of illustration, the availability of data is an opportunity for actors in the energy sector to offer innovative products and offers, promoting changes in consumption behaviour or the development of new uses (limitation of the energy consumption, *demand*-response or renewable mobility). It is therefore necessary to ensure that the regulatory framework is conducive, not only to the internal innovation of operators, but also to that of other actors in the sector, in particular through the provision of high-quality data.

The incentive regulation of the quality of service provided by operators to users of energy networks and infrastructure must therefore evolve. It must encourage operators to adopt behaviours and operating methods that promote innovation externally, among other actors in the energy sector. The work carried out by the CRE on the topics of self-consumption and electric vehicles has already identified areas for improvement for network operators.

## 2.2.3 The objective of creating the European internal market must be taken into account

By the end of May 2018, the Commission had adopted a total of 13 network codes and guidelines, eight for electricity and five for gas. These texts complement Regulations (EC) No 714 / 2009 and (EC) No 715 / 2009 and cover all the technical aspects necessary for the implementation of a European energy market whose principle, common to electricity and gas, is to grant a central role to wholesale markets and interconnections. Wholesale markets define prices that allow cross-border flows to be organised from areas where prices are low to those where they are higher.

The existence of sufficient cross-border trading capacities is one of the conditions for the emergence of an integrated European market. For electricity, interconnections allow optimization of electricity system resources in a context of strong expansion of electricity generation from intermittent energy sources and contribute to the enhancement of security of supply. For gas, they can deliver gas at most competitive price to final consumers and enhance security of supply by diversifying sources of supply.

Article L. 341-3, I. 452-3 in gas, respectively, of the Energy Code gives the CRE the opportunity to put in place "*appropriate incentives, both in short and long term, to encourage transmission and distribution network operators [...] to promote the integration of the internal market [...]*".

In this way, the CRE particularly supports the development of interconnection projects, while ensuring that they benefit to the community and are carried out effectively. It has put in place ad hoc incentive mechanisms in accordance with the provisions of the Energy Code. New interconnections, like all investment projects of GRTs, must be included in their Business Plan (Schéma de Développement du Réseau - SDDR), published annually. In both gas and electricity, and in a similar way to what is happening at the European level, the French GRTs define these plans according to the scenarios of electricity consumption and production that they have previously designed. The CRE shall accompany the GRTs in carrying out the interconnection projects and pay particular attention to the

control of costs and of schedule: the regulatory mechanisms for gas and electricity interconnection projects aim to encourage GRTs to carry out the projects most useful to the community and to control investment costs.

### **2.3 Summary**

The CRE is at this stage taking a positive view of the tariff regulatory framework that has been in place for 10 years. It has enabled:

- to control price developments over time, in particular with regard to operating expenses;
- to make the necessary investments;
- to improve service quality.

The CRE therefore intends to maintain the main principles for the next generation of tariffs, including: a tariff period of 4 years, an incentive trajectory for operating expenses, a coverage of capital expenses on the basis of realisation accompanied by incentive regulatory mechanisms on investment costs, and the monitoring and financial incentive of quality of service indicators.

Nevertheless, in view of the challenges ahead in terms of energy transition, changes in consumption and the need to preserve the sustainability of tariffs, the CRE is currently considering changing the tariff framework to meet the following key challenges:

- the control of investments, which involves both sending an appropriate remuneration signal for new investments (see section 3.4.3) and maintaining or even strengthening the incentives to control the costs of these investments (see section 3.4.4);
- encouraging network operators to innovate, not only through their R&D&I programmes (see Section 3.5) but also by ensuring that the tariff framework makes it possible to implement innovative solutions, including when they generate additional operating expenses in return for smaller investments;
- the pursuit of ambitious service quality objectives, with associated objectives having to adapt to the new needs of the players in the energy system, in order to enable all of them to innovate (see parts 3.5.4 and 3.6).

Question 1: Do you share the overall positive assessment of the tariff framework implemented by the CRE over the last 10 years?

Question 2: Do you share the major issues identified by the CRE for the next generation of tariffs?

### 3. REFLECTIONS AND PROPOSALS FOR CHANGES IN REGULATORY FRAMEWORKS APPLIED TO INFRASTRUCTURE OPERATORS IN FRANCE

#### 3.1 Presentation of the CRE approach

Through this public consultation, the CRE aims to take stock of the regulatory frameworks in force, to identify the changes in the regulatory frameworks applied to infrastructure operators in France to improve them and make them converge while remaining adapted to their respective specificities.

It is the result of a transverse reflection project on the tariff framework applicable to the different regulated operators launched by the CRE in 2018. This work, together with consultation with regulated operators, aims to prepare for the new generation of tariffs to enter into force from 2020 and 2021.

As part of this work on the tariff framework, the CRE has undertaken to ask operators to obtain their assessment of the regulatory framework and their possible requests for developments for the future tariff period. All regulated operators submitted proposals to the CRE in October 2018.

In order to complement and inform this work, the CRE has also carried out internal feedback work and comparisons between the different tariffs on the one hand and with other European regulatory frameworks on the other. The development paths identified by the CRE during this project are presented in this public consultation.

This public consultation shall address the envisaged developments on the principles of the tariff framework common to all future regulated infrastructure tariffs, which will gradually enter into force from 2020:

- Tariff for the use of GRTgaz and Teréga natural gas transmission networks (ATRT7) in 2020;
- Operating price of the public natural gas distribution networks of GRDF (ATRD 6) in 2020;
- Tariff for the use of the underground natural gas storage infrastructure of Storengy, Teréga and Géométhane (ATS 2) in 2020;
- Tariffs for the use of public electricity networks in HTB and HTA-BT stress areas (TURPE6 HTA-BT and HTB) in 2021;
- Tariffs for the use of regulated methane terminals at Elengy and Fosmax LNG (ATTM6.) in 2021;
- Tariffs for using networks of local distribution companies in 2022.

Before it is implemented, there will be a consultation for each tariff on its specific tariff framework.

#### 3.2 Regulation must move towards greater predictability and transparency in the construction and evolution of tariffs

##### 3.2.1 Calendar

Regulation (EU) 2017 / 460 establishing a network code on the harmonisation of tariff structures for the transmission of gas (hereinafter "tariff network code") entered into force for the majority of its provisions on April 6th, 2017, i.e. after the entry into force of tariff ATRT6. It provides for several rules concerning, inter alia, the consultation process (duration of consultation, opinion of the Agency for the Cooperation of Energy Regulators...), the qualification of the transporter's various activities and the methodology for developing the tariff structure. Article 27 of the Tariff network code provides that the national regulator shall consult on the methodology for calculating the reference prices of the tariff in 2019, in order to allow the entry into force of a new tariff, fully in line at the end of the tariff year in force on May 31st, 2019 at the latest: in the case of the GRTgaz and Teréga tariff, this means that the new ATRT7 tariff must enter into force by April 1st, 2020.

Pursuant to the provisions of the Tariff network code, in particular Articles 26, 27 and 28 thereof, the CRE plans to shorten the ATRT6 tariff by one year: instead of applying over the period 2017-2020, it will apply over the period 2017-2019.

The reduction in tariff ATRT6 is also an opportunity to harmonise the entry into force of the gas transmission (ATRT7), distribution (ATRD6) and storage tariffs (ATS2), as is the case for regulated electricity infrastructures. The CRE considers at this stage that such an approach has the advantage of providing the market with better legibility, setting the tariff parameters for the next tariff period for a whole transmission chain. It also improves the consistency between the tariff structure of transmission and distribution tariffs.

The CRE therefore plans to complete work in 2019 on future transmission, distribution and storage tariffs for natural gas for entry into force in 2020. Then, in 2020, it would carry out the work on the development of electricity transmission and distribution tariffs, for their entry into force in 2021. Finally, work would be carried out in 2021 to develop the tariffs of local distribution companies (ELD) for entry into force in 2022.

With regard to the ATTM tariff, and in view of the uncertainties about the future of the Fos Tonkin terminal beyond 2020, on which Elengy will take its decision in 2019, the CRE intends to maintain the forecast duration of the tariff (approximately four years): it will carry out the tariff work in 2020, together with those on tariffs for regulated electricity infrastructures, for entry into force on April 1st, 2021.

### 3.2.2 Tariff period

The duration of the tariff periods for regulated infrastructure is harmonised at approximately four years. The only exception to this principle is the duration of the first ATS1 storage tariff, which was reduced to two years due to the particularly short deadlines for implementing the reform of third-party access to storage, which led the CRE to define a simplified framework. The CRE considers that from the next ATS2 tariff, the duration of the tariff period applicable to storage operators should be harmonised with that of other regulated infrastructures.

The duration of the first tariff periods was shorter: for example, the ATRD2 tariff applied for 2.5 years; ATRT2 and ATRT3 tariffs applied for 2 years; TURPE 1 applied for 3 years and 3 months. Since 2008-2009, the CRE has harmonized the duration of tariff periods to four years: it considered that this period offers the market visibility on the evolution of infrastructure tariffs and gives operators the time needed to undertake productivity efforts.

The CRE also studied the modalities for the construction of the medium-term plans of the various regulated operators. These analyses show that the horizon for these exercises rarely exceeds the four-year horizon. Furthermore, the analysis of the regulatory frameworks of other European countries has not shown that a longer period would be preferable. The English regulator (Ofgem) intends to change from 8 years (RIIO 1 tariff) to 5 years for the next RIIO 2 tariffs.

Accordingly, the CRE intends to maintain the tariff period at 4 years for the next generation of tariffs for the use of regulated infrastructure.

Question 3: Do you agree with the CRE that a tariff period of 4 years is appropriate for all tariffs?

### 3.2.3 Visibility beyond the tariff

The current tariff deliberations set a tariff evolution path over the tariff period, i.e. four years. This path shall be updated annually, in accordance with the update rules defined by each of the tariff deliberations.

As the maturity of the end of the tariff period approaches, the visibility of market participants in tariff developments is reduced: when changing the tariff period, the definitive tariff is known only a few months before its entry into force.

The CRE has for several years pursued the objective of improving market visibility on tariff developments. In particular, the extension of tariff periods allowed the proposed indicative trajectory to be extended to the market. The CRE wishes to consider, in the context of this consultation, the desirability of further enhancing this visibility.

This evolution has several advantages:

- it would enable network users to better anticipate price developments, particularly in the context of the definition of multiannual supply offers;
- it would anticipate and even smooth the consequences of announced tariff shocks on network tariffs (for example, a decrease in subscriptions or commissioning of significant facilities);
- from the point of view of the network operators, it would render their income more visible;
- furthermore, with regard to the ATRT tariff, the CRE stresses that Article 30 of the tariff network code requires it to publish, before the start of the tariff period, *"at least one simplified, regularly updated tariff model, together with an explanation of its use, allowing network users to calculate the applicable transmission tariffs for the current tariff period and to estimate their possible evolution beyond that tariff period"*.

In view of the mandatory nature of this development for gas transmission network operators, the CRE intends to conduct the exercise for the first time on their perimeter before declining it to other infrastructure operators:

- infrastructure operators should communicate annually to the CRE, as part of the annual tariff evolution, the elements for feeding a simplified tariff model over the next 4 years (that is to say, their best view of the investments put into service, operating expenses and consumption / subscriptions over the next four years);

- these elements will have to be reconciled with those used in their medium-term plan, communicated to corporate governance bodies;
- these tariff inducers would be published by the GRTs in an aggregated view and introduced, without adjustment by the CRE, into a simplified tariff model allowing to indicated, with a constant tariff structure, the next 4 annual infrastructure tariff developments.

The data transmitted in this exercise would not be binding on infrastructure operators, it is only intended to improve the level of information provided to market participants. The publication would not have the value of approval by CRE, as the preparation of CRE tariff decisions would remain a separate exercise.

Question 4: Are you in favour of the operators publishing indicative tariff forecasts beyond the current tariff period and over 4 rolling years?

### **3.2.4 Tariff updating process and operation of the expense and income adjustment account (Compte de Régularisation des Charges et Produits - CRCP).**

The regulatory framework aims in particular to encourage operators to improve their performance as they are financially encouraged to reduce their expenses in order to maintain all or part of the differences between the forecast trajectories defined by the CRE and the achieved trajectories.

In view of their duration of application, the CRE shall develop the tariffs for the use of gas and electricity transmission and distribution networks on the basis of short-term and medium-term assumptions on the costs and revenues of the operators of these networks.

However, certain categories of expenses or income are not foreseeable and / or manageable. Should tariffs not being able to be adjusted according to the evolution of these expenses and revenues, network operators would be exposed to more financial risks that could not be controlled in the short term and could also benefit from exogenous factors that could increase their profitability too significantly. It therefore appears appropriate, to some extent, on certain cost items, to compensate network operators for certain deficits via the tariff or to return the surpluses to network users.

To this end, the CRE has established, from TURPE 2 (2005) for electricity, and from the ATRT3 (2007) gas tariff, the account for the regularisation of expenses and income (CRCP), which allows for the compensation, at least in part, for previously identified items, of the differences between the achievements and the forecasts on which the tariffs are based.

The CRCP is also the vehicle used for the payment of financial incentives resulting from the application of incentive regulation mechanisms.

#### **Limitation of the CRCP clearance rate**

According to the operator concerned, the current CRCP clearance procedures may differ:

- as regards the HTB TURPE, the HTA-BT TURPE, the ATS and ATRD tariffs, the CRCP balance is cleared for a period of 1 year within the limit of a tariff change, excluding inflation, of +/- 2% (+/- 5% for the ATS tariff). In addition, the balance of the CRCP at the end of the tariff period shall be taken into account when establishing the authorised income for the following period. The balance of the CRCP is thus reset to zero at the beginning of each tariff period;
- with regard to the ATRT and ATTM tariffs, the balance of the CRCP is cleared over a four-year rolling period.

The CRE considers it relevant that the clearance period of the balance of the CRCP of all network tariffs is uniform. As a result of its preliminary analysis, the CRE intends to provide that the balance of the CRCP of all tariffs will be cleared over a period of one year. It further considers that the balance of the CRCP at the end of the tariff period should be taken into account when establishing the authorised income for the following period.

The tariff deliberations on the HTB TURPE, the HTA-BT TURPE and the ATRD tariff provide that the settlement of the CRCP balance leads to a decrease or increase in the revenue to be recovered by the tariff, the absolute size of which is limited to 2 %. If this ceiling is reached, the balance of the CRCP not cleared during the year under review shall be carried over to the following year. In order to ensure the financial neutrality of this scheme, the amounts entered in the CRCP are updated annually.

Some operators consider that the CRCP clearance ceiling of 2% could be raised under certain conditions in order to limit the carry-over of expenses and revenues over time or in order to take more quickly into account legislative and regulatory decisions with a significant impact.

Based on its preliminary analysis, CRE considers that:

- the +/- 2% threshold allows for the limitation of excessively abrupt tariff developments, which could raise difficulties in terms of acceptability;
- the balance of the CRCP not cleared in one year being carried over to the following year and updated, the scheme is financially neutral for network operators;
- although this threshold has been able, for some years, to prevent a complete clearance of the balance of the CRCP, the CRE considers that it has not, to date, prevented such clearance on a lasting basis. Furthermore, to the extent that the balance of the CRCP at the end of the tariff period is taken into account in the development of the tariff income for the following period, interest seems limited;
- an increase in the threshold may lead to an increase in the yo-yo effects, i.e. the fact that, all other things being equal, a positive tariff evolution (respectively negative) a given year is compensated for by a negative tariff evolution (respectively positive) the following year.

Accordingly, the CRE plans to maintain a capped CRCP clearance rate of +/- 2% and to extend it to all tariffs.

### **Specific clearance rules for the last tariff year**

Currently, the tariff rules do not provide for any specific provision for the clearance of the CRCP during the last year of a given tariff period. In particular, the tariff movement of (April 1st, <sup>July 1st</sup> or <sup>August 1st</sup> according to the tariff) of year N+3 aims to clear the balance of the CRCP over a period of 1 year (either March 31st, June 30th or July 31st of year N+4 according to the tariff concerned).

RTE proposes that the tariff movement of the last year aims to clear the balance of the CRCP, not over a period of one year, but over a shorter period running until December 31st of the current year. According to the tariff under consideration, the tariff movement could thus aim at clearing the balance of the CRCP over a period of 9, 6 or 5 months.

On the basis of its preliminary analysis, the CRE considers that such a change in the principles of operation of the CRCP may lead, all other things being equal, to tariff movements, on the one hand, which are more important in one direction in the last tariff year and, on the other, more important in the other direction in the first year of the following tariff period. Such a development would, according to the CRE, undermine the readability and acceptability of tariff developments.

The CRE does not therefore envisage, at this stage, specific arrangements for the settlement of the CRCP balance for the last tariff year.

Question 5: Are you in favour of the CRCP operating principles envisaged by the CRE?

### **Concomitant developments in electricity transmission and distribution tariffs**

TURPE 5 HTB foresees that the RTE tariff scheme will evolve on August 1st each year in order to take into account the level of inflation observed in the previous year, thus affecting the settlement of the CRCP balance.

A change in the HTB TURPE is not without consequence on the expenses borne by the distribution network operators as they pay the HTB TURPE to RTE.

However, the tariff rules in force do not allow this development of the HTB TURPE to be taken into account on August 1st of the year in the calculation of the tariff evolution of the HTA-BT TURPE of the same year. In other words, it is currently necessary to note the consequences of the evolution of the HTB TURPE on August 1st of year N on the costs actually incurred by distribution network operators to take them into account in the evolution of the HTA-BT TURPE of year N+1.

Enedis proposes that the rules for the next tariff period provide that the consequences of the tariff evolution of the HTB TURPE as of August 1st of year N are included in the calculation of the tariff evolution of the HTA-BT TURPE as of August 1st of that year.

Following its preliminary analysis, the CRE intends to implement such a development of the rules for the next tariff period.

Question 6: Are you in favour of the principle envisaged by the CRE for the development of the CRCP calculation to coordinate electricity transmission and distribution tariffs?

### 3.3 The current regulation of operating expenses is satisfactory, although the issue of the perimeter of incentivised expenses must be raised regularly

#### 3.3.1 Principles and feedback on the current framework

The current regulation differentiates three categories of net operating expenses (Charges Nettes d'Exploitation - CNE) which are subject to specific tariff treatment:

- incentivised net operating expenses: operators are encouraged to control their operating expenses, they retain all productivity gains or losses that could be made in relation to the trajectories defined by the CRE;
- partially incentivised net operating expenses: certain items of expenses which are partly dependent on factors controlled by operators (particularly energy expenses) are included in part in the account for the regularisation of expenses and income (CRCP). The rate of profit or loss sharing in relation to the forecast path set by the CRE is currently between 10% and 30% (the operator bears between 10% and 30% of the difference and the rest is borne by the tariff);
- net not incentivised operating expenses: the CRCP makes it possible to take account of the differences between the expenses and the actual income recorded, and the expected expenses and income on items which are not foreseeable and which are not easily controlled by operators.

The deadlines for implementing the access tariff for underground storage of natural gas (ATS1) did not allow the CRE to carry out a detailed audit of operators' requests for net operating expenses. As a result, the CRE has adopted an "at cost" tariff framework in which the differences between the expenses and the actual income, and the expected expenses and income, are settled *retrospectively* via the CRCP. However, *ex post facto* checks may be carried out to ensure that the expenses incurred are effective and prudent.

With regard to the net operating expenses involved, their incentive regulation aims to encourage operators to improve their efficiency over the tariff period by leaving them 100% of any differences between the achieved trajectory and the tariff trajectory. Thus, without surprise, the costs observed by operators during previous tariff periods have often been lower than the estimated costs taken into account when drawing up the different network tariffs:

Table 2 - history of differences between realised and forecast of the main operators

Operators	Differences between realised and forecast in % of the cumulative incentivised CNEs for 2009-2017
GRDF	+05% (- 1.5% in 2012-2017).
Enedis	-2.2%
RTE	-4.4%
GRTgaz	-2.4%
Teréga Transport	-1.5%

Some of the discrepancies identified are partly due to errors in forecasting when determining authorised revenues rather than realised productivity gains, and highlight the asymmetry in information between operators and the regulator.

This justifies the use of thorough audits to analyse operators' requests during the tariff work. Furthermore, the level of efficiency revealed by the incentive regulation during a tariff period must be taken into account in setting tariffs for the following period, so that network users benefit from productivity gains over time.

On the whole, operators do not question the overall framework, but they make some requests to reduce the level of incentive for certain types of expenses, for example:

- GRTgaz considers that the incentive regulation on operating expenses is generally satisfactory but would like to see the scope of the CRCP extended "in view of the increasing unpredictability of several parameters" (e.g. Taxes and levies, pension expenses);
- GRDF and Enedis identify, in addition to non-controllable expenses, structural projects which must not be subject to incentive regulation;
- The SPEGNN approves the mechanism currently in force and calls for the productivity effort to be calibrated according to each ELD and based on levels that have been expurgated from non-recurring effects;
- EDF SEI requires that the trajectories defined ex ante be realistic and achievable and that they cover only controllable expenses.
- RTE states that the incentive rate could be lowered and justifies this proposal by including non-controllable expenses in the current incentive mechanism for operating expenses. If the current incentive is maintained, RTE asks that the weighted average cost of capital (WACC), representing the average cost of profitability expected by shareholders and creditors in return for their investment, correctly reflect the level of risk and that expenses that are neither manageable nor foreseeable are compensated to the CRCP.

Other operators are against any incentive regulation of operating expenses:

- Storengy and Géométhane are not in favour of the introduction of incentive regulation of operating expenses in the next period "due to the lack of sufficient overview since the very recent entry into regulation", and given the significant efforts already made in terms of productivity before the entry into regulation and the high variability of certain items.
- Elengy and Fosmax consider that there is no real stake in the incentive for the level of terminal operating expenses due to effective competition from other terminals on the one hand and the constraints specific to the operation of SEVESO sites on the other. They also point out that the proportion of operating expenses compared to CAPEX is expected to increase over the next few years as terminal maintenance will be favoured over new investments.

The principle of operating expenses incentive implemented by the CRE under the current tariff framework should allow long-term benefits for final consumers. It is not problematic in itself that operators overperform their trajectory, as the objective of strong incentives is precisely to achieve long-term gains for the benefit of final consumers. The assessment of the regulatory framework shows that the objective of controlling operating expenses over time seems to have been achieved, at least for distributors.

However, it is essential and it is up to the CRE to ensure, from one tariff period to the next, that the level of the tariff level of the operators' efforts in previous periods is properly taken into account.

As a result, the CRE will take, for future tariffs, the level of productivity and net operating expenses achieved by operators during the previous tariff period as a reference. Operators will have to associate these levels with financial or non-financial operational indicators and justify any request that would significantly deviate from the levels achieved.

Furthermore, the CRE is considering, at this stage, analysing the productivity efforts underlying the operators' tariff requests, in addition to comparative studies with other international operators already carried out in previous audits, analysing the evolution of ratios between costs on the one hand and operational indicators on the other.

Finally, the CRE is considering, at this stage, strengthening controls to ensure consistency between the tariff budget submitted to it and the data developed by operators in their own budgetary year or management dialogue with their shareholders where appropriate.

**Question 7: Are you in favour of renewing the incentive regulation mechanism for operating expenses in force for future tariffs?**

### **3.3.2 Arbitration between OPEX and CAPEX**

Operating expenses and capital expenses corresponding to investments are treated differently in the common basis of regulatory frameworks set up by the CRE:

- the majority of operating expenses are incentivised and are not included in the CRCP;

- the investments made are, however, integrated into the BAR the year after they are fixed. The CRCP mechanism fully compensates for differences between forecasts and actual realisations, subject to the effectiveness of the expenditure incurred.

In view of this differentiated tariff treatment, operators could seek to maximise their profits for a given transaction by favouring one type of expenditure over the other, particularly for certain easily arbitrable expenses.

For certain categories of "off-grid" expenditure such as real estate, vehicles and information systems, the operator may most of the time opt for the acquisition of an asset or the purchase of an equivalent service.

A mechanism to encourage operators to control their capital expenses in the same way as their operating expenses on the "off-grid" investment perimeter has been put in place for certain tariffs in force. The mechanism introduced consists in defining for the tariff period the evolution path of these capital expenses and not to take into account the differences between the forecast and achieved trajectories via the CRCP. Any gains or additional costs that may be realised in relation to this trajectory are therefore fully borne by the operator.

The feedback on the effectiveness of this mechanism is difficult to assess due to its recent introduction. However, in the context of the CRE preparatory work on the regulatory framework for the next generation of regulated infrastructure tariffs, operators made certain proposals for changes:

- GRDF, GRTgaz and RTE question the inclusion of information systems in the perimeter of the incentivised capital expenses. According to GRDF and GRTgaz, retaining them in the incentivised perimeter could lead to counterproductive trade-offs over the long term by pushing operators to postpone the launch of necessary projects over the following tariff period. According to RTE, some projects related to the digitisation of network operation do not leave to the operator the choice of ownership or not of the solution;
- Teréga, on the contrary, wishes to determine a global expenditure trajectory (OPEX and CAPEX) for its information systems on an experimental basis to allow it to make arbitrations freely;
- Enedis questions as a whole this mechanism, which could limit the investment capacity of operators;
- RTE states that it would be appropriate to define an overall envelope without differentiating operating and capital expenses to allow the operator to optimise its arbitrations;
- EDF SEI, which is not currently subject to this mechanism, stresses that the financial challenge must be sufficient to justify such regulation.

In view of its recent introduction, the CRE is considering, at this stage, to retain the basics of the existing mechanism for the next generation of tariffs in place.

IT is a key issue for the markets and also a very high cost item. At this stage, CRE is questioning the relevance of excluding network management information systems or of making data available of the incentivised perimeter with regard to the stakes and the risks that the operators will be able to highlight in their application tariff.

**Question 8:** Are you in favour of renewing the mechanism to encourage operators to control their capital expenses in the same way as their operating expenses in an "off-grid" investment perimeter? If so, do you believe that the network management or data availability information systems should be excluded from the "off-grid" perimeter and should be subject to «classic» regulation with automatic inclusion in the BAR of investments made?

### **3.3.3 Encourage performance in the broadest possible scope**

Network tariffs are calculated on the basis of assumptions on expenses and revenues that allow for the definition of evolution paths for the different items.

As indicated above, a retrospective regularisation mechanism, the CRCP has been introduced to take into account the differences between the actually recorded expenses and income, and the expected expenses and income on certain items previously identified, which are not foreseeable and which are not easily controlled by the network operators.

Thus, depending on the level of coverage at the CRCP of the item in question, operators are more or less incentivised to do better than the tariff trajectory established by the CRE on this item:

- for items at 100% in the CRCP, the operator is not incentivised to do better than the tariff trajectory, as the tariff ultimately covers the entire expense (or income) achieved;

- for items partially in the CRCP, the operator is partly incentivised. It retains part of the (gain or loss) difference between the forecast trajectory and the expense (or income) incurred;
- for items not in the CRCP, the operator is incentivised to do better than the tariff trajectory because it retains the entire (gain or loss) difference between the forecast tariff trajectory and the expense (or income) achieved.

In addition, the CRE provides specific incentives for certain items through bonus/malus (quality of service, control of investment expenditure, etc.). These financial incentives are also taken into account *via* the CRCP.

These principles of incentive regulation are reflected in all the network tariffs currently in force. They were gradually introduced in previous tariffs.

Through this public consultation, the CRE wishes to clarify the doctrine concerning incentives for different items of income and expense. The CRE considers that the inclusion of an item in the CRCP should be seen in the following two areas:

- **predictability:** a foreseeable item is an item for which it is possible for the operator and for the CRE to predict, with reasonable confidence, the level of costs incurred and revenues received by the operator over a tariff period;
- **control:** a controllable item is an item for which the operator is able to control the level of expenditure/revenue over a year, or has the power to negotiate or influence its level, if it is derived from a third party.

The tariff treatment of the items must therefore be assessed against these two features. A predictable and manageable item will have its tariff trajectory set for 4 years and will not be available to the CRCP, with the operator being incentivised to optimise this item. Conversely, an item that is not foreseeable and not manageable will be designed to be covered at least partially by the CRCP, to the detriment of the operator's incentive to optimise this item.

However, most items are only partially predictable and/or manageable. For most positions, the operator has certain control levers but is nevertheless subject to external hazards. Sometimes these hazards create uncertainty and thus prevent the operator and, consequently, the CRE from determining the level of the item concerned for the duration of the forthcoming tariff period: the question of updating the forecasts during the tariff period must then be asked.

While analysis must determine whether an item is rather manageable or not, the tariff treatment cannot be reduced to a single alternative in terms of job coverage, between 100% and 0% of CRCP. For example, for certain items which are partially manageable and/or foreseeable, the CRE considers it appropriate to partially encourage operators. This is the case, for example, with loss expenses or energy expenses.

**Question 9: Are you in favour of maintaining the general principles of operation of the CRCP and risk-sharing between network operators and users?**

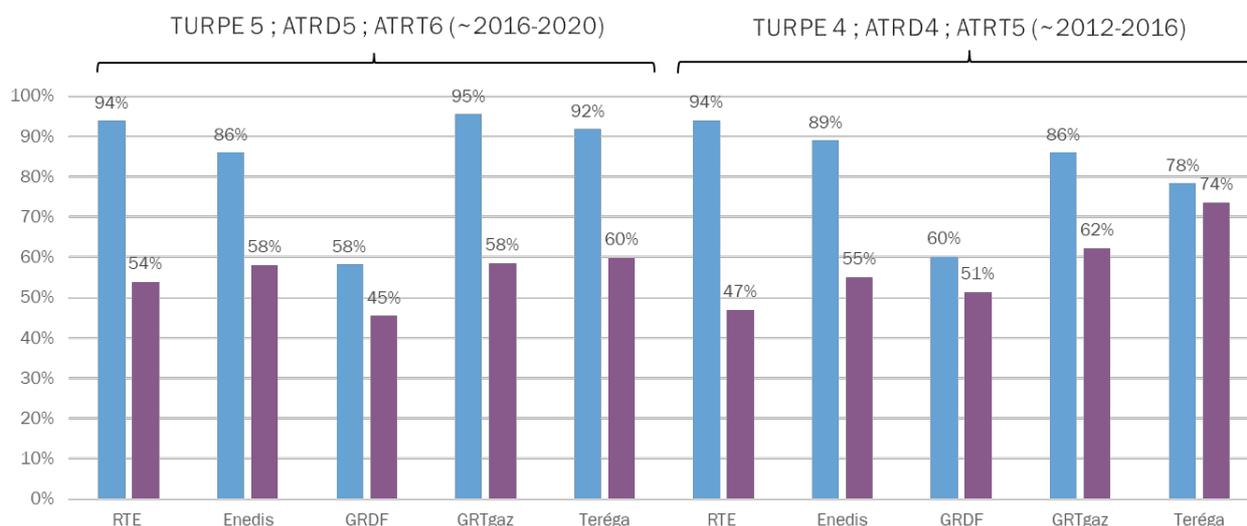
### 3.3.4 Changes in the perimeter of the CRCP and related expenses

Since the establishment of the CRCP mechanism in the TURPE 2 (2005), ATRT3 (2007), ATRD3 (2008) tariffs, there have been many developments in the perimeter of expenses and revenues entered in the CRCP in order to take account of developments related to the activity of network operators. Between the previous tariff period (ATRD4 and ATRT5.) and the current period, the share of the expenses included in the perimeter of the CRCP decreased by 5% in gas tariffs, with the introduction of the incentive on off-grid capital expenses. With regard to the tariffs for the use of electricity networks (TURPE), the share of expenses in the CRCP increased between 3 and 7% following the integration of RTE balancing reserves and concession fees for Enedis. The share of products in the CRCP remained stable between these two tariff periods, with the exception of GRTgaz, which has seen its revenue coverage increase by around 10 %, due to the shift to CRCP coverage of most of the main upstream network revenues from 50% to 80 %.

Given the specificities of each infrastructure, the level of incentive for different expenses and income, and thus the perimeter of the CRCP, may differ from one tariff deliberation to the other. Nevertheless, the perimeter of the CRCP for all operators has been broadly defined in a similar way:

- almost all revenue are included in the CRCP for all tariffs except tariff ATRD5 (see below, paragraph on tariff revenue);
- the CRCP covers approximately half of the expenses incurred by the operator regardless of the tariff concerned. The CRCP coverage rate varies from 45% to 58% depending on the operators.

% des charges et des recettes couvertes au CRCP, c'est-à-dire non incitées ou partiellement incitées (auquel cas une pondération est appliquée) pour chaque opérateur.



If differences between networks require adjustment of the perimeter of the CRCP in accordance with their respective specificities, there are a number of items, or set of items, representing significant amounts for which it is possible to define a common treatment between tariffs. Based on the above doctrine, CRE therefore proposes the following treatments:

- Tariff revenue:

Tariff revenues are generally considered to be unpredictable and uncontrollable because they depend on factors that are difficultly controlled by operators, including, in particular, climatic hazards. They are therefore fully covered by the CRCP for electricity tariffs (TURPE).

For the distribution of gas, revenues from subscriptions, capacity subscriptions and a term proportional to distance ("fixed share"), i.e. 40% of total revenue, are not included in the CRCP in order to encourage GRD to develop the number of connected consumers. For gas transmission, revenues are counted in the CRCP at 100% or 80% (95% on average).

The tariff treatment of revenue appears to be generally satisfactory, both from the point of view of the CRE and of operators. However, GRDF asked to include all its revenues in the CRCP if the incentive regulation for the development of the number of connected consumers was abandoned.

In view of the fact that tariff revenues are not broadly controllable by operators, the CRE considers that it would not be appropriate to increase the level of incentive for operators on this item. The CRE therefore proposes to maintain this item in the CRCP. Furthermore, the CRE will study GRDF's proposal in the light of the assessment of the incentive to develop the number of consumers connected to the gas distribution network.

**Question 10: Are you in favour of maintaining CRCP compensation for the losses and profits of network operators due to changes in consumption / subscriptions?**

- Network capital expenses:

The capital expenses linked to the networks are broadly predictable and controllable by all operators. In this respect, it may be appropriate to incite operators on this cost item by excluding it from the perimeter of the CRCP.

However, if this cost item is foreseeable by the operator, the CRE considers that it is not able to forecast the relevant investment level in a sufficiently precise manner. Furthermore, if incentives are introduced for this cost item, there would be a risk that operators would reduce their investment expenditure to the detriment of the safety and quality of the network in the medium/long term, despite the incentives for the quality of service and supply to which operators are otherwise subject. The CRE therefore proposes to maintain this item within the perimeter of the CRCP.

**Question 11: Are you in favour of maintaining in the CRCP the capital expenses linked to networks so as not to send an incentive to reduce the volume of short-term investment?**

- Energy expenses/ Compensation for losses:

Coverage of energy losses and expenses in network tariffs is an important financial issue. This cost item may represent up to 11% of the income authorised for RTE.

This burden is not foreseeable, as it is correlated with energy market prices. It is not fully controllable because it depends on the overall amount of energy that passes through the network and therefore depends directly on the observed temperatures. For this reason, the majority of energy losses and expenses are in the CRCP and only partially incentivised in all tariffs, with different levels of incentives.

This incentive relates to the difference, recorded each year *ex post*, between the reference cost of loss (determined as an average of prices over the past year that takes into account the arbitrations performed by the operator) and the cost of covering losses incurred by operators, with the exception of gas transmission.

For gas tariffs, the incentive rate is 30 per cent in distribution and 20 per cent in transmission; for electricity tariffs, this rate is 20% for distribution, and for transmission 20% on price and 10% on volume. These incentive rates correspond to the share borne by the operator in the event of a discrepancy between the expenses incurred and the expenses covered by the tariff.

This incentive is a point of disagreement with some operators who consider that they have very limited control over the cost of losses.

The CRE considers that the operator can optimise its procurement policy and network management to try to reduce these costs. It is therefore essential to ensure that the operator makes best efforts to minimise this item of expenditure while taking into account that this cost item is highly exposed to changes in electricity and gas markets.

As operators do not have all the levers to fully control the volume of losses, the CRE therefore considers that a partial incentive is justified. For these reasons, the CRE is considering retaining this item predominantly in the CRCP while retaining a partial incentive.

**Question 12: Are you in favour of keeping energy expenses/ losses partially in the CRCP in order to encourage network operators to reduce them?**

- Other expense items:

Some operators insist on the volatile nature of other expenses (including staff expenses, taxes and levies).

The assessment over the period 2009-2017 of the differences between the forecast and actual trajectories for these items shows that these differences are limited. The CRE considers that these items are largely controllable and/or foreseeable by operators and that it is justified to continue to encourage them. In particular, with regard to taxes and levies, the CRE considers that this is a reasonably foreseeable and controllable item of expense. Indeed, while the degree of predictability and control of the level of taxation can be questioned, the tax base of operators is foreseeable and controllable.

However, the CRE may have to question itself again when drawing up future tariffs, and on the basis of the doctrine previously described, on the inclusion of other items within the perimeter of the incentivised expenses or in the CRCP.

Question 13: What do you think about the perimeter of expenses taken into account in the CRCP?

### **3.4 Effective investment is a prerequisite for the success of the energy transition**

#### **3.4.1 Contain investment expenses in a context of consumption control, while maintaining the quality of service rendered**

Since the beginning of the 2010's, demand for electricity and gas has tended to stabilise or even to decrease. This is, in particular, the result from energy efficiency and the tertiarisation of the economy. This trend towards stabilisation or even decreasing extraction on the networks should continue, particularly with the further development of self-consumption and decentralised production, and will weigh on the basis of the collection of network expenses. However, the projected investment expenditure of regulated operators remains high or even growing

Operators explain these important investment needs in particular by the need to renew networks and adapt them to the needs of the energy transition. By way of illustration, RTE anticipates that the installed power of production sites using renewable energy sources could double or triple between now and 2035<sup>5</sup>. Such a development of these installed powers, which are largely decentralised, would have significant implications for investment expenditure.

The investment expenditure of regulated operators is reflected in the tariffs by the evolution of their regulated asset base (BAR).

Tariff trajectories foresee a continuous increase in operators' BARs, supported by significant investments. This results in an increase in expenses to be recovered from network users. This increase in expenses, combined with a stable or declining coverage base, could lead to significant tariff increases.

Investment decisions are a decisive factor in balancing the quality of service provided by infrastructure with its cost. The regulatory framework, whose role is to align the interests of operators as closely as possible with those of the community, should therefore encourage network operators to prioritise and carry out the investments most useful to the community under the best possible cost conditions. This objective is particularly important, given the context, in order to ensure the sustainability and acceptability of investment expenditure and to avoid the risk of stranded costs resulting from unnecessary investment. Controlling the investments of regulated infrastructure operators is therefore a crucial tariff issue, all the more so given that operators' investment decisions have long-term tariff implications because of the lifetime of the assets. The CRE has identified several avenues for reflection to strengthen incentives to optimize investment and thus improve the regulatory framework to address these challenges.

It is also in this context that the CRE has asked operators to carry out reflections on, inter alia, network dimensioning methods and the resilience of investment decisions to the different future options, with the aim of ensuring that their investments bring income that is sufficiently certain and above their costs.

The CRE also wishes to refine its vision of the investments made by operators, both in transmission and in distribution, beyond the annual approval of the GRTs' annual investment programme<sup>6</sup>. To this end, it calls on the network operators to work on the definition of indicators for monitoring the use of the works which would then be transmitted to it on a regular basis. They will provide a better understanding of the changes in the structure and use of networks over time.

#### **3.4.2 Reminder of the regulatory framework in force: incentives focused on controlling investment costs**

Whatever the operator, within the current framework, the investments made are integrated into the regulated asset base (Base d'Actifs Régulés - BAR) following their commissioning. The tariff framework provides for a posteriori coverage of any differences in capital charges between the forecast trajectories and the trajectories achieved through the CRCP mechanism. Operators are therefore not incentivised to make savings from a given amount of pre-defined investments.

<sup>5</sup>The 2018 RTE forecast provides for a total installed capacity for renewable electricity production between 116 GW (Volt scenario) and 149 GW (Ampere scenario) in 2035, to be compared to facilities of 50 GW on mid-2018.

<sup>6</sup> As a reminder, the CRE has the competence to approve the investment programmes of GRTs and gas storage operators, which is not the case for electricity and gas distribution.

Indeed, given the potential risk of short-term underinvestment that could be generated by the introduction of an incentivised trajectory on investments, and the difficulty for the CRE to set relevant trajectories, the maintenance of capital expenses in the CRCP remains the preferred solution at this stage by the CRE, as indeed by the vast majority of European regulators.

However, in the current tariffs, various regulatory mechanisms aim to ensure that operators control their investment costs: the setting of target budgets for large transmission projects, the monitoring of unit costs for certain distribution works, the TOTEX regulation for "off-grid" capital expenses and the specific incentive regulation for the roll-out programmes of next-generation meters in distribution.

Question 14: Are you in favour of maintaining the principles governing the current regulatory framework on investment expenditure of the various regulated infrastructure operators?

### 3.4.3 Send virtuous signals to investment via the remuneration rate

#### 3.4.3.1 Incitement to extend the lifetime of the assets

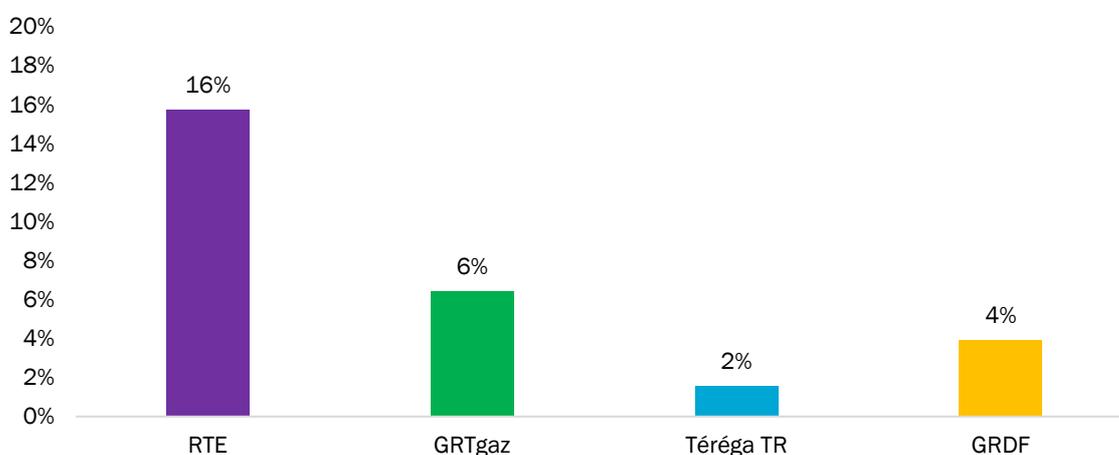
Some operators have pointed out to the CRE that, at times, a substantial part of the assets they exploit are at zero value in their accounts, since their technical use has exceeded their accounting lifetime.

These operators propose that the regulatory framework be adapted to ensure that these fully amortized but still exploited assets continue to receive explicit remuneration for operating risk and/or for the purpose of encouraging the continued operation of these assets.

If the CRE finds that the situation is not homogeneous among operators, it observes that the proportions of fully depreciated assets remain low, with the exception of RTE, where this proportion reaches 16% at the end of 2017.

**Chart: Proportion of assets with zero net book value in the assets of operators on 12/31/2017**

#### Proportion of assets with zero net value on 12/31/2017



*Enedis is not included in this graph because of its particular remuneration structure.*

The CRE reminds that under the current tariff rules, any asset that has reached its tariff lifetime is no longer included in the BAR and is therefore no longer remunerated. Indeed, the CRE considers that, from the time when the investment made by the operator was "repaid" by the network users via the infrastructure user expenses and the capital invested was remunerated to it, there is no longer any reason why users continue to pay capital expenses for these assets, even if they are still operated by the operator.

The CRE considers that the methodology for determining the remuneration rate already allows for a risk remuneration for network operators associated with the operation of fully depreciated assets. Only a significant change in the share of assets with zero book value could justify a change in remuneration rates (in particular the beta parameter) to take account of this risk.

Nevertheless, in such a situation, the CRE considers that the preferred solution would be to realign the accounting lifetimes of the assets with their actual lifetimes.

On the basis of the European comparison elements, the CRE notes that in the vast majority of cases, regulated infrastructure tariffs do not include an explicit remuneration for fully depreciated assets<sup>7</sup>.

The CRE shares the objective of operators to maintain assets in operation beyond their accounting lifetime, as this reduces the total costs for the community. It is therefore in favour of the additional operating expenses mobilized by operators to increase the technical lifetime of their assets in order to avoid that new investments be clearly identified and be integral parts of the business plans presented by operators to the CRE when setting tariffs.

CRE does not at this stage envisage introducing an explicit remuneration mechanism for depreciated assets operated by operators.

**Question 15: Do you share the CRE's preliminary view that explicit capital remuneration for depreciated assets still in use is not desirable?**

### 3.4.3.2 Incentives to obtain investment grants

Some operators have made requests to provide remuneration for the amounts of investment grants received for the (full or partial) financing of assets they exploit. According to these operators, this remuneration is justified, on the one hand, by the risk of exploitation they face in the exploitation of these assets and, on the other hand, by the incentive nature of the search for subsidies for such remuneration.

From a tariff point of view, all amounts recognised as investment grants by operators are deducted from the value of the assets that make up the BAR. Investment subsidies represent a source of free financing that does not give rise to the reimbursement by consumers of amounts received or to the payment of interest. In this sense, the CRE considers that infrastructure users do not have to pay the capital expenses relating to these fixed capital amounts. In addition, as with amortized assets, operating expenses associated with subsidised assets are covered by the tariffs.

The European comparison elements drawn from the study entrusted by the CRE to the *Frontier Economics consulting firm* show that all the energy regulators of France's European neighbours deduct the investment subsidies from the BAR and therefore do not induce any remuneration<sup>8</sup>.

Consequently, the CRE does not envisage, at this stage, introducing an explicit remuneration mechanism for investment grants.

**Question 16: Do you share the CRE's preliminary view that explicit remuneration for investment grants is not desirable?**

### 3.4.3.3 Apply remuneration rates that give a better signal to investment

The objective of the current tariff framework is to cover the costs of an efficient operator and to allow reasonable remuneration for the capital invested to finance regulated assets, while giving a fair signal to the investment. The level of remuneration of the operator must, on the one hand, enable it to finance interest expenses on its debt and, on the other hand, provide it with a return on own funds consistent with the level of risk associated with comparable assets.

To date, the CRE has set a single rate of remuneration for each type of infrastructure<sup>9</sup> applying to a single regulated asset base (base d'actifs régulés - BAR) aggregating the value of all assets operated by the same operator. It shall be set for the entire tariff period and shall be calculated on the basis of calculation parameters derived from long-term data. In particular, the risk-free rate is calculated on the basis of long-term averages of long maturities, consistent with the long term assets that make up the BAR.

<sup>7</sup>With the exception of the Portuguese regulator, who explicitly allocates a remuneration premium to the fully depreciated electricity transmission assets in complex ways.

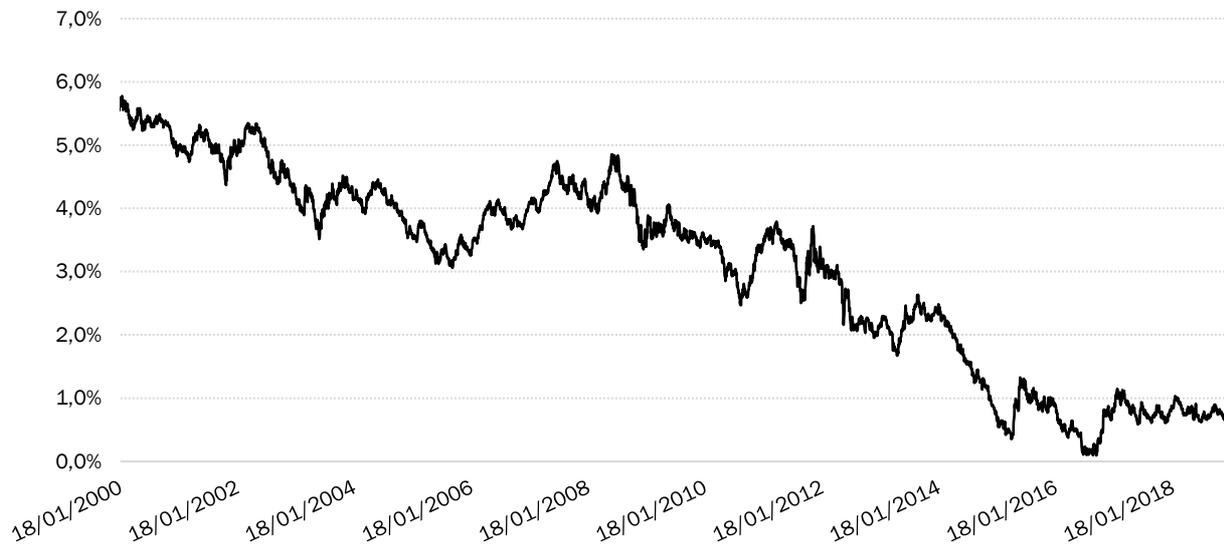
<sup>8</sup>Except for the Spanish regulator who pays 10% of the amount of European investment grants received by the electricity GRT. It should be noted that the CRE has in the past granted compensation to 3% for 10 years of investment subsidies received by the French gas GRTs to finance certain major projects benefiting from this same premium for 10 years.

<sup>9</sup> In some cases, compensation premiums have been awarded for investment incentives.

As a result of the use of long-term averages, the remuneration rate is evolving with a significant inertia compared to market rates. The average financing costs of operators are also changing with some inertia and the refinancing capacities of their credit lines are limited.

As part of its deliberations, the CRE questions the investment signals that these methods of calculating the rate of remuneration send to operators, particularly in the context of the continued decline in rates on the markets for several years, as illustrated in the chart below.

**Chart: yield on the 10-year OAT index from January 2000 to January 2019**



Source: Thomson Reuters

In the current situation, operators benefit from historically low borrowing conditions for financing their investments, whereas, from a tariff point of view, these investments will be remunerated at a rate calculated on historical averages incorporating periods where rates were much higher. This may give rise to an over-incentive to investment. Conversely, with the same method of calculation, in the event of a rise in rates, operators would face higher financing conditions which would only be included in the calculation of their remuneration rate with several years' delay, which would constitute a risk of under-incentive for investment.

The CRE therefore initiated a discussion several months ago on possible changes to the remuneration framework applied to regulated operators in order to send a fairer signal to investment, which would be more in line with the conditions faced by operators in financing their investments.

Prior to this consultation phase, operators were invited to submit their requests concerning the terms of remuneration of assets and the determination of the various underlying parameters, their terms for changing between tariff periods and the appropriateness of differentiating the remuneration rate according to the periods and type of investment.

In their applications, operators shall not call for fundamental changes to the mechanism for calculating the remuneration rate. Their focus is mainly on levers to increase the rate of remuneration, particularly for certain assets/activities considered more risky by operators or at the end of their lifetimes.

In addition to its own analyses, the feedback and the requests of operators, the CRE commissioned a comparative study of the methods for determining the remuneration of assets at the European level, entrusted to the Frontier Economics consulting firm. While European regulators have, for the most of them, an approach similar to that used so far by the French regulator, the CRE notes that within the countries studied by the consultant, a number of regulators have introduced greater flexibility in remuneration rates over the same tariff period and a distinction between the financing costs of old and new assets.

In particular, the CRE notes that four regulators have introduced indexation of certain parameters for the calculation of the remuneration rate and two of them have made a distinction between a remuneration rate dedicated to historical BAR and a remuneration rate dedicated to new investments.

In particular:

- the Dutch regulator ACM distinguishes two rates of remuneration: a rate dedicated to existing assets and the other to new investments. This mechanism was put in place in order not to apply the cost of historical

- debt to new loans. These elements were introduced during the current tariff period. In addition, the debt remuneration rate is indexed according to a trajectory set at the time of setting up the tariff;
- the Belgian regulator in Flanders, the VREG, differentiates the cost of debt depending on whether it remunerates existing or new debt. This scheme is driven by changes in borrowing rates since the financial crisis. The difference with the Dutch regulator is the normative consideration of the proportion of new debt;
  - The Ofgem annually updates the cost of market-based debt for the calculation of the remuneration rate and is currently studying the possibility of also indexing the cost of equity;
  - for ARERA, the Italian regulator, the cost of the debt is not indexed annually but in the middle of the 6-year tariff period, and only the risk-free rate is updated;
  - ERSE, the Portuguese regulator, indexes the remuneration rate in order to better take into account the high volatility of the post-crisis period.

### Evolution envisaged by the CRE in terms of remuneration for assets

In order to improve the signal to investment and reduce the risk of over- or under-investment, CRE plans to introduce a new remuneration mechanism from the next tariff periods. It aims to ensure greater consistency between the rate of remuneration of new assets and the financing conditions available to operators, as well as greater responsiveness of the rates of remuneration of new assets with changes in financing conditions within a tariff period.

To this end, CRE envisages the establishment of two mechanisms:

- the differentiation between the rate of remuneration of historical assets, which would remain set according to medium/long-term parameters and data on the one hand, and the rate of remuneration of assets put into service for a rolling period, according to short-term parameters and data on the other;
- the indexation of the remuneration rate dedicated to new assets within the same tariff period, in accordance with modalities (update method and frequency) which remain to be defined.

The differentiation of the remuneration rate would be achieved by setting up two rates, the first dedicated to the historical regulated assets already present in the BAR at the beginning of the tariff period, thus reflecting a higher average financing cost, the second dedicated to assets put into service during a rolling period (for instance 4 years) and financed under more recent conditions. The new assets would be reintroduced into the historical BAR at the end of the rolling period, as the "historical" BAR remuneration rate would itself be updated to take account of more recent developments. Thus, the level of complexity would remain contained.

With this approach, the rate applied to new investments would thus be more consistent with the conditions for financing these investments and would limit the risks of over- or under-incentives for investment. Maintaining the long-term rate would allow proper consideration to be given to the average cost of financing operators' assets and would limit the volatility of the operators' remuneration.

Question 17: Are you in favour of changes in the methods for calculating the remuneration of operators' assets envisaged by the CRE, and mainly the differentiation of the rates of remuneration of historical assets and new assets?

### 3.4.4 Strengthen incentives to control the costs of investment projects

In addition to ensuring that the investments of operators are justified and useful for the community, CRE is considering strengthening incentives to control the costs of investment projects.

The regulatory framework in force provides for different mechanisms to encourage operators to control the cost of their investment projects, regardless of their total volume: incentive regulation of unit investment costs of GRDs, specific incentive regulation for interconnections and major transmission projects, incentivised "off-grid" capital expenses, or specific incentive regulation for smart meter deployment programmes.

Approximately three quarters of the total annual investment expenditure of GRD and half of the total investment expenditure of the GRTs are thus subject to financial incentives.

#### **3.4.4.1 Maintaining incentive mechanisms for controlling investment costs in distribution based on unit costs**

As part of the preparation of the previous generation of tariffs, the CRE commissioned a study on the incentive regulation of electricity and natural gas infrastructure in Europe, which showed that incentive regulation mechanisms for investment costs have already been put in place by several regulators in Europe. The study recommended, inter alia, that the CRE establish an incentive regulatory mechanism for unit investment costs in the networks.

The ATRD5 and TURPE 5 HTA-BT tariff deliberations introduced, respectively, in the distribution of gas and electricity, an incentive regulation of unit investment costs with the objective of encouraging operators to optimise the costs of investments in networks under their control.

The mechanism shall be based on the definition of a model of reference costs for facilities put into service by the operator, taking into account their technical characteristics and a trend in costs over time. Only works for which such a model of reference costs can be achieved are covered by this mechanism. That is why it applies to about half of the total investment expenditure of operators.

For each year of the tariff period concerned, the application of this mechanism shall be to assess the difference between the total cost of the facilities put into service and the theoretical total cost of the same facilities, calculated from the model of reference unit costs applied to the quantities of facilities put into service concerned by the incentive regulation.

This difference, positive or negative, reflects the operator's efficiency in terms of the actual investment volume. It is shared between the operator and the network users, by taking into account through the CRCP an incentive (bonuses or malus) equal to 20% of that difference, within a ceiling (+/- EUR 30 million for Enedis, +/- EUR 9 million for GRDF). The effect of this mechanism is therefore to encourage the operator to control its unit investment costs, without calling into question the choice of investment projects.

The investments concerned shall be integrated into the operator's BAR up to their actual value, subject to any controls that the CRE may carry out on the efficiency of the costs incurred. The capital costs associated with these investments therefore remain calculated and hedged on the basis of their actual value.

This mechanism was first applied during the 2018 GRDF tariff movement and will be applied for the first time during the 2019 Enedis tariff movement. It is therefore still too early to benefit from a substantial feedback. The CRE therefore proposes, at this stage, to maintain this scheme in the future for distribution.

**Question 18: Are you satisfied with the principle and parameters (sharing rate, incentive ceiling) of the incentive regulation mechanism for unit investment costs introduced by the ATRD 5 and TURPE 5 HTA BT tariff deliberations?**

#### **3.4.4.2 Changes in incentive mechanisms for controlling the costs of large electricity and gas transmission projects**

The current regulatory framework for the transmission of electricity and gas provides that the budget presented for major investment projects by the GRTs is audited and that the CRE then sets a target budget. The principles of this system are as follows:

- prior to the commitment decision, the CRE shall audit the budget presented by the GRT and set a target budget;
- irrespective of the investment expenditure incurred by the GRT, the asset enters the BAR at its real value (less any subsidies) when it is put into service;
- if the investment expenditure incurred by the GRT for this project is between 90% and 110% of the target budget, no premium or penalty shall be allocated;
- if the investment expenditure realised is less than 90% of the target budget, the GRT shall receive a premium equal to 20% of the difference between 90% of the target budget and the investment expenditure realised;
- if the investment expenditure incurred by the GRT exceeds 110% of the target budget, the GRT shall bear a penalty of 20% of the difference between the investment expenditure incurred and 110% of the target budget.

The CRE has also extended the incentive regulation mechanism for RTE investments to offshore wind farms. The projects concerned by this incentive regulation are as follows:

Table3 - main information on the investment projects of the GRTs

RTE				
Project	Date of deliberation setting the target budget	Target budget	Best budget forecasting on date	Year of commissioning
IFA 2	02/02/2017	EUR 370 million	EUR 392.5 million	2020
Cergy Persan	06/15/2017	EUR 52 million	EUR 54 million	2019
Bay of Biscay	09/27/2017	EUR 875 million	EUR 875 million	2025
Avelin – Avelgem	11/22/2018	EUR 35.5 million	EUR 40 million	2022
Avelin – Gavrelle	11/22/2018	EUR 163 million	EUR 230 million	2021

GRTgaz					
Project	Date of deliberation setting the target budget	Initial budget	Target budget	Termination cost	Year of commissioning
Val de Saône	10/30/2014	EUR 727 million	EUR 650 million	EUR 692 million	Completed
Gascoigne(Biscay)-Midi	10/30/2014	EUR 22 million	EUR 21 million	EUR 23 million	Completed
Project to convert zone B to H gas - Pilot part	12/15/2016	EUR 42 million	EUR 42 million	EUR 43 million	2018-2020
Vindecy compression	02/15/2018	EUR 66 million	EUR 63.1 million	EUR 66 million	2020
South Brittany Reinforcement	11/28/2018	EUR 148 million	EUR 137.8 million	EUR 148 million	2021

Teréga					
Project	Date of deliberation setting the target budget	Initial budget	Target budget	Termination cost	Date of commissioning
AGU compression reinforcement	12/15/2016	EUR 25.5 million	EUR 25.5 million	EUR 23.2 million	2019
Gascoigne (Biscay)-Midi	10/30/2014	EUR 152.0 million	EUR 152.0 million	EUR 160.7 million	2018
Reconstruction of Capens-Pamiers	02/15/2018	EUR 29.7 million	EUR 29.7 million	EUR 29.7 million	2021

The CRE intends to amend certain parameters of this scheme for the next tariff period in order to cover a larger share of the investment.

#### Perimeter of application of incentive regulation

The perimeter of this incentive scheme for cost control differs according to the energy considered: the principle of setting a target budget applies to gas transmission investment projects with a budget above EUR 20 million, while the threshold is EUR 30 million for electricity. Furthermore, for gas, all network projects, i.e. development, renewal

and connection projects, are subject to incentive regulation, whereas for electricity only network development projects are concerned.

In line with harmonisation, the CRE intends to extend the perimeter of application of incentive regulation to all electricity grid projects, including development, renewal and connection projects.

### **Zone of neutrality**

The current incentive mechanism provides for a zone of neutrality between 90% and 110% of the target budget defined by the CRE. However, it seems appropriate to question the purpose and extent of this zone of neutrality. In fact, with the exception of the case of interconnections (see section 3.4.4.4), the feedback of the implementation of this incentive mechanism during the period covered by TURPE 5 HTB and ATRT6 tariffs shows that the most relevant timetable for the CRE to audit project costs and set their budget is as late as possible, i.e. just before the commitment of works costs. In this context, feedback shows that the final costs of investment projects are often within this zone of neutrality. *In fact*, the existence of the latter reduces the incentive for cost control, since within this range the operator does not receive any bonuses or malus for savings or additional cost. Thus, the CRE plans to reduce the zone of neutrality to 5 per cent around the target budget for national projects carried out by gas and electricity GRTs.

**Question 19: Do you have comments on the existing incentive framework and the developments envisaged by the CRE for major transport projects?**

#### **3.4.4.3 Incentive to control the costs of transmission investments (not accounting for major projects)**

The incentive scheme to control the costs of the projects mentioned above is now limited in volume. The CRE plans to supplement it with incentives for smaller projects.

In this context, the CRE had formulated in the TURPE 5 HTB and ATRT6 deliberations its intention to study the advisability of an incentive regulation mechanism for unit investment costs. As such, the CRE had asked the GRTs to implement a thorough monitoring of unit costs of their investments in order to be able to provide detailed data on unit costs for the preparation of future tariffs. The CRE would like to continue its work on the subject with the GRTs. The objective will be to study on the basis of the raw data of GRTs possible methods for determining unit costs, in close collaboration with network operators, and to analyse the representativeness of these unit costs.

In addition, the CRE questions the appropriateness of random or discretionary auditing of investment projects that are below the threshold for defining large projects. In this way, randomly or discretionary selected projects would be subject to incentive regulation comparable to that applied to large investment projects.

**Question 20: Do you have comments on the application of incentive regulation to control the costs of large projects to smaller, randomly or discretionary selected projects?**

#### **3.4.4.4 Incentives for interconnection projects**

Tariff deliberations TURPE 5 HTB and ATRT6 have established an incentive regulation mechanism for electricity and gas interconnection projects, aimed at encouraging transmission network operators to implement interconnection projects that are economically relevant to the community at the best cost conditions.

As a reminder, the mechanism is based on three distinct incentives: the incentive to make investments as soon as possible, the incentive to make investments in the best possible cost conditions and the incentive to make good use of electricity interconnection and the use of the gas facility:

- 1) the financial incentive for the interconnection investments is evidenced by the allocation of a fixed premium expressed in euro and the amount of which is defined by the CRE prior to the GRT commitment decision. This fixed premium is calculated in relation to the benefit for the community estimated by the CRE on the basis of a cost-benefit analysis of the project. It shall be paid at the commissioning of the project, which shall constitute an incentive to make investments as soon as possible;

- 2) the incentive to minimise the costs of carrying out the project shall take the form of a premium or penalty, set according to the difference between the target cost of the project and the realised cost:
  - if the investment expenditure incurred by the GRT for this project is between 90% and 110% of the target budget, no premium or penalty shall be allocated;
  - if the investment expenditure realised is less than 90% of the target budget, the GRT will receive a premium equal to 20% of the difference between 90% of the target budget and the investment expenditure realised;
  - if the investment expenditure incurred exceeds 110% of the target budget, the GRT will bear a penalty of 20% of the difference between the investment expenditure realised and 110% of the target budget.

In the event that the actual cost exceeds the target cost, the amount of this penalty on the overall remuneration of transmission network operators for interconnection projects shall be limited so that all cumulative incentives cannot lead to a remuneration of the project's committed capital below the CMPC - 1%;

- 3) the incentive for the use of the facility shall take the form of a premium or penalty, calculated each year from the commissioning of the facility, the level of which depends, respectively, for electricity and gas, of the flows carried out (respectively of the capabilities actually subscribed to) in relation to flows (for the respective capabilities) originally foreseen by the CRE. If the capacity subscribed is lower than the capacity initially reserved, the penalty may not exceed the equivalent of the annuity of the fixed premium defined by the CRE prior to the commitment decision. The premium or penalty shall be applied during the first 10 years of operation of the infrastructure.

For electricity, this incentive mechanism is currently applied to the Bay of Biscay and Avelin-Avelgem projects.

The CRE considers that the target budget should be set at the time of the decision to implement the project, for example, at the time of CBCA (Cross Border Cost Allocation) decision when the project is subject to it.

Furthermore, the CRE has adopted for project IFA2 a specific incentive regulatory framework, ensuring a more balanced sharing of risks and benefits between RTE and network users. The context of high uncertainty created by Brexit has in fact led the CRE to better align the interests of RTE and of the final consumer. Thus, RTE will maintain or will have to cover 30% of the differences between, on one hand, a target for investment costs and the expenditure incurred, and, on the other, between a target rate of use of the facility and its actual use. This incentive also applies to a wider area (lack of zone of neutrality, single floor of remuneration at the rate of remuneration of current fixed assets).

For gas, this mechanism has not been used during the current tariff period due to the absence to date of a gas transmission project concerned.

The CRE is currently considering the principles of the current incentive regulation mechanism applicable to electricity and gas interconnection projects and questions the following:

- the incentive rate on the amount of expenditure;
- the implementation of the incentive on the use of the interconnection;
- the relevance of the specific maximum penalty on use.

**Question 21: What changes in the existing incentive framework for interconnection projects would seem relevant to you?**

### **3.4.5 Harmonize the treatment of stranded costs**

#### **3.4.5.1 Stranded costs: current regulatory framework**

The regulatory framework in force provides for situations where operators are at risk of so-called stranded costs.

The classification and tariff treatment of stranded costs differ according to the regulated activity:

- in the distribution of gas, no type of stranded cost is explicitly provided for in the tariff;
- for the distribution of electricity, the net book value (NBV) of demolished fixed assets is 100% covered by the tariff via CRCP (approximately EUR 60 million / year over the period TURPE 5);

- for the transport of gas, an incentivised cost item shall cover the annual stranded costs up to the trajectory defined for the current tariff period (EUR 3.25 million / year for GRTgaz; Teréga did not foresee any stranded costs for the period 2017-2020 ). In addition, the costs of studies relating to large abandoned projects as well as the NBV of compression stations and large facilities removed from the inventory before the end of their accounting lifetime shall be treated on a case-by-case basis on the basis of a substantiated file submitted to the CRE and, where appropriate, covered by the tariff via the CRCP;
- for the transport of electricity, the NBRV of demolished fixed assets is 100% covered by the tariff via CRCP (approximately EUR 30 million / year over the period TURPE 5). The costs of studies and work without further processing shall, however, be the subject of a financial incentive on the basis of a forecast trajectory (approximately EUR 8 million / year in TURPE 5): RTE retains or supports 100% of the deviation from this trajectory. Finally, a specific scheme provides for 100 % coverage by the tariff via the CRCP of unanticipated study costs related to the abandonment of major investment projects when these studies have been approved by the CRE;
- special cases: the roll-out of the Linky and Gazpar meters led to the accelerated depreciation of the existing meters decommissioned before the end of their accounting lifetime; the Fos-Tonkin methane terminal was amortised in an accelerated manner, allowing the value of the BAR to be decreased to zero at the end of 2020 due to the end of long-term capacity subscriptions at that year, without any prospect of renewal beyond that time.

#### 3.4.5.2 Definition of stranded costs

Of the different tariff deliberations in force, only the ATRT6 deliberation<sup>10</sup> proposes a definition of stranded costs. Other deliberations include provisions specific to different cases of possible stranded costs, but do not propose a common definition. For the sake of readability, the CRE wishes to generalize the definition of stranded costs proposed by the ATRT6 deliberation to all future tariff deliberations.

Reminder of the definition of stranded costs contained in the ATRT6 deliberation (section 1.2.1.2.5, page 10/101).

*"Stranded costs" means the residual book value of assets withdrawn from the inventory before the end of their lifetime, as well as costs relating to technical studies and upstream processes that could not be immobilised if the projects concerned were not carried out.*

Question 22: Are you in favour of the definition of stranded costs proposed by the CRE?

#### 3.4.5.3 Treatment of stranded costs

##### 3.4.5.3.1 Withdrawal of assets from the inventory before the end of their accounting lifetime

Currently, the residual book value of assets withdrawn from the inventory before the end of their lifetime is covered for the electricity distribution and transmission tariff, but is not covered for gas distribution. This difference in treatment can be explained by the respective technical specificities of these activities. It can be considered that electricity distribution networks, which are still largely aerial, are more prone to stranded costs associated with the demolition of works as a result of heavy weather events than the natural gas distribution networks, all buried. However, it is possible to question this differentiated treatment as electricity distribution networks are buried and rendered more reliable. In addition, the net book value of demolished fixed assets in gas transmission (excluding for large amounts, processed on a case-by-case basis) is the subject of an incentivised trajectory and is therefore covered within the limits set by that trajectory.

These differentiated tariff treatments raise the question of incentives for operators to control these risks of stranded costs, and therefore the CRE is considering adopting a harmonised treatment of stranded costs based on the following two principles (already applied to gas GRTs):

- a case-by-case analysis in the event of stranded costs on significant amounts of assets (climate hazards, for example);

<sup>10</sup>Deliberation of the Energy Regulatory Commission of December 15th 2016 on the tariff for the use of GRTgaz and TIGF natural gas transmission networks

- the setting up of a tariff trajectory and therefore an incentive for all other asset withdrawals before the end of their accounting lifetime.

Question 23: Are you in favour of the principles proposed by the CRE for the treatment of stranded costs which are already in place in the ATRT tariff?

#### **3.4.5.3.2 Unemployed study costs associated with the abandonment of large investment projects**

The regulatory framework in force for the transmission of electricity provides that the tariff covers the costs associated with studies without follow-up related to the abandonment of large investment projects when these studies have been approved by the CRE.

With regard to major investment projects, the CRE proposes to extend this scheme and to cover education costs that cannot be immobilised as a result of the abandonment of the associated project. This is intended to ensure that operators are not encouraged to carry out projects that bring little value to the community or are no longer relevant in order to see these expenditure on studies covered.

With regard to expenditure on purchases of supplies and works, the CRE estimates that these should not be covered in the event that a project is not completed. It is the operator's responsibility to ensure that a project can be completed before such expenditure is incurred.

Question 24: Do you agree with the CRE's analysis that sole uninterrupted study costs should be covered by the tariff?

### **3.4.6 Harmonize the remuneration of current fixed assets**

#### **3.4.6.1 Current regulatory framework**

Under the current regulatory framework, current fixed assets (CFA) are remunerated at the cost of debt (nominal, before tax) used in the calculation of the rate of remuneration of each tariff, with the exception of electricity distribution and natural gas distribution, where CFA are not remunerated (except for Linky and Gazpar smart metering projects). This treatment is justified by the existence of long investment cycles in upstream infrastructure operators (transmission of electricity and natural gas, methane terminals and underground storage of natural gas).

#### **3.4.6.2 Operator requests and CRE proposals**

The majority of operators requested that CFA be remunerated at the same rate as BAR (that is, CMPC) rather than at the cost of the debt, arguing that the latter does not reflect the cost of the capital mobilized in the construction phase.

Although the CRE does not consider aligning the remuneration rate of CFA with that of the BAR, it proposes that distribution network operators should be able to receive remuneration at the cost of their long-term investments, on a case-by-case basis, for consistency with what is applied to upstream infrastructure operators.

Question 25: For long-term investments, are you in favour of the CRE's proposal on the remuneration of current fixed assets (CFA)?

### **3.5 Innovation among operators must be encouraged**

In the context of changing energy landscapes, accelerated in particular by the development of advanced meters, "Smart grids" projects and renewable energy, the role of network operators is important, both in adapting their networks to these developments and in supporting the various stakeholders (communities, start-ups, traditional players in the energy sector, etc.) in their own innovations.

The CRE attaches particular importance to the development of smart grids and wishes to ensure that network operators have the resources to carry out their R&D and innovation projects, which are essential to provide an efficient and high-quality service to users of the networks in the process of being modernised, in particular to develop their operating tools for their networks. Network operators must, in return, use these resources efficiently and transparently.

The current R&D and innovation regulatory framework has three components: (i) a trajectory of R&D costs on which operators are not incentivised to save, (ii) the drafting of a detailed annual report to the CRE summarising the R&D actions undertaken and the biannual publication of a reduced version of these reports, and (iii) a *smart grid desk* for electricity network operators.

The objective of this Chapter is, on the one hand, to carry out a first assessment of this framework, including the relevance of the tariff mechanisms in place, the perimeter of the projects covered and the communication of operators on their results, and, on the other hand, to consider how to encourage operators to promote innovation for all market players.

### 3.5.1 Maintaining R&D&I cost coverage arrangements

The latest developments in the prices for access to gas networks have made it possible to generalise a regulatory mechanism that encourages operators to develop R&D&I. Indeed, since the entry into force of tariffs TURPE4 HTB in 2013 and TURPE 4 HTA/BT in 2014, electricity network operators are incentivised to incur R&D expenditure in a predefined envelope. The extension of this mechanism for gas operators took place in 2016 for GRDF and in 2017 for gas GRTs, respectively, in tariffs ATRD5 and ATRT6. Some local gas distribution companies (Entreprises Locales de Distribution - ELD), GreenAlp (formerly GEG), Vialis and Gedia, have benefited from the same regulatory mechanism since 2018 and the introduction of the ATRD5 ELD tariff. With regard to electricity ELDs, only EDF SEI requested R&D trajectories to be included in its tariff, built in 2018.

The mechanism is to set, at the beginning of the tariff period, a trajectory of operating expenses devoted to R&D. At the end of the tariff period, operators shall, in the event that the actual expenditure is less than the set trajectory, return the surplus to users via the CRCP. This provision encourages operators to carry out the projects.

As an illustration, for current tariffs, the average level of R&D operating expenses generally represents less than 1% of the authorised income, with the exception of GRTgaz, which accounts for 1,2% of the authorised income.

**Table 4 - Summary of the main operators' R&D trajectories**

current EUR million	R&D trajectories carried out (2017 summary).	R&D trajectories selected in current tariffs		
	Annual average	Annual average	Total	% of allowable income
GRDF	10.1	10.7	42.8	0.3%
ENEDIS	55.3	56.13	224.5	0.4%
RTE	27.55	35.5	142	0.8%
GRTgaz	22.9	21	84	1.2%
Teréga	1.7	2.15	8.6	0.9%

The feedback on tariffs shows that trajectories, although used in their entirety by operators, are not limiting for the R&D and innovation projects of operators, since some of them go as far as exceeding the trajectory set for them. This is particularly the case of RTE, which exceeded its allotment over the tariff period of TURPE4 by 4%.

With regard to gas, the mechanism is still recent, but all trajectories were reached in 2017. Finally, the recent establishment of an incentive regulation mechanism for R&D for ELDs does not, to date, allow a feedback. The CRE considers, however, that the current mechanism, and the trajectories set for operators, are conducive to the proper implementation of their research and development projects.

The feedback from the operators confirms the positive assessment of the mechanism for regulating R&D, because the latter are satisfied with the "sanctuarisation" of the R&D budget carried out by the scheme. They consider, however, that a revision of these trajectories during the tariff period would make them more responsive in adapting to technological innovations.

For future infrastructure tariffs, CRE plans to maintain the mechanism currently in force, which gives network operators and market participants visibility over the chosen expenditure trajectory, and considerable flexibility for operators to steer their research and development strategy and trajectory. However, in order to provide operators with the necessary flexibility, the CRE questions a possible revision of trajectories after two years.

Question 26: Are you in favour of maintaining an R&D trajectory as currently set? Are you in favour of revising these amounts after two years in the middle of the tariff period?

### 3.5.2 Evolution of *smart grid desks* to enable the industrialization of certain projects

Within the framework of the TURPE 5 HTB and HTA/BT tariffs, a tariff mechanism, known as *smart grids*, has been introduced for electricity network operators dedicated to *smart grid demonstrators*. This is a mechanism to enable RTE and Enedis to carry out projects related to the deployment of *smart grid technologies* on networks. This mechanism gives operators the opportunity to request once a year the integration of the additional costs of operating costs linked to projects under the deployment of *smart grids* to their trajectory. This integration is possible for a project or set of projects with operating costs exceeding EUR 3 million, subject to a favourable cost-benefit analysis of the project.

CRE notes that *smart grids desks* have not been used at this stage by electricity grid operators. The latter consider that the threshold of EUR 3 million is too high to allow the mechanism to be triggered.

For future tariffs, the CRE raises the question of reducing the trigger level of the mechanism. In addition, in order to encourage gas network operators to study *smart grid projects*, the CRE is considering extending the scheme to include gas operators who have expressed their support for it.

Question 27: Are you in favour of such a mechanism in the gas sector?  
Do you have any suggestions for developments that would improve the deployment of *smart grid technologies* by operators?

### 3.5.3 Transparency to improve on R&D&I strategy and on feedback (retours d'expérience - REX)

#### 3.5.3.1 Operator & I R&D strategy

*Ex ante validation* of the operators' R&D&I programmes is based on very general research axes rather than on a detailed programme.

In order to assess the perimeter of the operators' R&D expenditure and to ensure that their research strategy is relevant to the market, the CRE shall consider requesting network operators to consult market participants on the major research themes that they plan to address during the next tariff period.

#### 3.5.3.2 Transparency of R&D&I programmes

In order to enable the CRE to ensure the proper use of the R&D&I envelope allocated to infrastructure operators, the tariff deliberations specify that network operators must submit a report on their R&D&I projects to the CRE each year. These reports shall include, inter alia:

- a description of the projects carried out and the partnerships entered into, with associated costs and results achieved;
- a list of ongoing and future projects with expected results;
- the amounts spent over the past year;
- estimates of expenditure per year until the end of the tariff period;
- the number of full-time equivalent positions associated with R&D programmes;
- the support and subsidies received.

If this report is provided to the CRE in its confidential version, operators shall publish biannual (annual for gas transmission operators) a lighter version of the report, with a view to transparency with other players in the energy market.

These rules allow (i) monitoring of funds committed in this area and (ii) improving the visibility of these projects to network users. However, the reports are in fact heterogeneous and ineffective.

The CRE also considers that feedback from demonstrators funded for all or part of the tariffs should be made more public.

The CRE therefore intends to amend the procedures for publishing the operators' advances on their R&D&I programmes by:

- harmonising and enriching, in particular through standardised progress indicators, the public R&D&I reports in order to give greater visibility to the market. Such reports could, for example, contain a systematic feedback of demonstrators funded by tariffs;
- replacing the report to the CRE with the annual transmission of technical and financial information for all ongoing and completed projects.

Question 28: Do the developments envisaged by the CRE seem to you to be relevant in order to improve the transparency of operators in their R&D and innovation projects?  
Do you have any other suggestions for improving this transparency?

### **3.5.4 Operators must facilitate the innovation of all market players**

It is essential that services provided by infrastructure operators promote innovation for all actors. The aim of the CRE is to encourage infrastructure operators to change their practices in order to make them more favourable to innovation on their system. The CRE therefore wishes to establish tariff instruments to ensure that operators meet market demand.

For this to happen, we must first identify the developments that would be conducive to innovation. The CRE already identifies two main levers to encourage external innovation: the collection and subsequent sharing and publication of data and the evolution of the contractual framework for certain market rules in order to adapt them to the new uses that are emerging.

In order to enable stakeholders to express their views on the expected developments to foster innovation in electricity and gas systems, the CRE would like each operator to organise, in preparation for the development of its tariff, a dialogue on the subject of "the operator at the service of market participants".

As a result of this consultation, it will be necessary to define deadlines and to encourage infrastructure operators, through bonuses/malus integrated with the incentive regulation of quality of service, to achieve the developments identified within a reasonable period of time. The CRE is therefore considering incorporating indicators that enable it to monitor the progress of developments identified as priorities by the market into the incentive regulation of the quality of service. In view of the magnitude of the issues involved in electricity (self-consumption, electric vehicle, storage, data, etc.) and distribution in particular, the CRE will also consult with stakeholders, in the context of the public consultation which it will organise in spring 2019 on quality of service, on developments/requests made in Enedis and which they consider to be priorities for innovation.

Question 29: Are you in favour of the approach envisaged by the CRE to encourage operators to promote innovation among all stakeholders?

### **3.6 A high quality of service to enable innovation and new uses**

Quality of service, understood as the quality of service provided to users but also continuity of supply, is a major concern of network users. Incentive regulation on quality of service is one of the pillars of the regulatory framework, ensuring that economic efficiency does not come at the expense of the services provided by these networks.

Improving incentives for quality of service and supply is a continuous process. The relevance and usefulness of incentives must be regularly questioned to ensure that they are in line with the needs of network users. This is the purpose of this chapter.

### 3.6.1 The importance of maintaining quality of service and supply

One of the main objectives of incentive regulation is to encourage network operators to demonstrate economic efficiency in their activities. However, this quest for efficiency must not be at the expense of the quality of service and supply offered by these operators. One of the roles of CRE is to ensure that network users benefit from a satisfactory level of quality of service and supply at the rate to which they contribute.

The incentive regulatory framework for quality of service and supply is based on a set of indicators to monitor the performance of operators in a number of areas considered relevant for assessing the quality of their services and accompanied, for the most essential to the proper functioning of the market, by an objective to be achieved and an associated financial incentive. This framework was introduced and then evolved gradually over the various tariffs:

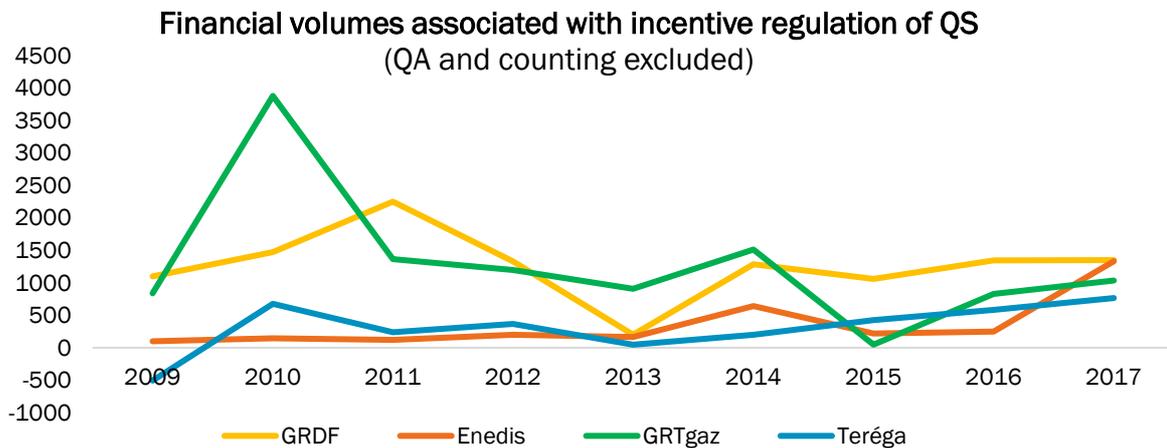
- in 2002 for the transmission of electricity (continuity of supply only);
- in 2008 for the distribution of gas (ATRD3 GRDF), then in 2009 for gas ELDs;
- in 2009 for the transmission of gas (ATRT4.);
- in 2009 for electricity distribution (TURPE 3 HTA-BT Enedis);
- in 2014 for electricity ELDs (monitoring of indicators introduced by TURPE 4 HTA-BT);
- in 2018 for EDF SEI, Gérédis et Electricité de Mayotte (beginning of the incentive in their tariff).

To date, all operators are covered by this incentive mechanism, but RTE is an exception in that the only indicators that are the subject to a financial incentive are the continuity of supply indicators (frequency and duration of out-ages).

### 3.6.2 A necessary alignment of the monitored and incentivised indicators with the needs of network users

On the whole, incentive regulation on quality of service and supply has helped operators to improve their technical performance and relations with network users. The level of quality of service of GRDs for electricity and natural gas and that of natural gas GRTs is good, most of which meet the objectives set by CRE.

Through a gradual adaptation of the objectives set for operators, the framework for the incentive regulation of quality of service has improved their performance on the items deemed necessary for network users.



Returns from some actors show that, despite this good overall performance of infrastructure operators on quality of service indicators, some services are subject to recurring complaints.

In particular, the question of the time delays for electricity connections is very regularly highlighted by consumers themselves but also by the licensing authorities.

The delay for responding to claims is also identified as a possible improvement of Enedis' customer service

Finally, consumer associations have raised a need to improve the information provided prior to the installation of the Linky counter.

This gap requires a reintroduction of the relevance of the monitored indicators, both in terms of thematic issues and in terms of the construction of indicators. For illustrative purposes, the compliance indicator for the date on

which connections are made available by Enedis is based on an "agreed date". A time-based incentive in number of days could be more effective and more responsive to clients' needs.

In order to best meet market expectations and to calibrate appropriate indicators accordingly, CRE is planning to organize a public consultation on the quality of service in the electricity sector in spring 2019 in order to better understand the expectations and challenges for stakeholders. CRE calls on gas operators to organize consultations with market participants.

**Question 30: What, in your view, are the priority themes on which operators should be incentivised?  
Do you share the priority identified by the CRE on connection delays?**

In addition, some market participants have pointed out that quality of service indicators, particularly quality of supply indicators, are viewed at the national level, thus masking local disparities and potentially problematic situations.

The CRE does not consider it appropriate at this stage for the tariff framework to encourage network operators to improve their quality of service locally. On the one hand, the specific geographical characteristics of each of the areas do not allow for the same level of quality of service and supply in any area of the territory. On the other hand, the quality of supply and service is monitored locally within the framework of contractual relations between the granting authority and the distribution network operator.

Nevertheless, CRE considers it useful at this stage to implement one or more statistical indicators on the geographical distribution of the values of certain supply and service quality indicators by region. This could take the form of an average value of indicators per quintile or decile at the departmental or concession level.

**Question 31: Are you in favour of the implementation envisaged by the CRE of one or more statistical indicators on the geographical distribution of certain supply and service quality indicators? Do you have any proposals to make?**

In addition, in a context of strong changes in the energy landscape, network operators face new challenges, and performance indicators for their activities must be consistent with these new requirements.

For example, CRE plans to introduce and/or improve environmental indicators related to operators' activities, such as monitoring greenhouse gas emissions (Gaz à Effet de Serre - GES), an environmental subsidiary indicator or an energy efficiency indicator.

**Question 32: Are you in favour of the proposed introduction of environmental indicators by the CRE? Do you consider that they should be incentivised?**

Finally, compared with other European countries, the French regulatory framework is one of those with a large number of indicators monitored or incentivised:

**Table 5 - Assessment of operators' quality of services indicators**

No of indicators	Enedis	GRDF	RTE	GRTgaz/ Teréga	EDF SEI, EDM and Gérédis	R-GDS	GreenAlp	Sorégies	Other gas ELD
Follow-up	17	13	5	15	7	8	6	7	6
Incentivised including QA	16 2	18 -	2 2	5 -	3 2	7 -	7 -	5 -	5 -
Total	33	31	7	20	10	15	13	12	11

The CRE is not in favour of an increase in the number of indicators and wishes to reduce their number in order to enable them to be managed more effectively. The CRE calls on gas network operators to ensure this objective in the context of the dialogue they will conduct. With regard to electricity, the public consultation which it will organise in spring 2019 will propose the deletion of some indicators.

### **3.6.3 Incentive mechanisms**

Concerning the operating procedures of the current indicators, it should be reminded that, depending on the difference between the performance achieved and the target set at the beginning of the tariff period, operators shall receive a bonus or be liable for a financial malus. Bonuses or malus may be entered in the CRCP or paid directly to suppliers (penalties for not respected planned appointments in particular).

Where the performance of the network operators associated with an indicator is considered stable and satisfactory by the CRE over a sufficient period of time, the indicator in question shall cease to be incentivised but shall continue to be monitored to ensure that the performance is maintained correctly.

With regard to the revision of the indicators and the amount of incentives associated with them, it should be reminded that updates can be made during the tariff period. For both gas and electricity, some indicators are set for the entire tariff period (definition, calculation method and level of incentives), whilst others may be modified during the period. If this device is traditional in gas, it was introduced into electricity on the occasion of TURPE 5. CRE therefore does not forbid to adjust the level of certain indicators in the course of tariffs.

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Question 33: Do you have other proposals or comments on the tariff regulatory framework?

## **4. SUMMARY OF ISSUES**

Question 1: Do you share the overall positive assessment of the tariff framework implemented by the CRE over the last 10 years?

Question 2: Do you share the major issues identified by the CRE for the next generation of tariffs?

Question 3: Do you agree with the CRE that a tariff period of 4 years is appropriate for all tariffs?

Question 4: Are you in favour of the operators publishing indicative tariff forecasts beyond the current tariff period and over 4 rolling years?

Question 5: Are you in favour of the CRCP operating principles envisaged by the CRE?

Question 6: Are you in favour of the principle envisaged by the CRE for the development of the CRCP calculation to coordinate electricity transmission and distribution tariffs?

Question 7: Are you in favour of renewing the incentive regulation mechanism for operating expenses in force for future tariffs?

Question 8: Are you in favour of renewing the mechanism to encourage operators to control their capital expenses in the same way as their operating expenses in an "off-grid" investment perimeter? If so, do you believe that the network management or data availability information systems should be excluded from the "off-grid" perimeter and should be subject to "classic" regulation with automatic inclusion in the BAR of investments made?

Question 9: Are you in favour of maintaining the general principles of operation of the CRCP and risk-sharing between network operators and users?

Question 10: Are you in favour of maintaining CRCP compensation for the losses and profits of network operators due to changes in consumption / subscriptions?

Question 11: Are you in favour of maintaining in the CRCP the capital expenses linked to networks so as not to send an incentive to reduce the volume of short-term investment?

Question 12: Are you in favour of keeping energy expenses/ losses partially at the CRCP in order to encourage network operators to reduce them?

Question 13: What do you think about the perimeter of expenses taken into account in the CRCP?

Question 14: Are you in favour of maintaining the principles governing the current regulatory framework on investment expenditure of the various regulated infrastructure operators?

Question 15: Do you share the CRE's preliminary view that explicit capital remuneration for depreciated assets still in use is not desirable?

Question 16: Do you share the CRE's preliminary view that explicit remuneration for investment grants is not desirable?

Question 17: Are you in favour of changes in the methods for calculating the remuneration of operators' assets envisaged by the CRE, and mainly the differentiation of the rates of remuneration of historical assets and new assets?

Question 18: Are you satisfied with the principle and parameters (sharing rate, incentive ceiling) of the incentive regulation mechanism for unit investment costs introduced by the ATRD 5 and TURPE 5 HTA BT tariff deliberations?

Question 19: Have you any comments on the existing incentive framework and the developments envisaged by the CRE for major transport projects?

Question 20: Do you have comments on the application of incentive regulation to control the costs of large projects to smaller, randomly or discretionary selected projects?

Question 21: What changes in the existing incentive framework for interconnection projects would seem relevant to you?

Question 22: Are you in favour of the definition of stranded costs proposed by the CRE?

Question 23: Are you in favour of the principles proposed by the CRE for the treatment of stranded costs which are already in place in the ATRT tariff?

Question 24: Do you agree with the CRE's analysis that sole uninterrupted study costs should be covered by the tariff?

Question 25: For long-term investments, are you in favour of the CRE's proposal on the remuneration of current fixed assets (CFA)?

Question 26: Are you in favour of maintaining an R&D trajectory as currently set? Are you in favour of revising these amounts after two years?

Question 27: Are you in favour of such a mechanism in the gas sector?

Do you have any suggestions for developments that would improve the deployment of smart grid technologies by operators?

Question 28: Do the developments envisaged by the CRE seem to you to be relevant in order to improve the transparency of operators in their R&D and innovation projects? Do you have any other suggestions for improving this transparency?

Question 29: Are you in favour of the approach envisaged by the CRE to encourage operators to promote innovation among all stakeholders?

Question 30: What, in your view, are the priority themes on which operators should be incentivised? Do you share the priority identified by the CRE on connection delays?

Question 31: Are you in favour of the implementation envisaged by the CRE of one or more statistical indicators on the geographical distribution of certain supply and service quality indicators? Do you have any proposals to make?

Question 32: Are you in favour of the proposed introduction of environmental indicators by the CRE? Do you consider that they should be incentivised?

Question 33: Do you have other proposals or comments on the tariff regulatory framework?