Deliberation of the French Energy Regulatory Commission of 10 March 2016 forming a decision on the equalised tariff for the use of GRDF's public natural gas distribution networks

Present: Philippe de LADOUCETTE, Chairman, Catherine EDWIGE, Hélène GASSIN and Jean-Pierre SOTURA, commissioners.

The current equalised tariff for the use of GRDF's natural gas distribution networks (ATRD4 tariff[1]), came into force on 1 July 2012 in accordance with the deliberation of the French Energy Regulatory Commission (CRE) of 28 February 2012[2]. The standard tariffs for the use of the natural gas distribution networks of local distribution companies (LDCs) entered into force on 1 July 2013 in accordance with CRE's deliberation of 25 April 2013[3]. These tariffs were designed to be applicable for a period of about four years.

Legal framework

Articles L.452-2 and L.452-3 of the French Energy Code define CRE's remit over tariffs. Article L.452-2 states that CRE sets the methods used to establish the tariffs for the use of natural gas networks. Article L.452-3 states that the "*the Energy Regulatory Commission considers tariff changes […] with, as appropriate, amendments to the level and structure of the tariffs that it deems justified in light particularly, of an analysis of operators' accounts and foreseeable changes in operating and investment costs. These considerations [...] may provide for a multiannual management structure for the changes in tariffs as well as appropriate short- or long-term measures to encourage operators to improve their performance related in particular, to the quality of service provided, integration of the internal gas market, the security of supply and productivity efforts".* This article also specifies that the "*Energy Regulatory Commission takes into account the energy policy guidelines indicated by the ministers in charge of the economy and energy. It regularly informs the administrative authority during the tariff establishment phase. It consults energy market players as it sees fit."*

The provisions of Article L.452-1 of the Energy Code states that the tariffs for the use of the public natural gas distribution networks shall be standardised within the service area of each distribution system operator, with the exception of new public distribution networks under concession in accordance with Article L.432-6 of that same code[4].

Tariff work

As part of preparations for establishing its upcoming tariff, known as "ATRD5 tariff", GRDF forwarded to CRE by letter dated 15 May 2015, all of its tariff request elements. GRDF requested, against an unchanged regulatory framework and the same rate of return on capital of 6% in real terms before taxes, to increase the tariff as at 1 July 2016 by 6% and to change the scale of tariffs using a percentage change equal to "inflation + 1.4%" for the years 2017 to 2019.

The operator updated its tariff request at the end of November 2015 and called for, against an unchanged regulatory framework and the same rate of return on capital of 6% in real terms before taxes, an increase in the tariff as at 1 July 2016 by 4.7% and a change in the scale of tariffs using a percentage change equal to "inflation + 1.4%".

[1] ATRD: Third-party access to the distribution network
[2] CRE deliberation of 28 February 2012 deciding on the standard tariff for the use of GRDF's public natural gas distribution networks
[3] CRE deliberation of 25 April 2013 deciding on the standard tariff for the use of public local natural gas distribution companies. The standard tariff for the use of the Sorégies natural gas distribution networks entered into force on 1 July 2014 in accordance with CRE's deliberation of 26 March 2014 and is designed to be applicable for a period of approximately three years.
[4] Non-standard tariffs for the use of public natural gas networks will be addressed in specific deliberations by CRE for each new concession.

After taking into account all of the amounts to be covered by the tariff during the ATRD5 tariff period (more recent re-estimation of the balance of the expenses and revenues clawback account (CRCP) for the year 2015, unpaid bills, etc.), GRDF's request corresponds to a tariff increase as from 1 July 2016 of 11.4%, followed by an annual increase based on inflation.

In accordance with Articles L.452-2 and L.452-3 of the Energy Code which provides the framework for CRE's tariff remit, the present deliberation defines the new equalised ATRD5 tariff for the use of GRDF's public natural gas distribution networks, designed to be applicable for about four years as from 1 July 2016.

To set this tariff, CRE ran a public consultation from 18 November to 18 December 2015, which gathered 137 contributions from suppliers, a consumer association, infrastructure operators, energy distribution authorities, professional organisations and other participants. A great majority of contributors were in favour of the guidelines proposed by CRE. Answers not specifically requested by authors to remain confidential shall be published along with the present deliberation. CRE held a round table to which it invited the suppliers and the consumer association that took part in the public consultation. It also had discussions with GRDF and its shareholder.

CRE carried out in-depth analyses of the projected costs presented by GRDF. It published the following reports which it used to define GRDF's ATRD5 tariff:

- an external international report on the incentive-based regulatory mechanisms of electricity and natural gas operators in Europe[5];
- an external report on the weighted average cost of capital (WACC) for electricity and natural gas infrastructure in France as well as the external audit of GRDF's WACC request for the ATRD5 period[6];
- an external audit of GRDF's operating expenses for the 2012-2019 period and an international comparison of the operating expenses of natural gas distribution system operators (DSOs) in Europe[7];
- an internal international comparison of natural gas distribution tariffs[8].

Lastly, in accordance with the provisions of Article L. L.452-3 of the French Energy Code, CRE took into account the energy policy guidelines forwarded by the Minister of Ecology, Sustainable Development and Energy by letter dated 10 February 2016. These guidelines cover the challenges to the necessary control of costs, which must occur without affecting in particular the safety of natural gas users, the conversion and adaptation of the natural gas network in the north of France (Tulipe project), GRDF's support to local authorities and the implementation of a policy promoting access to natural gas, within the framework of the public service contract signed between the State and GRDF for the 2015-2018 period. Lastly, these guidelines highlight the importance of biomethane injection objectives defined as part of the multiannual energy schedule currently being prepared. The guidelines can be consulted on CRE's website.

Main developments

On the basis of these elements, CRE decided to strengthen the incentive basis of the regulatory tariff framework, while maintaining the main principles currently in effect:

- a multiannual tariff designed to be applicable for about four years as from 1 July 2016, with a change being made as at 1 July of each year to the scale of tariffs according to predefined rules;
- an incentive to control the operator's operating expenses: the operator shall keep all of the gains or losses possibly made compared to the forecast trajectory;
- an incentive to control investment expenses, with incentive-based regulation for the unit cost of investments in the networks and incentive-based regulation for "non-network" capital expenses;
- incentives to improve the quality of the service and to increase the number of customers connected to the gas networks;
- incentive to make efficient R&D expenses;

[5] External international comparison of the incentive-based regulatory mechanisms of electricity and natural gas operators in Europe

[6] External report on the weighted average cost of capital (WACC) for electricity and natural gas infrastructure in France as well as external audit of GRDF's WACC request for the ATRD5 period

[7] External audit of GRDF's operating expenses for the 2012-2019 period

[8] Comparative assessment of natural gas distribution tariffs in Europe

- an expenses and revenues clawback account (CRCP) to correct, for certain items defined beforehand, any differences between real expenses and revenues and the projected expenses and revenues taken into account to establish GRDF's tariff;
- a review clause that can be activated after the tariff has been in effect for two years, in order to examine any consequences of legislative or regulatory changes or court rulings that might have significant effects on the operator's operating expenses for the years 2018 and 2019.

This regulatory framework will give all market players good visibility over changes in GRDF's tariff between 2016 and 2019, as they so highlighted in the public consultation. It gives GRDF the incentive to improve its efficiency, from the perspective of both cost control and quality of service rendered to its network users. It also protects it against risks, related in particular to inflation and variable weather patterns affecting the volumes of gas distributed, and any consequences of regulatory changes over the last two years of the tariff period.

The ATRD5 tariff defined by CRE shall enter into force as at 1 July 2016. It sets out a +2.76% increase (current euros) at that date compared to the current tariff. For the 2017-2019 period, CRE has adopted an annual change in GRDF's scale of tariffs based on a percentage change equal to "inflation - 0.8%".

To establish this tariff, the reference used by CRE was the level of GRDF's expenses incurred during the ATRD4 tariff period, in order to pass on to customers the productivity gains made during that period. As regards this reference, CRE took into account:

- GRDF's requests concerning investment trajectories, staff expenses and safety expenses;
- the cost of new projects of major importance for GRDF such as the rollout of the Gazpar smart meters and the transformation of the common service shared with ERDF;
- the new weather correction model and the new climate baseline used to project the quantities of gas distributed between 2016 and 2019 requested by GRDF.

It also took into account the costs identified by GRDF in connection with the evolution of its DSO activity, against the energy transition, such as costs related to the provision of data, the development of smart networks and the boom in biomethane injections into the natural gas networks.

CRE also included the financial consequences of the decision by the committee for dispute settlement and sanctions (CoRDiS) of 19 September 2014[9], according to which GRDF must bear the costs of the transmission portion of customers' unpaid bills.

The differences between this tariff and GRDF's request are mostly related to the following parameters:

- the weighted average cost of capital, set at 5.0% in real terms before tax;
- the revision by CRE of the assumptions used by GRDF for certain expense items;
- additional productivity efforts compared to those initially proposed by GRDF and corresponding to those expected of an efficient operator, representing an average 0.4% per year for the operator's operating expenses.

Taking into account the proportion of the final natural gas retail price that the tariff for supply over distribution networks represents, and the transportation portion of unpaid bills no longer borne by the historical supplier but by GRDF, this 2.76% increase would lead to, all other things being equal, a 0.6% increase as at 1 July 2016, excluding taxes, in the regulated tariff for the sale of gas for public distribution for an average domestic customer using gas for heating (customer on the B1 tariff in the Paris area).

As regards the tariff structure, the current principles are retained for the ATRD5 tariff. However, looking ahead to the ATRD6 tariffs, CRE will organise, as from the second quarter of 2016, work on the tariff structure, which will be conducted with the DSOs and in consultation with market participants. This work will serve to, for example, better take into account in the tariff structure developments in customer behaviour in order to encourage those customers to control their energy demand and to limit their consumption during peak periods.

The Higher Energy Council, consulted by CRE on the draft tariff decision, rendered its opinion on 1 March 2016.

[9] Decision by CRE's committee for dispute settlement and sanctions of 19 September 2014 on the dispute between POWEO DIRECT ENERGIE and GRDF related to the transportation contract for the natural gas distribution network

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I. METHODOLOGY

A. General principles

In order to establish the tariff for the use of GRDF's public natural gas distribution networks, CRE first defines a projected authorised income for the DSO.
CRE also defines a regulatory framework aimed on the one hand at limiting for certain expenses or predefined income the financial risk for the DSO and/or users through an expenses and revenues clawback account (CRCP), and on the other hand, at encouraging the DSO to improve its performance through the implementation of incentive-based mechanisms.

The DSO's projected authorised income is broken down among users in the form of tariff options, comprising different tariff charges; all of these charges make up the "tariff structure".

Taking into account all of these components serves to establish tariffs at their date of entry into force and the way in which they are changed each year.

Definition of the projected authorised income

CRE defines the DSO's projected authorised income for the period considered based on the business plan[10] forwarded by the operator.

This projected authorised income is comprised of standard capital expenditure and net operating expenses:

$$RA_p = CNE_p + CCN_p + A$$

Where:

- RA_p: projected authorised income for the period;
- CNE_p: projected net operating expenses for the period;
- CCN_p: projected standard capital expenditure for the period;
- A: CRCP balance to be cleared under the previous tariff period.

Operating expenses

Net operating expenses include running costs (mainly comprising external purchases, staff costs and taxes) minus non-tariff-related income (mainly composed of income related to the ancillary services included in the DSO's service catalogue).

The level of operating expenses used is determined based on all of the costs necessary for the system operator's activity as long as, pursuant to Article L.452-1 of the French Energy Code, these costs correspond to those of an efficient system operator. All of the projected data in the business plan communicated by the operator is analysed thoroughly and revised where necessary.

Standard capital expenditure

The projected standard capital expenditure includes the return on and depreciation of the regulated asset base (RAB). The RAB is determined based on the revalued net value of fixed assets, minus subsidies and contributions received from third parties.

$$CCN_p = \text{Forecast depreciation} + \text{forecast RAB} \times \text{WACC}$$

The method used to set the rate of return on assets is based on the weighted average cost of capital (WACC), for a standard financial structure. The operator's return must in fact enable it to service the interest payments on its borrowing, and generate a yield on shareholders' equity comparable to that which it could obtain for investments elsewhere entailing a comparable level of risk. This cost of equity is estimated using the capital asset pricing model (CAPM).

In addition, CRE commissioned a comparative analysis from an external provider of the methodology for setting the rate of return on assets used by European system operators. This analysis was made public for the public consultation of 18 November 2015 on the upcoming tariff for the use of GRDF's public natural gas distribution networks.

[10] In the present case, GRDF's business plan related to the years 2016 to 2019.

Valuing and updating the regulated asset base (RAB)

The valuation of the assets used by the operator to provide the natural gas distribution service includes both historic assets and investment forecasts submitted by the operator.

The treatment of assets when determining the RAB varies depending on whether the assets became operational before or as from 1 January 2003.

Initial RAB value as at 31 December 2002:

Assets employed before 31 December 2002 are valued by means of adjusting the historical cost for inflation using the following method:

- historic gross asset values are restated for the revaluation variances permitted in 1976, subsidies received in respect of carrying out these investments, and contributions received from the beneficiaries of these investments;
- these restated gross values are adjusted as at 31 December 2002 by applying the "market-sector GDP" price index;
- these adjusted gross values are then depreciated using the straight-line method on the basis of the economic lifespan of the various asset categories (see table below). Assets are deemed to have become operational on 1 July of the relevant year;
- land is included using its non-depreciated adjusted historic value.

Asset category	Standard lifespan in years
Gas pipes and connections	50 or 45[11]
Depressurisation stations	40
Compression / metering	20
Other technical equipment	10
Buildings	30

Updating the RAB value:

Assets that became operational between 1 January 2003 and 31 December 2014 are included in the RAB at their gross value. Planned investments from 1 January 2015 are included at their gross forecast value as submitted by GRDF.

For all assets, financial contributions from third parties are treated as they are in the accounts:

- when third-party contributions are recorded as liabilities by the operator, offsetting the value of facilities recorded as assets, they are deducted from the value of assets included in the RAB;
- when third-party contributions are recorded as operating income by the operator, the assets are included in the RAB at their total value, and the third-party contributions are deducted from the operating expenses to be covered by the tariff.

The nominal date on which assets enter the inventory has been set at 1 July each year, and they are removed on 30 June.

Once assets are included in the RAB, their value is updated using the following method:

- assets are revalued on 1 January each year using the rate of inflation for the period July to July. The index used to update values is the INSEE (French national statistics office) index for consumer prices excluding tobacco products, for the whole of France;
- assets are depreciated using the straight-line method on the basis of their economic lifetime. The lifetimes used for asset depreciation after 31 December 2002 are the same as those used to revalue

[11] Assets are depreciated using the straight-line method on the basis of their economic lifetime. The lifetimes used for depreciation of assets commissioned after 31 December 2002 are identical to those used to revalue assets brought into operational use prior to that date, with the exception of gas pipes and connections, for which a lifetime of 45 years has been adopted.

assets brought into operational use prior to that date, with the exception of gas pipes and connections, for which a lifetime of 45 years has been adopted.

Assets scrapped before the end of their economic lifetime are removed from the RAB and no depreciation or financial return is included for them.

Tariff regulatory framework

The DSO's business is structured by different mechanisms that make up the "tariff regulatory framework".

First, the provisions of the tariff regulatory framework enable the projected authorised income to be adjusted for inflation in order to protect the operator from inflation-related risks to which its expenses are exposed.

Second, the provisions of the tariff framework enable correction, a posteriori, of the authorised income through the CRCP, which, for predefined items, takes into account in particular the differences between forecast income and expenditure and the actual figures.

Lastly, in order to encourage the operator to efficiently manage the systems it operates, CRE has implemented incentive mechanisms. These provisions concern the operator's different fields of activity: control of operating expenses, control of investment expenses, maintaining or improving the quality of service provided to system users, increase in the number of customers connected to the gas networks as well as improving the efficiency of research and development expenses. Some of these provisions are backed by financial incentives (in the form of bonuses or penalties) which, in most cases, are added to or deducted from the DSO's authorised income during the tariff period and are taken into account in the CRCP. As regards service quality, these mechanisms may include direct compensation given to users by the DSO.

As from the year it enters into effect, the tariff is changed on 1 July each year, by applying the following percentage change to the current tariff:

$$Z = CPI - X + k$$

Where:

- Z: is the change in the tariff as at 1 July, expressed as a percentage;
- CPI: is the average annual change recorded over the previous calendar year in the consumer price index, excluding tobacco products, as calculated by INSEE for all households across all of France (INSEE reference No. 641194);
- X: is the annual change in the tariff, as a percentage;
- k: is the change in the tariff, as a percentage, arising once the CRCP balance is cleared. The value k cannot by itself result in an increase or reduction of over 2% in the tariffs in force. The annual change in GRDF's tariffs will therefore be in the range (CPI – X – 2%) to (CPI – X + 2%).

Tariff structure

The tariff structure is comprised of four main tariff options: three options T1, T2, T3 each comprising a subscription and a charge proportional to the volumes of gas delivered, and a T4 option comprising a subscription, a charge proportional to the contracted daily capacity, and a charge proportional to the volumes of gas delivered. Large customers installed near the gas transmission network and that are already supplied by the distribution networks enjoy a "proximity" tariff. Customers in an apartment block or group of housing units without individual meters but where there is a communal meter are billed on the basis of the tariff charge of option T1. For other customers without an individual meter, a fixed-rate tariff is applied.

B. Incentive-based regulation framework for the ATRD5 tariff

Article L.452-3 of the French Energy Code states that CRE's deliberations on the tariffs for the use of natural gas transmission networks "*[...] may provide for a multiannual management structure for the changes in tariffs as well as appropriate short- or long-term incentive measures to encourage operators to improve their performance particularly as regards the quality of service provided […] and productivity efforts*".

In accordance with these provisions, the present tariff decision provides for the continuation of the general principles governing the regulatory framework of the ATRD4 tariff encouraging GRDF to become more efficient, from both the cost control and service quality perspective. Nevertheless, the existing framework is being changed based on the feedback from the current tariff and the external assessment conducted for CRE on incentive-based regulation for electricity and gas infrastructure in Europe.

This new framework is based on the following principles:

- a multiannual tariff intended to apply for about four years as from 1 July 2016, with a change being made as at 1 July of each year to the tariff according to predefined rules;
- an incentive for the operator to control its operating expenses: the operator shall keep all of the additional productivity gains and losses that may be generated;
- an incentive to control investment expenses, with incentive-based regulation for the unit cost of investments in the networks and incentive-based regulation for "non-network" capital expenses;
- incentives to improve the quality of service, increase the number of customers connected to the gas networks and improve the efficiency of research and development spending;
- an expenses and revenues clawback account (CRCP) to correct, for certain items identified in advance, any variances between actual expenses and revenues and the forecast expenses and revenues used to establish GRDF's tariff;
- a review clause that can be triggered after the tariff has been in effect for two years, in order to examine any consequences of legislative or regulatory changes or court rulings that could have significant effects on the operator's operating expenses for the years 2018 and 2019.

This regulatory framework gives all market players good visibility over changes in GRDF's tariff between 2016 and 2019. It also encourages GRDF to improve its efficiency while protecting it against risks, related in particular to inflation and variable weather patterns which might influence the volume of gas distributed, and any consequences of regulatory changes during 2018 and 2019.

A great majority of contributors were in favour of CRE's course of action pertaining to the incentive-based regulation framework for the ATRD5 tariff.

1. Incentive-based regulation for operating expenses and investment expenditure

In preparation of the present tariff, CRE analysed possible areas for improvement in the regulatory framework, so as to better encourage GRDF to control its costs and carry out its investments.

In support of this analysis, an external consultant was appointed to produce a report on incentive-based regulatory mechanisms for electricity and natural gas system operators in Europe. The report focused in particular on regulation of operating expenses and investment costs. It was published at the same time as the public consultation ran by CRE at the end of 2015. On this occasion, most participants were in favour of maintaining the incentive to control operating expenses and strengthening the incentive to control investment expenditure.

1.1. Net operating expenses

In order to maintain the incentive to control operating expenses introduced by the ATRD3 tariff and reinforced by the ATRD4 tariff, as well as the visibility over tariff changes, the current mechanism is retained.

Consequently, the trajectory of the DSOs' net operating expenses is defined over the 2016-2019 period. It includes an additional productivity target compared to the trajectory initially proposed by GRDF and corresponding to that of an efficient operator.

The additional productivity gains that could be made by GRDF over and above the productivity target set by the ATRD5 target will be kept entirely by the operator, as for the ATRD4 tariff. Likewise, any extra costs that may be incurred will be borne entirely by the operator.

1.2. Investment expenditure

Under the ATRD4 tariff, the differences between the forecast and actual trajectories for capital expenditure are fully covered through the CRCP. The incentive to improve investment efficiency (control of costs and timeframes) is therefore limited. In addition, the incentive mechanism for the control of investment costs implemented by the ATRD4 tariff showed room for improvement. The goal to control investment expenses was reached since, for the envelope concerned, savings of about €88 M were made compared to the forecast trajectory, and the investments needed for the operation and safety of the system were made. However, for the year 2014, the quantitative indicators submitted by GRDF within the framework provided for by the ATRD4 tariff did not suffice to ensure that these savings were not detrimental to the achievement of

the planned volume of investments.

Lastly, GRDF's operating expenses do not fall within the scope of the CRCP (with the exception of those related to losses and various discrepancies) and are therefore accompanied by strong incentives. This disparity in regulatory frameworks could distort the operator's choices between solutions involving investments and others involving operating expenses when they are substitutable.

CRE maintains the general principle of full coverage through the CRCP of differences in projected and actual capital expenditure trajectories. CRE however has decided to develop the incentive mechanism related to GRDF's investment expenses for the ATRD5 tariff, by implementing two separate mechanisms covering, on the one hand, the unit costs of certain investments in the networks and on the other hand, certain "non-network" investments.

a) Incentive-based regulation of unit costs of investments in the networks

According to the analysis conducted by an external consultant for CRE, several European regulators have already implemented a mechanism to regulate unit investment costs in the networks.

Most participants that answered the public consultation were in favour of such a mechanism, according to the terms and conditions proposed by CRE.

The present decision implements an incentive-based mechanism for the unit costs of investments in the networks in order to ensure that GRDF optimises its costs of investments in the networks carried out under its management (more specifically the investments related to the connection of new customers and moving and adapting infrastructure) without compromising the achievement of works needed for the operation and safety of its network.

This mechanism concerns almost all of the fixed assets of GRDF's networks for the ATRD5 period. Fixed "network" assets receiving incentives (€419.3 M) represent approximately 91% of fixed assets brought into service concerning new customer connections (€203.6 M in 2014) and moving and adapting structures (€258.9 M in 2014). On the basis of the forecast trajectory for GRDF's investments over the ATRD5 tariff period, the amount of fixed "network" assets to which incentives may be applied is an average €510 M per year for the same period.

The mechanism is based on the definition of a reference cost model for infrastructure put into service by GRDF, taking into account their technical features and developing trends in costs over time.

For each year of the ATRD5 period, the application of this mechanism consists in assessing the difference between the total cost of infrastructure put into service and the total theoretical cost of that same infrastructure, calculated using the reference unit cost model applied to the actual level of investment.

This difference, positive or negative, reflects the operator's efficiency as concerns the actual level of investment made. It will be shared between the operator and network users, via an incentive (bonus or penalty) through the CRCP equal to 20% of this difference. This mechanism therefore encourages GRDF to control its unit investment costs, without affecting the level of investments made. This annual incentive is limited to +/- €9 M.

The investments concerned are included in GRDF's regulated asset base (RAB) at their real value, subject to inspections CRE may perform into the efficient and careful nature of the costs incurred. The capital expenditure related to these investments therefore remains covered on the basis of their actual value.

b) Incentive-based regulation of "non-network" capital expenses

The present decision introduces a mechanism encouraging GRDF to control its capital expenses similar to its operating expenses covering a "non-network" investment scope including assets such as real estate, vehicles and IT systems. Since these expense items are intrinsically likely to give rise to trade-offs between investment and operating expenses, the mechanism retained encourages the operator to generally optimise all of its expenses in the interest of gas customers.

CRE is not including new IT system projects in this mechanism. It is desirable for GRDF to maintain its capacity to meet market needs that would require major developments in IT systems during the tariff period and for which the costs and timeframes are hard to predict. Therefore, the capital expenses related to the "*Reconstruction des SI*"(rebuilding IT) project and the "*SI transformant*" (transforming IT)[12] project will continue to be fully covered through the CRCP mechanism.

All suppliers that answered the public consultation are in favour of the implementation of such a mechanism. However, most infrastructure operators consider that this mechanism is complex.

It consists in defining for the ATRD5 tariff period the trajectory of these capital expenses, and not taking into account the differences between the forecast and actual trajectory through the CRCP. The gains (or losses) that may be made are therefore fully maintained (or borne) by the operator during the tariff period.

Throughout the tariff period, and for these asset categories, capital expenses will be calculated taking projections into account and not actual values. However, the calculation will take into account, through the CRCP, actual inflation, as done for all capital expenses.

For the following tariff periods, actual values will be taken into account, so that the mechanism can be used to share the gains or additional costs with users.

At the end of the tariff period, CRE shall analyse the commissioning trajectories of the different investments concerned in order to ensure that any gains during the tariff period do not lead to an increase in expenses for the following tariff periods.

The amount of capital expenses concerned by this mechanism and which are therefore backed by incentives is approximately €115 M per year.

€M current euros	**2016**	**2017**	**2018**	**2019**
Standard "non-network" capital expenses	108.4	117.2	118.3	118.6

2. The expenses and revenues clawback account (CRCP)

The tariffs are calculated on the basis of estimates made for the tariff validity period regarding expenditure, volumes of gas supplied and the number of end customers served. A mechanism for subsequent corrections, the CRCP, was introduced by the ATRD3 tariff to take account of variances between the actual expense and revenue figures recorded and the forecast expense and revenue figures for certain somewhat unpredictable accounts items identified in advance.

The CRCP is funded annually by all or some of the variances in expenses or revenues recorded against these predefined account items. The clearing of the CRCP balance occurs automatically on the 1 July every year by means of a reduction or increase in the income to be recovered through the tariffs, limited to an absolute value of 2%. To ensure the financial neutrality of the mechanism, an interest rate shall be applied to the account balance, on the basis of an assumed nominal risk-free rate of 2.8% for the ATRD5 tariff period.

A great majority of participants were in favour of the elements proposed by CRE in the public consultation.

CRE has decided to retain the existing CRCP mechanism, while adjusting its calculation methods and the scope of certain expense and revenue account items it covers. The CRCP items for the ATRD5 tariff are as follows:

- income received by GRDF from tariff charges proportional to the volumes of gas supplied over the distribution network, 100% covered;
- capital expenses borne by GRDF, 100% covered, with the exception of those that are concerned by the incentive-based regulatory framework for "non-network" capital expenses, and for which only the inflation difference is taken into account;
- expenses related to losses and various discrepancies: the annual reference trajectory shall be reviewed ex post and differences between this new reference amount and GRDF's actual expenses shall be 70% covered (see paragraph I. B. 3);

[12] The "*SI Reconstruction*" project corresponds to the development of GRDF's IT systems to replace the historical systems (Disco and Pictrel) and to take into account the reorganisation of the common service shared with ERDF. The "*SI Transformant*" project corresponds to the adjustments needed for opening services and IT licences to competition, which is currently entrusted to GDF SUEZ IT.

- penalties received by GRDF when customers under options T4 and TP exceed contracted capacities, 100% paid back in, so as to ensure that the penalty system is financially neutral for GRDF;
- the financial incentives generated by the incentive-based regulation of quality of service mechanism, for all relevant indicators, to make possible the paying of penalties to network users in the event that the set quality of service level is not achieved, or the payment to GRDF of bonuses when targets are exceeded;
- financial incentives generated by the incentive-based regulation for unit costs of investment (see paragraph I. B. 1. 2. a);
- financial incentives related to the "Gazpar" smart metering project, defined by CRE's decision of 17 July 2014 concerning the incentive-based regulation framework for GRDF's smart metering system[13];
- changes to GRDF's expenses generated by the transportation portion of unpaid bills as from 2016 on the one hand, and for the period prior to 31 December 2015 excluding the regulated sale tariff on the other hand, 100% covered (see paragraph II. A. 4);
- the estimated costs of the "Tulipe" project not included in the forecast ATRD5 trajectories, at the request of GRDF and on the basis of the results of the technical and economic study that will be conducted by CRE in compliance with Article L. 432-13 of the Energy Code. The estimated costs taken into account in the CRCP, will be defined within the framework of a deliberation by CRE to determine the corresponding reference amounts (see paragraph II. A. 2. 2. i);
- income received by GRDF for third-party participation, income from ancillary services received for direct delivery contracts and income generated by other recurring services billed to suppliers for clients concerned (e.g. meter rentals), 100% covered. The corresponding income is in fact rather considerable, the volumes are hard to predict and a major portion of the corresponding costs is generated by investment costs covered through the CRCP;
- income received by GRDF for other catalogue services in the event of changes in the price of these services over the tariff period, in order to neutralise the effect of such a price change on GRDF's income, when this change is different from that resulting from annual indexing formulae stated in the service catalogue.

The accounting data presented by GRDF shall be used as a basis for the expenses and revenues taken into account in the CRCP, when possible.

The method for calculating the CRCP balance has been simplified and is consistent with a tariff balancing by calendar year.

Where appropriate, use of the CRCP will be combined with effective and careful inspection of the costs incurred. Such inspections may in particular focus on the investments undertaken by GRDF and the expenses related to losses and various discrepancies.

The financial consequence of audits conducted by CRE will be included in the CRCP.

3. Incentive-based regulation of costs related to losses and various discrepancies

Losses and various discrepancies equate to the difference between quantities delivered by transmission system operators (TSOs) entering the distribution system and quantities actually billed to system customers. These arise from:

- technical losses related to leaks, filling new networks, purging facilities before servicing or repair work and damage caused to facilities during engineering work;
- the margin of inaccuracy in gas metering at transmission stations at the interface with the distribution system and customer delivery points, together with further inaccuracies related in particular to the conversion of the volumes read on meters into energy. The conversion of the volume of gas (in m^3) into energy (in kWh) causes differences between the quantities of gas measured at transport/distribution interface points (PITDs) and the quantities taken into account when the meters of end customers are read;

[13] CRE decision of 17 July 2014 concerning the incentive-based regulatory framework for GRDF's smart metering system

- non-technical losses such as fraud, discrepancies between the meter figures recorded when one customer leaves the premises and a new customer arrives, reporting errors, errors in billing files, etc.

To offset the losses and various discrepancies, GRDF purchases gas in the wholesale market, corresponding to a theoretical loss rate. This rate was set for the ATRD4 tariff at 0.73% of the total quantity of gas distributed. CRE has maintained this rate as the starting point for the ATRD5 tariff and decreases it during the tariff period following the forecast pace of "Gazpar" smart meter rollout. The technical and economic study conducted by CRE in 2013 highlighted that the rollout of smart meters will in fact reduce losses and various discrepancies. The volume of losses and various discrepancies avoided by the end of rollout is estimated at 350 GWh/year. The theoretical loss rate, the forecast volume of losses and various discrepancies and forecast gas purchase costs retained for the 2016-2019 period are as follows:

	2016	**2017**	**2018**	**2019**
Theoretical loss rate (as a % of the quantity of gas distributed)	0.73 %	0.72 %	0.71 %	0.69 %
Forecast volume of losses and various discrepancies (GWh)	2,094 GWh	2,070 GWh	2,024 GWh	1,943 GWh
Forecast costs for gas purchases covered by the ATRD5 tariff (current €M)	€53.9 M	€41.4 M	€36.1 M	€34.0 M

The losses and various discrepancies therefore break down into the following expenses:

- gas purchase costs which are estimated for the tariff period on the same basis as all operating expenses. Forecast volumes are valued based on forecast prices taking into account the forward prices known at the time the tariff is set. For the years 2016 and 2017, they take into account the volumes already purchased by GRDF within the framework of its gas purchase policy through the use of tendering. These costs also include the cost of gas transportation from the marketplace (PEG) to the PITD. Forecast costs for gas purchases covered by the ATRD5 tariff are an average €41.3 M (current euros) per year over the 2016-2019 period;
- the expenses and income related to the supplier distribution variance accounts, which are initially assumed at zero;
- the expenses and income related to the inter-operator account between GRDF and the TSOs, which serves to settle metering differences at the PITDs. These expenses are also forecast at zero.

Certain factors over which GRDF has no control may vary significantly in comparison to forecasts: on the one hand, the quantities distributed based on weather conditions, and on the other hand, the prices in the wholesale markets. For this reason, the differences arising from losses and various discrepancies have been taken into account in the CRCP since the ATRD3 tariff. However, in order to encourage GRDF to control its costs, the difference between its forecast expenses and its actual expenses are partly covered in the CRCP.

The present decision introduces an annual ex post revision of the amount of forecast expenses for losses and various discrepancies initially covered by the ATRD5 tariff. This new reference amount takes into account the quantities of gas actually distributed and the market prices recorded for a predefined reference basket of goods. The difference between this new reference annual amount and the expenses initially covered by the tariff is fully covered through the CRCP.

This annual revision was warmly welcomed by the participants that responded to the public consultation, since it takes into account variations in weather conditions and the price of gas and enables the authorised income to be adjusted accordingly.

Therefore, GRDF will not have any gains or losses resulting from variations in factors over which it has not control. In return, and since the operator has several tools to control its overall costs related to losses and various discrepancies, the coverage of the difference between the new reference amount and actual costs through the CRCP will drop from 80% to 70%.

4. Incentive-based regulation for the increase in the number of customers connected to the gas systems

Since 2008, GRDF has endeavoured to counter the drop recorded in the number of natural gas distribution customers. The objectives concerning new residences and new business and industrial customers set by the ATRD4 tariff were reached.

However, feedback shows that the incentive-based regulation framework set up by the ATRD4 tariff can be

improved. GRDF had no incentive to exceed the objectives set, since there was no bonus for doing so. In addition, over the same period, the number of customers abandoning the use of gas remained high. The regulatory framework of the ATRD4 tariff did not include any incentives for GRDF regarding the continued use of the gas networks by customers already connected to them.

During the public consultation, most players were in favour of maintaining regulation encouraging GRDF to increase the number of customers connected to the gas systems.

The present tariff decision introduces a new incentive-based regulatory framework to increase the number of customers connected to the gas distribution systems. This framework takes into account the economic gains for the distribution system management activity and ultimately aims to lower the unit tariff for the benefit of customers.

The implementation of this incentive-based regulation takes into account the energy policy guidelines forwarded by the minister of ecology, sustainable development and energy, by letter dated 10 February 2016, which state that GRDF's commitment to assist local authorities shall be reflected in particular, by the implementation of a policy promoting access to natural gas, in compliance with the public service contract signed with the State for the 2015-2018 period.

This incentive-based regulation aims, on the one hand, to promote the connection of new customers, and on the other hand, to encourage customers already connected to the gas networks to continue to use them. The marginal costs of the distribution networks are lower than the average costs per customer. Therefore, the more active customers there are (meaning those with a supply contract) connected to the distribution networks, the lower the average costs per customer. Therefore, the connection of additional customers lowers the tariff.

The connection of a new customer generates income and costs for the system. An additional customer brings the following net income:

Net income =
transmission income (contracts + portion proportional to consumption + capacity booking)
+ income related to connection (third-party contributions)
- marginal costs (operating expenses + capital expenses)

During the tariff period during which the new customer is connected, this net income is shared between GRDF and the community of other customers as follows:

- "portion paid back to customers": the income related to quantities transmitted (portion proportional to consumption), capital expenses and income related to the connection to the networks (third-party contributions) are passed on in the tariff paid by customers through the CRCP;
- "portion kept by GRDF": the income related to contracts and capacity subscriptions and operating expenses are kept by GRDF and do not change the tariff during the tariff period.

Therefore, the portion of net income kept by GRDF represents a natural incentive to connect new customers, as several contributors to the public consultation highlighted. However, GRDF's interest in increasing the number of customers connected in order to economically optimise the use of the network is limited by the duration of the tariff period which is roughly four years. When a new tariff is defined, the economic advantage linked to these additional customers is no longer beneficial to GRDF and is fully returned to all of the customers through the new tariff level.

The portion of net income kept by GRDF when new customers are connected is therefore not enough to encourage it to implement efficient actions to benefit all customers, since such actions also require that the DSO incur additional costs which are not taken into account in the expenses to be covered by the ATRD5 tariff.

The present tariff decision therefore introduces regulation encouraging GRDF to increase the number of customers connected to the distribution networks, through the granting of a bonus per additional customer compared to the forecast number of customers for 2019 if no action is undertaken by GRDF. Within the framework of this incentive-based regulation, the number of customers is measured by the number of active delivery points, i.e. those with a supply contract.

CRE has defined unit bonuses for two customer categories, on the basis of a cost/benefit study, according to the net income generated by each additional active delivery point connected. The two categories are customers under tariff options T1 or T2 or "lower portfolio" and customers with tariff options T3 or T4 or "upper portfolio"[14]. These unit bonuses are as follows:

- €100 per active delivery point with tariff options T1 or T2 ("lower portfolio");
- €3,000 per active delivery point with tariff options T3 or T4 ("upper portfolio").

The calculation of the total bonus to be granted to GRDF will be done at the end of the ATRD5 tariff period, based on the annual average in 2019 of the number of active delivery points for each of the two categories stated above.

The forecast number of customers for the 2016-2019 period used to define the ATRD5 tariff includes additional connected customer goals[15]. The authorised income initially covered by the ATRD5 tariff therefore includes a sum of €182.5 M for the 2016-2019 period (i.e. an average €45.6 M (current euros) per year) which breaks down as follows:

- €105.3 M (i.e. €26.3 M per year) as part of a natural incentive (contracts + capacity subscriptions - operating expenses);
- €77.3 M (i.e. €19.3 M per year) as a forecast bonus.

This amount corresponds to the achievement of the following goals:

GRDF's development goals for the 2016-2019 period (in Delivery Points)	
"lower portfolio" T1 + T2	609,794
"upper portfolio" T3 + T4	5,432
TOTAL	615,226

In order to take into account the actual result reached in 2019, the difference between the total bonus and the forecast bonus will be taken into account through the CRCP balance at the end of the tariff period. As such:

- if the goals are exceeded and the number of customers connected to the networks is higher than estimated, GRDF will receive a bonus in addition to the forecast bonus;
- however, if the goals are not reached and the number of customers connected to the networks is lower than forecast, GRDF will be penalised and will have to return the forecast bonus in the amount of the difference observed.

Forecasts of the number of customers take into account the switching of tariff options which can occur between 2015 and 2019. It is possible that some customers may switch from tariff option T2 to a T3 tariff option, or vice versa. The corresponding unit bonus amounts are significantly different.

If the actual number of tariff option switches is different to forecasts, the total bonus amount will be affected, including when these switches have no impact on the incentive-based regulation goals, i.e. to promote the connection of new customers and encourage customers already connected to the gas networks to continue to use them. This is the case in particular of switches resulting from energy savings made by the customer, or those made following tariff optimisation, with no change in consumption.

At the end of the tariff period, GRDF will submit to CRE an analysis of these switches, the reasons for them and the differences compared to forecasts. On the basis of that analysis, CRE shall decide to neutralise in the calculation of the total bonus either all or part of the effects of these tariff option switches.

The regulatory framework so implemented shall encourage GRDF to increase the number of customers connected and compensates it based only on results obtained. Therefore, the ATRD5 tariff does not cover any budget specific to the connection increases in GRDF's operating expenses.

Moreover, GRDF shall continue to present each year to market participants, within the framework of the gas working group (GTG), the state of progress made in its actions to increase the number of customers connected to the gas networks and the corresponding review.

[14] The different tariff options are outlined in paragraph I.C.1.
[15] New connection or continued gas use by the customer.

5. Incentive-based regulation of research and development costs

The energy landscape is set to evolve drastically with the arrival of smart meters and smart grid projects. In order to support such developments, the networks, which enable the transport of energy up to its consumption point, must be modernised within the context of the energy transition and by drawing on information and communication technologies. The DSOs shall therefore have to lead the necessary innovative projects to provide an efficient and high-quality service to users of the networks while these networks are being fully updated and in particular develop their network operation tools. CRE wishes to ensure that GRDF has the necessary resources to carry out its R&D projects and that these resources are used efficiently.

The definition of a budget devoted to R&D shall identify the amounts to be used for R&D and for funding innovative projects.

The present decision introduces a mechanism aimed at providing GRDF with the means to carry out the R&D projects required for the construction of the networks of the future by guaranteeing in particular that tariff matters do not hinder R&D projects.

It has also set up a monitoring mechanism to provide gas market participants with greater visibility into the projects steered and funded by GRDF as regards innovation. Almost all contributors to the public consultation were in favour of implementing these mechanisms.

The forecast expenses presented by GRDF for smart grid projects corresponding mainly to R&D expenses are included in the incentive-based regulation mechanism. However, the R&D actions carried out to increase the number of customers connected to the gas networks are not taken into account in this regulation mechanism. Such actions fall within a specific incentive-based regulation (see paragraph I. B. 4).

The R&D costs, including those related to smart grid projects, and excluding R&D costs to increase the number of customers connected to the gas networks, taken into account in the ATRD5 tariff, represent an average €10.7 M per year over the 2016-2019 period.

At the end of the tariff period, CRE shall review GRDF's actual operating expenses used for R&D projects and shall return to users the difference between the forecast trajectory and the actual trajectory, if it is positive.

For that purpose, GRDF shall submit to CRE, before the end of the first quarter of each calendar year *Y*, a review for the year *Y-1*, which may be audited regularly. Any annual differences between the actual and projected trajectories shall have to be justified by GRDF within the framework of the annual report sent to CRE.

Every two years, CRE shall publish a report on the actions conducted by GRDF as part of research and development, which shall provide visibility into the projects led by GRDF, and funded by the ATRD tariff.

6. Incentive-based regulation of quality of service

In order to improve the service quality level offered by GRDF, an incentive-based service quality regulation mechanism was established by the ATRD3 tariff, which entered into force as at 1 July 2008.

The ATRD4 tariff, which took effect as at 1 July 2012, maintained that regulatory framework, while making developments to it and completing it, encouraging the operator to improve its efficiency as concerns the quality of service provided to its network users. The GRDF service quality monitoring mechanism was in particular modified by the implementation of financial incentives related to the quality of service provided to customers, by the drop in the bonus level for indicators for which the results attained by GRDF had been very good for several years and by a drop in the total number of indicators.

The service quality indicators monitored by GRDF are defined in CRE's deliberations concerning the ATRD or ad hoc tariff[16]. The results of these indicators are published by GRDF on its website aimed at the wider public and are included in the annual reports on the monitoring of the incentive-based regulation of network operators' service quality published by CRE.

[16] CRE's tariff proposal of 28 February 2008 for the use of the public natural gas distribution networks and CRE's decisions of 28 February 2012 on the equalised tariff for the use of GRDF's public natural gas distribution networks, of 27 June 2013 on the evolution of the incentive-based regulation mechanism for the quality of service established by the equalised tariff for the use of GRDF's public natural gas distribution networks and of 9 April 2014 on the evolution of the equalised tariff for the use of GRDF's public natural gas distribution networks as at 1 July 2014.

The present tariff decision retains the current service quality monitoring system, while making some developments based in particular on feedback. This development aims both to improve service quality monitoring, ensure stability of the incentive-based system in order to offer better visibility to the operator and market participants, and simplify the mechanism for allocating financial incentives.

During the public consultation, most of the participants highlighted the importance of the existing incentive-based service quality regulation. In addition, these participants proposed changes, some of which have been adopted.

CRE has decided to develop the list of service quality indicators followed in line with GRDF's operational practices as well as with CRE's recommendations made in the 2013-2014 report on compliance with codes of good practice and independence of electricity and natural gas system operators. CRE has therefore made the following changes, with which most of the contributors to the public consultation agreed:

- change in two existing indicators in order to better follow the quality of service provided by the operator in the associated areas:
  - monitoring, as from 1 January 2017, of the rate of connections carried out within the timeframes agreed on according to type of customer (general public on the one hand, and business customers on the other hand) and no longer by type of facility (meters with maximum flow rate lower than or equal to 10 m^3/h and connections without extensions on the one hand, and meters with maximum flow rate strictly higher than €10 m^3/h and requiring an extension on the other hand);
  - monitoring of the supplier changeover rate within the timeframes requested according to type of customer and also by type of operation (with or without travel);
- introduction of two indicators giving rise to financial incentives:
  - the magnitude of the distribution variance accounts (DVAs) by frequency of meter readings and by suppliers which completes the existing indicator for the overall magnitude of the DVAs which had had a financial incentive;
  - the sending to the transmission system operators (TSOs) of daily estimates of quantities loaded by suppliers at PITDs within a timeframe enabling them to be taken into account by the TSOs. This indicator completes the existing indicator for following the forwarding to TSOs of daily estimates of quantities loaded by suppliers at PITDs within the agreed timeframe, which shall no longer give rise to a financial incentive;
- introduction of two indicators, with no financial incentives, in connection with CRE's recommendations following its audit of claims processing within the framework of its 2013-2014 report on compliance with codes of good practice and independence of electricity and natural gas system operators:
  - following of the rate of customer claims processed within more than two months, which ensures that all claims are actually processed;
  - following of the rate of multiple claims to monitor the quality of the initial responses given to claims;
- elimination of the indicator measuring the average timeframe for a supplier changeover which is redundant with the indicator for the rate of supplier changeovers made within the requested timeframes.

CRE has also introduced the following three indicators not giving rise to financial incentives, which were proposed by different contributors in response to the public consultation:

- the rate of customer absence for meter reading twice and over of customers whose meters are read every six months, which completes the existing indicator for following the rate of absence for meter reading three times and over of customers whose meters are read on a six-month basis. These indicator is in line with the provisions of Article 202 of law No. 2015-992 of 17 August 2015 on energy transition for green growth which states that "*no electricity or natural gas consumption dating back to more than fourteen months from the last meter reading or self-meter reading can be billed, except in the case of lack of access to the meter, lack of transmission by the customer of an index concerning their actual consumption, after a letter addressed to the client by the system operator by registered mail with a request for acknowledgement of receipt, or fraud*";
- the rate of response to supplier claims within five calendar days, which completes the existing indicator for monitoring the rate of supplier claims within fifteen calendar days;
- the quality of intraday metering data of customers whose meters are read daily and sent to the TSOs, which completes the indicator for monitoring the rate of transmission to TSOs of daily estimates of

quantities loaded by suppliers at PITDs within the agreed timeframe.

Moreover, some contributors to the public consultation requested changes in the list of indicators for monitoring service quality, such as the following of estimates made by GRDF concerning non-metered or self-metered indexes, monitoring of the quality of flows transmitted by GRDF through OMEGA and the monitoring of the availability of the telephone line devoted to suppliers. The relevance of these requests shall be analysed within the framework of the gas working group (GTG).

In order for GRDF to remain poised to improve its performance regardless of the level attained, CRE defines for each indicator giving rise to a financial incentive[17], a single reference goal below which the operator must pay a penalty and over which it receives a bonus. In addition, CRE determines the floor and ceiling values corresponding to the minimum and maximum values of the amount of financial incentive for each of these indicators, set in line with the past trends of each indicator and by ensuring that these limits correspond to exceptional situations that justify the interruption of the incentive-based mechanism.

Most contributors to the public consultation were in favour of suppressing the "neutral" financial zone between the basic goal and the target goal.

In order to provide better visibility to GRDF and market participants, CRE has established a list of nine new indicators whose definitions, level of objectives and of financial incentives will be set for the entire ATRD5 tariff period. Moreover, CRE has kept the possibility of modifying on an annual basis, the other indicators which were recently implemented or which could be subject to major variations in terms of definition, level of objectives and of financial incentives.

Almost all contributors to the public consultation were in favour of this proposal.

CRE has also retained the possibility, on the one hand, of adding or eliminating indicators during the tariff period, and, on the other hand, of deciding to introduce financial incentives to or to remove them from existing indicators if necessary. CRE shall have to, for example, provide public persons with the data on natural gas and biomethane production and consumption, according to the terms currently being defined. CRE considers that the transmission of this information is of major importance and could be subject to specific monitoring: if necessary, new indicators will be implemented during the tariff period within the framework of the incentive-based service quality regulation mechanism.

7. Review clause

The present tariff decision renews the review clause that may be activated at the end of two years following the entry into force of the tariff, i.e. for the change that will be made to the tariff as at 1 July 2018. This clause was introduced by the ATRD4 tariff.

Most of the contributors to the public consultation are in favour of maintaining the review clause for the ATRD5 tariff, using similar activation criteria as for the ATRD4 tariff.

The review clause states that any consequences of new legislative or regulatory provisions or court rulings may be examined if the level of net operating expenses adopted when calculating the GRDF tariff comes to be altered by at least 1%. The trajectory of the net operating expenses to be covered by the ATRD5 tariff may be amended after such an examination, with the financial consequences resulting from changes in external factors only being incorporated in respect of the period subsequent to the application of this review clause, i.e. for the years 2018 and 2019.

[17] With the exception of the indicators for the number of scheduled appointments not met by the DSO, the rate of response to supplier claims within 15 calendar days and the rate of response to customer claims within 30 calendar days for which only one basic objective is defined.

C. Structure of the tariff for the use of GRDF's distribution networks

1. Continuity of the existing tariff structure

The tariffs for the use of the public natural gas distribution networks apply to over 11 million customers. To contribute to the proper functioning of the gas market in France, these tariffs must be as simple and legible as possible. For the present tariff, CRE has maintained, building on the previous ATRD tariffs, the general principles below:

- geographical equalisation for all of the concessions granted to the same DSO, other than those granted within the framework of a competitive procedure;
- setting of a specific tariff for each DSO keeping unbundled accounts and a common tariff for the other DSOs;
- a tariff structure comprising four main tariff options corresponding to the following customer segments:
  - two-part option T1: annual consumption from 0 to 6,000 kWh;
  - two-part option T2: annual consumption from 6,000 to 300,000 kWh;
  - two-part option T3: annual consumption from 300,000 to 5,000,000 kWh;
  - three-part option T4: annual consumption over 5,000,000 kWh.

  The thresholds above have been established taking account of the tariff-based supply levy (*contribution tarifaire d'acheminement* - CTA) which applies to the tariff's set charges and for a modulation of 178 days for option T4;
- a special tariff option known as the "proximity tariff" (three-part TP option), reserved for large customers installed near the gas transmission network and that are already supplied by the distribution networks;
- the billing terms for customers that do not have an individual meter are as follows:
  - for all end customers in an apartment block or group of housing units without individual meters but where there is a communal meter and that have taken out a collective supply contract, a subscription equal to that of option T1 is charged, applied to the number of units supplied in gas, and a proportional portion equal to that of tariff option T1 is applied to the gas consumption measured by the communal meter;
  - for a customer without an individual or communal meter, a fixed-rate tariff based on consumption of 660 kWh, is applied;
- the supplierchooses the tariff option for a given delivery point. The tariff is applied per delivery point;
- a penalty mechanism for exceeding contracted capacities for tariff options T4 and TP.

In response to the public consultation, market participants expressed satisfaction with the current ATRD tariff structure and are in favour of having it renewed for the ATRD5 period.

Moreover, most participants agreed with maintaining the thresholds between tariff options T1 and T2 at 6 MWh. CRE will analyse the relevance of lowering the threshold between options T1 and T2 as part of work it wishes to undertake concerning the tariff structure.

2. Tariff handling for second tier DSOs (*GRD de rang n+1*)

A DSO is described as "second tier" if its network is supplied by means of another natural gas distribution system upstream of its service area. The upstream DSO is described as "first tier".

The present tariff decision renews the tariff handling for tier-2 DSOs (*GRD de rang 2*) established in CRE's deliberation of 28 February 2012 deciding on the equalised tariff for the use of GRDF's public natural gas distribution networks and extends it to second tier DSOs:

- the first tier DSO invoices the second tier DSO for 50% of the transportation costs, calculated using the first tier DSO's ATRD tariff. This 50% proportion applies irrespective of the upstream DSO and corresponds to the coverage of:
  - normative operating expenses, which represent an average 47% of the ATRD tariff (operating expenses / total expenses);

- and a proportion of the standard capital expenses for future enhancements, representing an average 3% of the ATRD tariff;

- the first tier DSO bills the second tier DSO for the full costs of connecting to the first tier DSO's network, i.e.
  - the full cost of the connection;
  - if applicable, the full cost of the intake system (also known as an "extension");
  - and the full costs of upgrading the first tier DSO's system when they are directly and immediately attributable to the second tier DSO (or otherwise, the share of the cost of engineering work that is attributable to the second tier DSO in proportion to peak flow rates);
- the first tier DSO also bills the second tier DSO for any additional services calculated based on the price list of the first tier DSO's service catalogue;
- when the upstream DSO is different to the downstream DSO, the upstream DSO bears the following costs:
  - the full cost of investments related to the metering station at the interface between the two networks. These investments include in particular, telemetering, civil engineering, supply and layout of the metering station;
  - all operating, maintenance and upgrading costs, related to the use of the metering station.

The procedure related to the operational application of the rules governing the relationship between a first tier and second tier DSO approved on 14 December 2012 by the gas working group (GTG) defines the rules applicable to the second tier DSO.

3. Analysis of the long-term costs and structure developments by the time of GRDF's ATRD6 tariff

In view of the ATRD6 tariffs, CRE wishes as of now to reflect generally on the possible development of GRDF's ATRD tariff structure. In that regard, an in-depth study of the costs generated by each type of customer based on their use of the gas distribution networks is necessary. GRDF's current management system does not enable an economic allocation of the long-term costs generated by each customer; an economic model must be designed in order to allocate costs by customer segment and based on their use of the network. Such a model could be used to subsequently adjust the tariff structure.

This work will serve to, for example, better take into account developments in customer behaviour in the tariff structure in order to encourage customers to control their energy demand and to limit their consumption during peak periods. For example, this study will allow for the examination of the relevance of introducing a charge proportional to the capacity subscribed to better reflect the costs generated by customers with major consumption variations or that use gas as a backup or as a supplement to another energy source.

CRE will organise, with the DSOs and in consultation with market participants, an analysis of the long-term cost distribution, based on each customer's use of the network. The results of this work will be taken into account, if appropriate, in GRDF's next ATRD tariff. The following schedule is forecast:

- 2nd quarter 2016 – autumn 2017: launch of work with GRDF and local gas distribution companies;
- autumn 2017 – end 2018: consultation with market participants and CRE's decision;
- early 2019 – July 2020: adaptation by operators and market participants for a possible entry into force of GRDF's and local gas distribution companies' ATRD6 tariff.

II. PARAMETERS OF GRDF'S ATRD5 TARIFF AND ITS DEVELOPMENT TRAJECTORY

A. Forecast authorised income

Article L.452-1 of the French Energy Code states that "*the tariffs for the use of natural gas transmission and distribution networks and liquefied natural gas facilities, […], are established in a transparent and non-discriminatory manner so as to cover all of the costs incurred by these operators, provided that these costs correspond to those of an efficient network or facility operator. […].These costs include, in particular, the operating, research and development expenses necessary to ensure the safety of the network and control of the quality of the natural gas injected or withdrawn, as well as the portion of the cost for network extensions payable by distributors."*

Pursuant to the provisions of this Article of the Energy Code, GRDF's forecast expenses were determined by CRE based on all of the costs necessary for the functioning of the distribution network, such as they were forwarded to CRE by GRDF and as they appear in the operators' accounts. These costs take into account in particular, the costs resulting from the execution of the DSO's public service missions, the goals of which are specified within the 2015-2018 public service contract between the State and GRDF. The forecast expenses adopted for the ATRD5 tariff define a trajectory for the following tariff period corresponding to those of an efficient operator.

GRDF updated its tariff request at the end of November 2015 compared to its initial request made in May 2015 and early 2016 it reviewed its estimate of the CRCP balance for the year 2015 in order to include the values for the months of November and December 2015 which saw particularly mild temperatures. Therefore, the estimated CRCP amount for the year 2015 increased from €86 M to €206 M.

CRE thoroughly analysed all of the expense items presented by GRDF for the 2016-2019 period to ensure that they correspond to those of an efficient operator. It took into account the energy policy guidelines forwarded by the minister for ecology, sustainable development and energy by letter dated 10 February 2016, which specifies that "*The main challenge is the necessary control of costs so as to not pass excessive costs onto the customer*. *However, this legitimate pressure on costs should not undermine other important challenges."* In particular, CRE took into account all of GRDF's requests regarding safety expenses and those related to staff remuneration. It revised the trajectories presented by GRDF for other items.

Most participants that answered the public consultation are in favour of CRE's course of action concerning the tariff level. Contributors are also generally in favour of covering the new expenses requested by GRDF and the adjustments presented by CRE, with the exception of suppliers for certain specific projects outlined below. With regard to the WACC, alternative suppliers and energy distribution authorities are in favour of lowering the rates as envisaged by CRE, while historic suppliers and regulated operators are against it.

1. GRDF's request

The forecast authorised income request presented by GRDF breaks down as follows:

In current €M	2016	2017	2018	2019	Average 2016/2019
Net operating expenses (Net OPEX)	1,533.5	1,544.4	1,546.8	1,553.6	1,544.6
Of which losses and various discrepancies	*54.1*	*41.5*	*36.5*	*34.3*	*41.6*
Of which increase in the number of customers connected to the systems	*51.8*	*54.3*	*58.0*	*57.6*	*55.4*
Unpaid bills for the transmission portion of outstanding bills	-	-	-	-	-
Standard capital expenses (Standard CAPEX)	1,651.7	1,703.6	1,744.1	1,793.7	1,723.3
Clearing of the ATRD4 CRCP balance (2014 balance + 2015 estimate)	157.6	157.6	157.6	157.6	157.6
Forecast authorised income	3,342.8	3,405.6	3,448.5	3,504.9	3,425.5

Concerning the net operating expenses, GRDF's request would lead to an increase in 2016, excluding losses and various discrepancies by €165 M, i.e. +12.6% compared to actual net OPEX in 2014. During the 2016-2019 period, these expenses would then increase by an average 0.9% per year.

To explain this very significant increase, GRDF mainly highlights:

- costs associated with projects that are of the utmost importance for the operator, such as the Gazpar

smart meter project and the reorganisation of the common service shared with ERDF, and expenses whose scope evolves over the upcoming tariff period;

- increases in "social statutory charges" item which result from the increase in the rate of health insurance contributions and in "external consumption" item due to the rise in expenses for outsourcing retirement costs between 2014 and 2016.

GRDF did not include in its forecast trajectories any operating expenses corresponding to the amounts due to suppliers for the transportation portion of unpaid bills in accordance with the decision by CoRDiS dated 19 September 2014. However, GRDF requested that they be covered via the CRCP.

As regards standard capital expenses, GRDF's request took into account an estimated weighted average cost of capital of 6% in real terms before tax.

2. Operating expenses

GRDF constructed its tariff request by distinguishing:

- an expense base corresponding to costs associated with a constant scope of activity compared to the ATRD4 period. The operator distinguishes within this scope a "manoeuvrable expenses base", for which it considers that it has the tools to influence the level of expenses concerned (recurring expenses, in particular staff costs), from a "non-manoeuvrable expenses base" for which it considers that it does not have such tools (taxes and social contributions in particular). GRDF also considers that it does not have such tools for expenses related to new projects. The "manoeuvrable expenses base" presented by GRDF corresponds to approximately 75% of the total net operating expenses requested by the operator;
- costs associated with projects of utmost importance to the operator which include in particular:
  - the Gazpar smart metering project (an average €44.1 M per year over the 2016 - 2019 period);
  - the "Transformation" project related to the reorganisation of the common service shared with ERDF (an average €28.1 M per year over the 2016-2019 period);
  - IT system operating expenses related in particular to the replacement of its historic IT systems (an average €19.2 M per year over the 2016-2019 period).

To set the level of forecast operating expenses to be covered by the ATRD5 tariff, CRE thoroughly analysed GRDF's request, particularly on the basis of:

- data from GRDF's accounts for the years 2012 to 2014;
- assumptions concerning the evolution of expenses for the years 2015 to 2019 forwarded by GRDF;
- results of an audit of GRDF's forecast and actual operating expenses for the years 2012 to 2019 and comparisons with other European operators.

As a reference, CRE used the level of expenses incurred by GRDF during the ATRD4 tariff period, in order to pass on to customers the productivity gains made during that period. CRE therefore drew partly on data recorded for the fiscal year 2014 in order to assess the forecast trajectories presented by the operator, while taking into account:

- exceptional or non-recurring factors that occurred in that fiscal year (correction of expenses whose level depends on weather in particular);
- new projects likely to have effects on the level of GRDF's expenses over the 2016-2019 period.

2.1. Main conclusions

In its public consultation of 18 November 2015, CRE presented its preliminary analyses related to GRDF's request for coverage of its operating expenses.

The adjustments to the operator's trajectories recommended by the external audit represented, compared to GRDF's request, approximately €74 M per year on average over the course of the ATRD5 period. CRE also indicated that GRDF had been late in producing additional supporting elements for roughly two-thirds of the total adjustments recommended by the auditor, and that the relevance of these elements was being analysed.

Within this framework, and following the update by GRDF of its tariff request at the end of November 2015,

CRE mandated the external auditor to continue its mission and analyse the new elements forwarded by GRDF on the one hand, and GRDF's updated tariff request on the other hand.

Following this work, the auditor amended its recommendations as follows:

In current €M	2016	2017	2018	2019	Average 2016/2017
Adjustments recommended by the auditor and presented in the public consultation of 18 November 2015	62.5	71.8	72.2	89.5	74.0
Final adjustments recommended by the auditor	31.0	30.5	30.6	33.5	31.4
Differences	*31.5*	*41.2*	*41.6*	*56.0*	*42.6*

The differences are due to:

- the taking into account by GRDF in its updated request of some of the auditor's recommendations (such as the one concerning the losses and various discrepancies for example) in the amount of approximately €12 M per year on average;
- by the non-renewal of some of the auditor's adjustments, following the analysis of justifications provided by GRDF.

The final external audit report also concluded that the elements in GRDF's request which was updated at the end of November 2015 (for the "social costs" item mainly) are correctly justified.

After analysing the conclusions of the external audit report and in the light of all of the elements brought to its knowledge, CRE has retained the adjustments recommended by the auditor to establish the level of expenses to be covered over the course of the ATRD5 period, with the exception of the adjustments concerning the "main compensation" item and the "material procurement" item, and a part of the adjustments to the "Territories" and "Demand forecast" projects. The amount of adjustments not retained by CRE represents an average of roughly €1.9 M, €3 M and €1 M per year for the years 2016-2019 respectively.

The external audit did not report on the analysis of "overhead costs", CICE (*Crédit d'impôt Compétitivité Emploi* – tax credit for competitiveness and employment), actions to increase the number of customers connected to the gas networks and costs associated with the Gazpar smart meter project, considering that the assessment of these items falls exclusively within the competence of CRE. Paragraphs 2.2 and 3 below present CRE's analysis of these items.

<u>Concerning the additional productivity effort:</u>

The trajectory presented by GRDF takes into account an approach to control operating costs within the context of new projects being launched. The forecast trajectory of operating expenses presented by GRDF, excluding expenses related to losses and various discrepancies, increases by an average 0.9% per year over the 2016-2019 period, after a 12.6% increase in 2016 compared to the actual value in 2014, which GRDF justifies by stating that this trajectory is based on a 1.4% productivity effort per year concerning the "manoeuvrable expenses base" of operating expenses, account taken of new projects.

The productivity estimate presented by GRDF results from the calculation for the "manoeuvrableexpenses base". CRE considers that the relevance of the base used by the operator for these "manoeuvrable expenses base" is debatable. For example, this base excludes the new projects for which the operator has stated that it has no short-term performance tools. While the base considered takes into account such adjustments for the 2016-2019 period, it does not plan for any such adjustments for the reference year 2014, which therefore increases the productivity estimate presented by the operator. In addition, GRDF has assumed on principle that there was no area of productivity within the expenses it considers "non-manoeuvrable".

In the light of the analysis of the productivity effort proposed by GRDF, of the analysis of the operator's past costs, of the conclusions of the external audit report on operating expenses, as well as the results of the internal study on the international comparison of natural gas distribution tariffs, CRE considers that the operator has additional efficiency potential concerning net operating expenses as a whole.

In its public consultation of 18 November 2015, CRE presented its preliminary analysis of an additional productivity effort likely to be requested of the operator, compared to that initially proposed by GRDF:

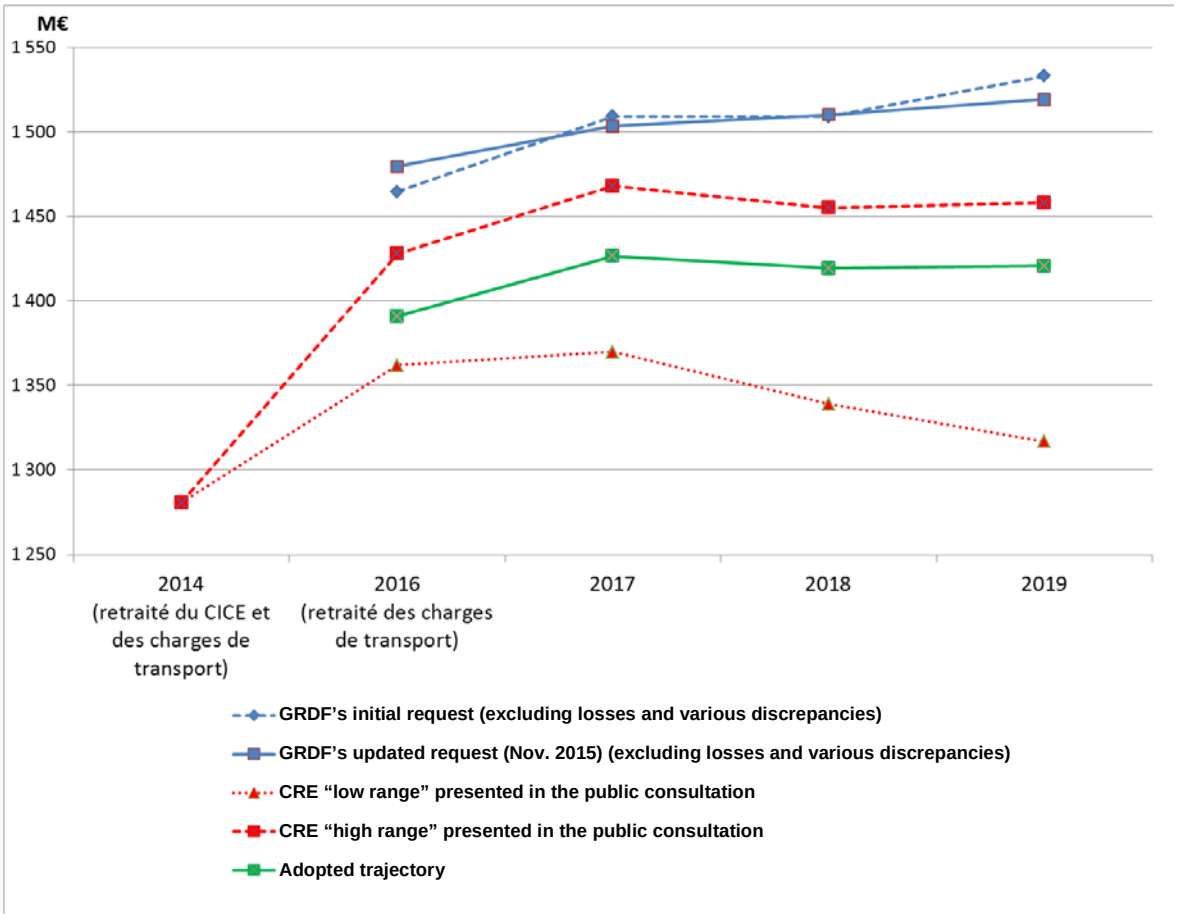
- the "low" range corresponded to the adjustments recommended by the external audit of €30 M in 2017, €60 M in 2018 and €90 M in 2019. The external audit used a comparison of 27 European system operators to propose recommendations on the efficient level of operating expenses to be taken into account for the ATRD5 tariff;

- the "high" range corresponded to adjustments amounting to €5 M in 2017, €15 M in 2018 and €20 M in 2019. The adjustements are progressive to leave the operator enough time to put in place the actions to control its costs.

CRE has adopted the high range presented in the public consultation to set the additional productivity level requested of GRDF during the ATRD5 period. CRE has taken into account the productivity assumptions already included in the request presented by GRDF as well as the context of projects of utmost importance over the course of the ATRD5 period. Therefore, CRE adopts an additional productivity effort to be made by the operator of €5 M in 2017, €15 M in 2018 and €20 M in 2019. This adjustment represents an additional effort of an average +0.4% per year over operating expenses over the 2016-2019 period compared to the level in its tariff request, adjusted to reflect the revisions adopted by CRE.

In summary, the following graph and table present the trajectory of net operating expenses adopted by CRE for GRDF's ATRD5 tariff, compared to the preliminary analysis presented in the public consultation of 18 November 2015.

Net operating expenses (pro forma, excluding expenses related to losses and various discrepancies)



In current €M	2014	2016	2017	2018	2019	Average 2016/2019
GRDF request (November 2015) *	1,339.7	1,533.5	1,544.4	1,546.8	1,553.6	1,544.6
Of which losses and various discrepancies	*25.3*	*54.1*	*41.5*	*36.5*	*34.3*	*41.6*
GRDF request (November 2015) * - excluding losses and various discrepancies	1,314.4	1,479.4	1,502.9	1,510.2	1,519.2	1,502.9
Trajectory adopted by CRE **	-	1,409.7	1,426.1	1,419.5	1,420.8	1,419.0
Trajectory adopted by CRE (pro forma) ***	1,280.4	1,390.7	1,426.1	1,419.5	1,420.8	1,414.3

** including expenses to increase the number of customers connected to the gas systems*
*** including the estimated amount to increase the number of customers connected to the gas systems*
**** adjusted for CICE for 2014 (see paragraph 2. 2. d) and transportation expenses for 2014 and 2016 (see paragraph 2. 2. k), including estimated amount to increase the number of customers connected to the gas networks*

The following paragraphs present the detailed conclusions of CRE's analyses concerning the main operating expense and income items presented by the operator.

2.2. Analysis of the main operating expense items

a) Expenses related to the "Transformation" project (reorganisation of the common service activities shared between ERDF and GRDF)

GRDF shares with ERDF a common service consisting in, for GRDF and ERDF, infrastructure construction, operation and maintenance of networks, metering and the provision of other services. It maintains a close relationship with customers and local authorities.

The rollout of smart meters, Linky for electricity and Gazpar for gas, which will result in a roughly 70% drop in the number of electricity interventions and almost a complete elimination of meter reader visits, will lead the operators to make changes to this common service. ERDF and GRDF have launched the "Transformation" project aimed at adapting their activities to this new context, by redefining in particular the functioning of the common service. CRE notes, as GRDF underlines, that it is a major industrial project for both distributors.

The costs of this project have been included by GRDF in the estimated trajectories for the ATRD5 tariff, in the amount of €109 M for the 2016-2019 period. The operating expenses for the "Transformation" project include mainly staff costs and property expenses.

The external audit conducted for CRE concluded that the expenses related to external consumption for the "Transformation" project, in particular those related to property costs, are overestimated by approximately €25 M for the 2016-2019 period.

In the light of the information brought to its attention, CRE has decided to adjust the estimated trajectory of operating expenses for the ATRD5 tariff by an average €6.4 M per year.

In current €M	2016	2017	2018	2019
Expenses associated with the "Transformation" project	30.0	40.1	27.4	14.8
Adjustments	-9.9	-7.2	-4.5	-4.1
Trajectory adopted	20.1	33.0	22.9	10.6

CRE will ensure consistency between the costs taken into account in GRDF's estimated trajectories and the costs that will be presented by ERDF within the framework of the elaboration of the next electricity distribution tariffs.

b) Operating expenses relating to IT systems

i New projects to develop IT systems

In its tariff request, GRDF presented two major projects to develop its IT systems. The "*Reconstruction SI*" project corresponds to the development of GRDF's IT systems to replace the historical systems (Disco and Pictrel) and to take into account the reorganisation of the common service shared with ERDF. The "*SI transformant*" project corresponds to the adjustments needed for opening services and IT licences to competition, which is currently entrusted to GDF SUEZ IT.

The corresponding costs for the 2016-2019 period are as follows:

In current €M	2016	2017	2018	2019

Operating expenses for the development of IT systems	14.3	18.5	17.5	26.4

CRE considers on the one hand, that the "Reconstruction SI" project corresponds to a real operational development for GRDF, and on the other hand, that the "*SI transformant*" project will promote the independence of the DSO vis-à-vis the parent company. Therefore, it has decided to take into account these costs in the forecast trajectories for the ATRD5 tariff.

ii Recurring expenses related to IT systems

The level of recurring expenses is €109.8 M for the year 2014.

CRE notes that GRDF has taken into account in its tariff request a productivity objective of 4% for its recurring IT system operating expenses, as from the year 2016 and compared to the level of estimated costs for the year 2015.

The audit shows that the application of a 4% productivity objective compared to the level of the last costs recorded in 2014 could result, over the 2016-2019 period, in a lower level of estimated expenses compared to the level requested by the operator.

The audit of the operating expenses also showed additional potential to attain a more efficient level over the ATRD5 period by drawing in particular on the results of a comparison between the IT system operating costs borne by GRDF, and those of other European gas DSOs.

In the light of these conclusions and of all of the information brought to its knowledge, CRE has revised the trajectory of recurring IT service costs presented by GRDF by an average €5.8 M per year over the 2016-2019 period.

iii Total IT system expenses

In sum, CRE has adopted, for the IT system operating expenses item, the trajectory presented by GRDF for new projects and has revised the trajectory for recurring IT expenses:

In current €M	**2016**	**2017**	**2018**	**2019**
Total IT system expenses – GRDF request	136.0	139.8	137.2	142.6
Adjustments made for recurring IT expenses	-6.3	-5.9	-5.6	-5.4
Trajectory adopted for IT expenses	129.7	133.9	131.6	137.2

c) Management fees

In its decision of 28 February 2012 on the tariff for the use of GRDF's public natural gas networks, CRE had reiterated that " *that there must be some consideration for overhead costs in the form of services rendered by the parent company to its subsidiary*" and considers that "*by virtue of the principle of system operator independence, GRDF must organise matters to provide services which today are still invoiced as management fees by the Group to which it belongs*".

In 2015, GRDF individualised, in the form of a service provision agreement, a part of the services provided by ENGIE for GRDF, previously included in the contract related to management fees.

GRDF included in its ATRD5 trajectory the expenses corresponding to this agreement, i.e. roughly €9 M per year, which concerns mainly purchases, human and financial resources and economic studies, institutional and regulatory monitoring and environmental and societal liability.

In addition, GRDF requested for the ATRD5 trajectory to include the cost of the contract related to management fees which have not been individualised, i.e. roughly €16 M per year. This covers occasional services provided by certain departments of the ENGIE group to GRDF.

CRE considers that the expenses foreseen by the service provision agreement must be covered by the tariff.

Moreover, it considers that, given the independence principle to which GRDF is subjected (Article L.111-61 of the French Energy Code), the lack of clearly identified services, and building on the courses of action taken in the abovementioned decision by CRE dated 28 February 2012, the costs of the contract related to management fees are not to be covered by the ATRD5 tariff.

CRE has decided to subtract from the trajectory of expenses to be covered by the ARTD5 tariff the amount of the contract related to management fees:

In current €M	2016	2017	2018	2019
Management fees – CRE request	15.7	15.9	16.1	16.3
Adjustments	15.7	15.9	16.1	16.3
Trajectory adopted	0	0	0	0

d) CICE (tax credit for competitiveness and employment)

The CICE is a tax credit for companies based on the salaries paid. According to the accounting standards body[18], it is not a tax but rather a reduction of social contributions.

CRE notes that GRDF is eligible for the CICE for the fiscal years 2014 and 2015 for approximately €15 M per year.

CRE considers that this operating income must be deducted in the calculation of expenses to be covered by the tariff. Considering the lack of any significant changes in the basis of the tax credit calculation for GRDF for the upcoming fiscal years, CRE adopts an estimate of an average €15 M of operating expenses per year for the 2016-2019 period to be deducted from the operating expenses to be covered by the tariff.

e) Immobilised production

In-house GRDF resources allocated to investments concern staff costs and equipment purchases. The estimated trajectory for immobilised production is the result firstly, of GRDF's projected investment programme, and secondly, of the cost allocation rate used to allocate GRDF staff to its investments. Immobilised production totals approximately €994 M over the 2016-2019 period.

The audit of operating expenses concluded in a revision of the assumed cost allocation rates adopted by GRDF within its trajectory for the labour component and equipment purchases.

Given all of the information brought to its attention and following an in-depth analysis, CRE has reassessed the projected trajectory for immobilised production (this item being deducted from gross operating expenses):

In current €M	2016	2017	2018	2019
Immobilised production – GRDF request	234.6	250.5	253.5	255.8
Adjustments	+ 3.9	+ 4.5	+ 5.1	+ 5.2
Trajectory adopted	238.5	255.0	258.6	260.9

f) Non-tariff income

Operating income related to the "non-tariff income" item corresponds mainly to income from "day-to-day management" (insurance reimbursements, waiving of expenses to be paid), billing of third-party contributions and different services billed by GRDF to third parties. This income is deducted from the total expenses to be covered by the ATRD tariff.

The method for constructing the projected trajectory of this item, presented by GRDF, consists in using over the 2016-2019 information from income considered to be recurring.

The external audit of GRDF's operating expense concluded that this method was relevant, but that the total recurring information was underestimated by GRDF.

Given all of the information brought to its knowledge, CRE has decided to revise the trajectory of the "non-tariff income" item presented by GRDF and adopts the following trajectory:

€M current euros	2016	2017	2018	2019
Non-tariff income – GRDF request	370.6	366.4	367.4	328.6
Adjustments	+ 4.3	+4.4	+ 4.4	+ 4.5
Trajectory adopted	375.0	370.8	371.8	333.1

[18] Communiqué of 23 May 2013 published in the bulletin of the national auditing body (CNCC) NO. 170 of June 2013

g) Evolution of spending related to the "Gazpar" smart metering project

The smart metering project for the retail natural gas market aims to replace all meters installed in 11 million housing and small business units served by GRDF. These smart meters, called "Gazpar", will enable in particular remote metering and the transmission of actual consumption indexes to suppliers on a monthly basis, or at certain times in the stage of the contract (commissioning, tariff changes, etc.).

The ATRD4 tariff covered the costs related to GRDF's smart metering project in compliance with guidelines specified in CRE's deliberation of 21 July 2011, reiterated and completed by CRE's decision of 17 July 2014 on the incentive-based regulation framework for GRDF's smart metering system[19] .

GRDF's request includes an investment trajectory for the Gazpar smart metering system over the 2016-2019 period which is slightly higher than that presented in the technical and economic study conducted by CRE in 2013.

Investments (in current €M)	**2016**	**2017**	**2018**	**2019**
2013 reference plan	35.6	101.9	168.2	245.0
Projected ATRD5 updated by GRDF	41.4	101.0	168.1	245.4
Difference	+ 5.8	- 0.9	- 0.1	+ 0.3

The increase in 2016 is due to the postponement from the previous tariff period of IT investments for the Gazpar project.

CRE's decision of 17 July 2014 defines the specific regulatory framework governing the assets related to GRDF's smart metering project which will apply to this trajectory.

As regards the operating expenses related to the metering activity, CRE specified in the abovementioned decision of 17 July 2014 that they "*will be monitored specifically, particularly when GRDF's next ATRD tariffs are being defined. For each tariff period, CRE will ensure that the trajectory of operating expenses presented by the operator is consistent with the projections for cost reductions (mainly meter reading costs and gas purchases to offset losses) and projections of costs for operating the smart metering system (related mainly to IT and system supervision) taken into account in CRE's technical and economic study conducted in 2013".*

GRDF included in its ATRD5 trajectory new forecasts concerning the Gazpar project costs and gains made in net operating expenses.

Net operating expenses (in current €M)	**2016**	**2017**	**2018**	**2019**
2013 reference plan	45.1	46.5	36.7	23.9
Projected ATRD5 updated by GRDF	41.9	54.3	46.0	34.1
Difference	*- 3.2*	*+7.8*	*+9.3*	*+10.2*

Most contributors to the public consultation agree with taking into account new expenses related to the Gazpar project. However, most suppliers raised questions about the level of these expenses and their scope.

CRE considers that the new expenses (operating expenses and investment spending) in connection with the law of 17 August 2015 on energy transition for green growth (warning to customers if they exceed a target consumption level previously defined and comparison of their consumption with reference consumption at national and local level) must be covered by the ATRD5 tariff.

However, CRE considers that the other additional costs presented by the operator, in particular those related to the deferral of expenses from the ATRD4 tariff period to the ATRD5 tariff period and already covered by the ATRD4 tariff, must not be included in the cost trajectory of the ATRD5 tariff.

Therefore, CRE has decided to adjust the forecast trajectories of net operating expenses over the ATRD5 tariff period by €9.6 M over the 2016-2019 period, i.e. €2.4 M per year.

Lastly, CRE considers that expenses related to extending services involving the provision of data to customers under tariff options T1 and T2, equipped with a Gazpar meter, to customers under tariff options T3 and T4, are justified and must be covered by the ATRD5 tariff. However, CRE has excluded them from the Gazpar project and the incentive-based regulation specific to the project.

[19] CRE decision of 17 July 2014 concerning the incentive-based regulatory framework for GRDF's smart metering system

h) Expenses and income related to biomethane injections

Biomethane injection into the natural gas networks is a booming process in France, enabling the recovery of biogas derived from the anaerobic digestion of organic waste. The injection of biomethane lowers fossil energy consumption and greenhouse gas emissions with a view to reaching energy policy objectives. Article L. 100-4 of the Energy code amended by law No. 2015-992 of 17 August 2015 on energy transition for green growth states that "*National energy policy aims to: […] 4° Increase the portion of renewable energy in gross final energy consumption to 23% in 2020 and to 32% in 2030; at that date, in order to reach this goal, renewable energy must represent [...] 10% of gas consumption.*"

The energy policy guidelines, sent to CRE by the minister of ecology, sustainable development and energy by letter dated 10 February 2016, highlight the importance of the biomethane injection objectives defined within the framework of the multiannual energy programming currently under discussion, i.e. "*an injection objective of 1.7 TWh in 2018 and 6.1 TWh in 2023 (low-range projections)".*

At the end of 2015, fourteen biomethane injection facilities were injecting into GRDF's network. On the basis of the baseline scenario constructed by ADEME in 2014[20], GRDF established a reference trajectory for new facilities connected to its network, the commissioning of which will take place during the ATRD5 tariff period:

	2016	**2017**	**2018**	**2019**
Number of new injection facilities connected by GRDF, commissioned during the year	20	30	33	35

CRE has adopted this projection of the number of new injection facilities, which is consistent with the injection goals of 1.7 TWh in 2018 and 6.1 TWh in 2023.

GRDF projects the following investment trajectory for the ATRD5 period:

In current €M	**2016**	**2017**	**2018**	**2019**
Investments	12.4	15.3	16.6	17.5

For the ATRD5 period, GRDF projects the following net operating expenses trajectory:

In current €M	**2016**	**2017**	**2018**	**2019**
Gross operating income	+ 8.2	+ 12.0	+ 15.7	+ 19.4
Of which third-party contributions to connections	*+ 4.8*	*+ 6.2*	*+ 6.8*	*+ 7.1*
Gross operating expenses	- 5.2	- 7.1	- 8.1	- 10.2
Net operating income	+ 3.0	+ 4.9	+ 7.6	+ 9.2

The auditor considered that the operating expenses related to biomethane injections, for the number of facilities forecast by GRDF, are overestimated by about €2.4 M over the 2016-2019 period.

In the light of the information brought to its attention, CRE has decided to adjust the projected trajectory of operating expenses for the ATRD5 tariff by an average €0.6 M per year.

i) Expenses related to the "Tulipe" project (conversion of B gas into H gas and adaptation in the north of France)

There are two types of natural gas distributed in France: "H" gas and "B" gas. B gas, which comes mainly from the Groningue gas field (the Netherlands) is characterised by a lower calorific value than H gas. It is distributed in the north of France where it supplies roughly 1.3 million customers connected to GRDF's networks, representing approximately 10% of French gas consumption. H gas, which represents roughly 90% of French consumption, comes from all other supply sources (for example the North Sea, Algeria and Russia).

Metering mechanisms and mechanisms for gas deliveries at property lines, as well as equipment located downstream of the meter in housing units are adapted to the type of gas delivered.

B gas supply contracts plan for a gradual decrease in B gas deliveries in France until the end of the contracts. It is therefore necessary to plan for the conversion of equipment currently adapted to B gas in order to make them compatible with the characteristics of H gas. The "Tulipe" project, co-steered by GRDF

[20] The baseline scenario built by ADEME for 2030, in consultation with the biomethane sector, corresponds to the connection of 500 biomethane injection facility sites and injection of 12 TWh of biomethane per year.

and GRTgaz in cooperation with public authorities, aims to implement this conversion.

GRDF estimated the costs related to a pilot experiment scheduled for 2018-2019. These costs mostly comprise operating expenses (€22 M compared to €2.8 M in investment spending over the 2016-2019 period).

Under the terms of Article L.432-13 of the Energy code created by law No.2015-992 of 17 August 2015 relating to energy transition for green growth, the decision and arrangements for implementing the "Tulipe" project will be addressed in a decree after CRE performs a technical and economic assessment. At this stage, CRE intends to carry out that assessment early 2017, based on the information that will be provided by GRDF and the other infrastructure operators concerned. This assessment will be used in particular, to ensure that the costs for which GRDF requests coverage correspond to those of an efficient operator, within the framework of its public service missions.

The audit of operating expenses concluded, given the major uncertainty concerning the timetable and the procedures and costs of this project, that it would be relevant to retain only the costs budgeted by GRDF to carry out mainly studies, training of operators and drafting of conversion manuals.

CRE has decided to take into account in the projected trajectory of the ATRD5 tariff these costs which represent a total of €1.1 M over the 2016-2019 period.

Given the major uncertainty at this stage surrounding the timetable and costs of this project, the present tariff decision introduces a new item in the CRCP in order to take into account the possible change in the costs of the "Tulipe" project during the ATRD5 tariff period, at the request of GRDF and based on the results of the technical and economic study that will be conducted by CRE.

j) Other projects

i "Territories" and "Demand forecast" projects

The "Territories" project presented by GRDF aims in particular to take into account the consequences of law No. 2015-991 of 7 August 2015 on the new territorial organisation of the Republic of France, known as the "NOTRe" law, and of law No. 2015-992 of 17 August 2015 on energy transition for green growth (known as "LTECV"), which leads local authorities to develop and broaden their scope of action in the energy field.

The "Demand forecast" project, is particularly in response to, according to GRDF, the provisions of Article L.141-10 of the Energy code, arising from the LTECV, which states that: *"Natural gas transmission system operators establish at least every two years, under the State's supervision, a forecast multiannual review. […] In order to establish that review, the natural gas distribution system operators establish a multiannual forecast of natural gas consumption and renewable production, for their activity. Distribution system operators have access to all useful information from downstream distribution system operators, producers, suppliers and customers. They maintain the confidentiality of the information so collected."*

GRDF has earmarked for these projects an average €2.8 M per year and requests that it be covered by the ATRD5 tariff in order to:

- support and answer to the expectations of local authorities, in particular through the supply of information enabling them to plan and implement their energy strategies;
- elaborate multiannual forecasts of natural gas consumption and renewable production for the distribution network at national and regional level, in collaboration with all stakeholders.

Changes in the expectations of players and the legislative framework will lead GRDF to carry out a forward estimate of gas demand, make data more widely available than it is currently, and develop to that effect additional IT tools, the costs of which must be covered by the ATRD5 tariff.

CRE notes however that certain actions conducted within the framework of the "Territories" and "Forecast demand" projects are already carried out by GRDF as part of its current DSO missions.

Given all of the information brought to its attention, CRE retains the additional costs presented by GRDF totalling €2 M per year over the 2016-2019 period. Therefore, it has made an adjustment by €0.8 M compared to the operator's request.

ii "Smart grids" projects

GRDF requests the coverage by the ATRD5 tariff of expenses related to "Smart grids" projects. The projects

requested to be taken into account in the projected tariff trajectories are as follows:

- the "power to gas" project (conversion of renewable electricity into hydrogen, which can be injected into the gas networks) and in particular the GRHYD project (*Gestion des Réseaux par l'injection d'Hydrogène pour Décarboner les énergies* – management of networks by hydrogen injection to decarbonise energy);
- real-time surveillance and dynamic steering of the network;
- information technologies used for operational performance (e.g. Infocoupure site (site devoted to information on outages), collection and coordination of road works, mobility tools for operations, etc.).

GRDF estimates the cost of these projects at approximately €2.4 M per year in operating expenses over the 2016-2019 period. The majority of market participants are in favour of covering these costs. CRE considers that these are projects aimed at modernising the natural gas distribution network for the benefit of end customers. Therefore, it has retained all of GRDF's requests in the ATRD5 tariff.

Expenses related to "Smart grids" projects, mainly R&D costs, are included in the incentive-based mechanism for R&D expenses in the ATRD5 tariff.

Lastly, GRDF provided CRE with qualitative analyses of the benefits brought by these projects. CRE requests GRDF to provide it, within the framework of the annual follow-up of R&D projects and once experiments have been conducted, with quantitative analyses demonstrating that the benefits of these projects exceed their costs in the long run.

k) Transfer of certain expenses related to structures for connection to the transmission network, from the ATRD5 tariff to the delivery capacity charge at PITDs in the gas transmission tariffs (ATRT6)

The natural gas TSOs and DSOs sign agreements related to connection, at the interface between transmission and distribution operators, defining the contractual relations between both parties. Current contracts provide for the payment by distributors of expenses, known as "3R" expenses, incurred by the TSOs for repairs, replacements and updating of delivery stations and expenses associated with the maintenance of connections at transportation-distribution interface points (PITDs). These stations and connections are owned by the TSOs. The expenses are recorded as operating expenses for the DSOs and were covered by the ATRD4 tariffs.

For the ATRD5 tariff, GRDF has requested the transfer of these "3R" expenses, as well as certain other expenses related in particular to the use and operation of utilities (telephone and electricity), from the ATRD tariff to the ATRT tariff (*Accès des Tiers au Réseau de Transport* – third-party access to the transmission network) as from 2017, simultaneously with the entry into force of the upcoming ATRT6 tariff[21]. GRDF considers that, since the TSO owns and operates these installations, it alone decides on the work necessary to be done. Therefore, GRDF believes that it has no way of ensuring the efficiency of the expenses incurred by the TSOs.

Most market participants are in favour of transferring "3R" expenses and certain other expenses, related in particular to the use and operation of utilities, from the ATRD tariff to the ATRT tariff. CRE is in agreement with the principle according to which the incentive to control cost must essentially cover costs that can in fact be controlled by the operator, and considers that these are expenses that can only be controlled by the TSOs. Therefore, these cost information will be taken into account when the next ATRT tariffs are being defined.

Lastly, if the transfer of these "3R" expenses and certain other expenses, related in particular to the use and operation of utilities are not effective as from 2017, the coverage of the projected amounts presented by GRDF for these items for the years 2017 to 2019 will be done, after deliberation by CRE, through the CRCP.

2.3. Summary of item to item adjustments

The level of net operating expenses adopted by CRE (excluding additional productivity efforts) is as follows:

In current €M	2016	2017	2018	2019	Average 2016/2019

[21] For local distribution companies, for which the entry into effect of the next ATRD5 tariffs is scheduled for 2017, transportation-distribution connection expenses would be transferred to the ATRT6 tariffs simultaneously.

Net operating expenses – GRDF request *	**1,481.7**	**1,490.1**	**1,488.7**	**1,495.9**	**1,489.1**
Adjustments retained by CRE:	- 63.6	- 63.1	- 63.5	- 66.8	- 64.3
"Transformation" project	*- 9.9*	*- 7.2*	*- 4.5*	*- 4.1*	*- 6.4*
Management fees	*- 15.7*	*- 15.9*	*- 16.1*	*- 16.3*	*- 16.0*
CICE	*- 15.0*	*- 15.0*	*- 15.0*	*- 15.0*	*- 15.0*
IT expenses	*- 6.3*	*- 5.9*	*- 5.6*	*- 5.4*	*- 5.8*
Immobilised production	*- 3.9*	*- 4.5*	*- 5.1*	*- 5.2*	*- 4.7*
Non-tariff income	*- 4.3*	*- 4.4*	*- 4.4*	*- 4.5*	*- 4.4*
"Territories" and "Demand forecast" projects	*- 0.7*	*- 0.8*	*- 0.9*	*- 0.7*	*- 0.8*
*Other adjustments **	*-7.7*	*-9.4*	*-11.9*	*-15.6*	*-11.2*
Net operating expenses retained by CRE *	**1,418.1**	**1,427.0**	**1,425.2**	**1,429.1**	**1,424.9**

** excluding expenses to increase the number of customers connected to the gas systems*

*** adjustments under the Gazpar project and other adjustments recommended by the external audit conducted for CRE and which CRE has decided to adopt after analysis (items concerned: outside staff, R&D, social contributions, biomethane)*

2.4. Productivity efforts

Article L.452-3 of the French Energy Code states that CRE's deliberations concerning the tariffs for the use of natural gas transmission networks "[...] *may provide for a multiannual management structure for the changes in tariffs as well as appropriate short- or long-term incentive measures to encourage operators to improve their performance particularly as regards the quality of service provided […] and productivity efforts*".

CRE conducted an in-depth analysis of the trajectories of GRDF's operating expenses, particularly based on the results of a comparative study of these expenses entrusted to an external consultant. CRE has decided to revise these trajectories by including an additional productivity effort. To define this productivity effort, CRE used the analysis:

- of differences between the actual trajectory of operating expenses and that forecast by the tariff for the ATRD3 and ATRD4 tariff periods;
- of trajectories requested by GRDF and supporting information provided for the ATRD5 tariff period;
- productivity assumptions presented by the operator for a scope of expenses it considers "manoeuvrable" (adjusted in particular for new projects, the "taxes" item, and developments expected in the "social contributions" item).

CRE has also taken into account the conclusions of the external audit of operating expenses as well as the results of an international comparison of natural gas distribution tariffs.

On the basis of these information, CRE adopts an additional adjustment for the improvement of the level of productivity requested by the operator.

This adjustment represents an average €10 M per year over the 2016-2019 period. It corresponds for the operator to an additional effort of an average +0.4% per year on operating expenses over that period, compared to the level in its tariff request, adjusted to reflect the revisions adopted by CRE and presented above (see paragraphs 2.2 and 2.3):

In current €M	**2016**	**2017**	**2018**	**2019**	**Average 2016/2019**
Net operating expenses – GRDF request *	1,481.7	1,490.1	1,488.7	1,495.9	1,489.1
Adjustments presented in 2.2 and 2.3	- 63.6	- 63.1	- 63.5	- 66.8	- 64.3
Adjusted net operating expenses *	1,418.1	1,427.0	1,425.2	1,429.1	1,424.9
Additional productivity effort	-	-5.0	-15.0	-20.0	-10.0
Net operating expenses adopted *	**1,418.1**	**1,422.0**	**1,410.2**	**1,409.1**	**1,414.9**
Additional annual productivity effort on net operating expenses	-	+ 0.4%	+ 0.7%	+ 0.4%	+ 0.4%

** excluding expenses to increase the number of customers connected to the gas systems*

For the limited scope of expenses considered "manoeuvrable" presented by GRDF, this objective represents an additional average productivity effort of +0.5% per year over the 2016-2019 period.

GRDF shall keep all of the additional productivity gains and losses that may be generated.

3. Estimated financial incentives under incentive-based regulation of the increase in the number of customers connected to the gas networks

GRDF's ATRD4 tariff covered expenses to promote the use of gas in the amount of €45 M per year, associating them with goals to connect new customers through an incentive in the form of a penalty if those goals were not reached. GRDF reached these goals by spending an average €40 M per year, i.e. 90% of the budget allocated. Almost 820,000 new housing units (corresponding to approximately 500,000 customers) and close to 20,000 new tertiary and industry customers were connected over the ATRD4 period. The objectives set for GRDF by the ATRD4 tariff were exceeded (790,995 new homes and 18,100 new business and industrial customers were connected in 2015).

GRDF requests the coverage by the next tariff of €221.8 M in total operating expenses over the 2016-2019 period, i.e. an average €55.4 M per year (in current euros).

CRE wishes to refocus the regulatory framework on the goal to increase the number of customers connected to the networks in view of the economic optimisation of network use for the benefit of all customers through a drop in the unit tariff in the long run. The present deliberation therefore sets up a new regulatory framework which fully encourages GRDF to obtain results. The authorised income initially covered by the ATRD5 tariff over the 2016-2019 period includes a sum of €182.5 M (i.e. an average €45.6 current per year) under this incentive-based mechanism. Therefore, the ATRD5 tariff does not cover any budget specific to customer connected increases in GRDF's operating expenses (see paragraph I. B. 4).

In general, the adjustment to the expenses to be covered compared to GRDF's request is therefore €39.2 M over the 2016-2019 period, i.e. an average €9.8 M per year.

In current €M	2016	2017	2018	2019	Average 2016/2019
Estimated amount to increase the number of customers connected to the networks	45.7	45.5	45.6	45.8	45.6

4. Expenses resulting from unpaid billsunpaid bills

End customers sign with their natural gas supplier sale contracts that include the supply of gas itself and the use of the gas infrastructure necessary for the delivery of gas to customers. Within this framework, natural gas suppliers, according to the provisions of the transmission contract they signed with GRDF, collect transportation income for the distribution network from their customers and pay it to GRDF. Until presently, suppliers paid to GRDF all of the amounts due by their customers for transportation services, even for those that had not paid their bill.

In its decision of 19 September 2014[22], CoRDiS considered firstly, that "*the transmission mission assigned to the distribution system operator is carried out for the end customer and not for the supplier*" and secondly, that "*to pay the system operator amounts due for the use of the network, the supplier must have received them previously from the end customer*".

This decision reiterates that GRDF must, contrary to previous practice, bear the burden of unpaid bills related to transmission tariffs in the distribution network. In addition, CoRDiS specified that it was up to "*the GRDF company to propose an amendment to the transmission contract for the natural gas distribution network to make the contractual situation as it should have been if the transmission contract for the natural gas distribution network had complied with current regulation from the start".*

GRDF requests the coverage by the ATRD5 tariff of sums that may be due to suppliers in accordance with this decision by CoRDiS. GRDF estimates the annual amount of unpaid bills as from 2016 at 0.9% of its authorised income, i.e. roughly €29 M per year. In addition, GRDF estimates at €160 M the total amount of unpaid bills for the transportation portion of the tariff in accordance with the decision by CoRDiS for the period prior to 31 December 2015, of which roughly €104 M concern clients supplied through the regulated sale tariffs at the time of the unpaid bills. GRDF requests the coverage of these costs by creating an item taken into account in the CRCP and did not include the corresponding costs in the projected trajectories of its operating expenses.

[22] Decision by CRE's committee for dispute settlement and sanctions of 19 September 2014 on the dispute between POWEO DIRECT ENERGIE and GRDF related to the transmission contract for the natural gas distribution network

Annual expenses related to unpaid bills as from 2016

CRE has decided to take into account in the projected trajectory, under the annual expenses for unpaid bills concerning the transportation portion as from 2016, an amount of roughly €29 M per year, representing 0.9% of the projected authorised income.

Expenses related to unpaid bills prior to 31 December 2015

The contractual framework set up since the opening of the market in 2004 was defined and has developed over the years within the gas working group under the aegis of CRE and involving market participants, particularly suppliers. Work and consultations carried out by the GTG and in which GRDF actively participates, contribute to the proper functioning of the market.

The decision by CoRDiS undermines, retroactively, the contractual arrangements resulting from work carried out in the consultation group. In this context, CRE considers it relevant to examine GRDF's request to cover the expenses borne for the transportation portion of unpaid bills prior to 31 December 2015.

CRE considers that the level of the regulated sale tariffs was defined to cover all of the costs of the historic supplier, including costs arising from the transportation portion of unpaid bills.

Therefore, CRE has not taken into account in the ATRD5 tariff the amounts for the transportation portion of unpaid bills of customers under the regulated sale tariff as at 31 December 2015.

However, CRE has decided to include in the expenses to be covered by the ATRD5 tariff the expenses related to the transportation portion of unpaid bills for customers under market supply offers prior to 31 December 2015, for all suppliers. The corresponding amount is estimated by GRDF at roughly €56 M. This amount will be covered over four years, with the same instalments.

Inclusion in the CRCP

The decision by CoRDiS was appealed before the Paris Court of Appeal. In this context, and also given the difficulty in establishing reliable projected trajectories, CRE has decided to take into account in the CRCP the differences between the projected trajectory and the actual expenses borne by GRDF for unpaid bills.

In current €M	2016	2017	2018	2019	Average 2016/2019
Unpaid bills prior to 31 December 2015	14.6	14.6	14.6	14.6	14.6
Annual unpaid bills	28.3	28.7	29.0	29.4	28.8

5. Standard capital expenses

Standard capital expenses have two components: a depreciation component and financial return on fixed capital. These two components are calculated using the valuation and evolution of the assets used by GRDF: the regulated asset base (RAB).

For the current tariff decision, CRE has adopted all of GRDF's investment forecasts.

It has renewed the principles for calculating the capital expenses adopted for previous tariff periods. However, it has changed its estimate of the weighted average cost of capital (WACC) for the natural gas distribution activity used to calculate the financial return.

CRE used in particular, the results of a study on the weighted average costs of capital for electricity and gas infrastructure in France and the conclusions of the audit of the operator's financial return request.

5.1. Rate of return on the RAB

The method adopted to evaluate the rate of return on assets is based on the weighted average cost of capital (WACC), for a standard financial structure. The operator's return should in fact firstly enable it to service the interest payments on its borrowing, and secondly, generate a yield on shareholders' equity comparable to that which it could obtain for investments elsewhere entailing a comparable level of risk. This cost of capital is estimated using the capital asset pricing model (CAPM).

As it does for each tariff decision, CRE re-examined the various parameters used to calculate the WACC. It also commissioned a report from an external provided regarding the cost of capital for electricity and gas infrastructure. The purpose of this report was to present a comparative analysis of the rates used by regulators in Europe and to propose a range of values for each of the components comprising the WACC.

For the present tariff decision, CRE took the value of 5% (real rate before tax) as the weighted average cost of capital to provide a return on GRDF's regulated asset base, using ranges of values for each of the parameters included in the WACC formula. The estimates for each of these parameters are shown in the table below:

Real risk-free rate *	1.6%
Debt spread	0.60%
Asset beta	0.40
Equity beta	0.66
Market risk premium	5.00%
Gearing ratio	50.00%
Corporate tax rate	34.43%
Tax deductibility for financial expenses	75%
Real cost of debt before corporate tax	2.5%
Real cost of equity before corporate tax	7.5%
Real WACC before corporate tax	**5.0%**

**i.e. assumed nominal risk-free rate of 2.8%*

Compared with the values used to set the current tariff for the use of the distribution network (ATRD4), the main changes are:

- the real risk-free rate, set at 1.6%, down compared to the real risk-free rate used for the ATRD4 period. This drop is justified by the significant and long-term drop in interest rates compared to the levels which existed during the previous tariff period;
- the asset beta, set at 0.40 in line with market observations and current gas distribution business betas in Europe. The value adopted lies within the range estimated by the external service provider. It corresponds to a robust estimate and moreover reflects the improvement of the risk involved in regulated business compared to the risk of market risk as a whole.

In accordance with CRE's decision of 17 July 2014 on the incentive-based regulation of GRDF's smart metering system[23], an incentive bonus of 200 basis points will be granted to the metering assets of the Gazpar project (meters, radio modules and concentrators) brought into service between the theoretical start and end of industrial rollout.

Assets under construction are not remunerated with the exception of those related to the Gazpar project, remunerated as normal at the nominal cost of debt, i.e. a rate of 3.4%.

[23] CRE decision of 17 July 2014 on the incentive-based regulation framework of GRDF's smart metering system

5.2. Investment programme

The history of investments carried out between 2012 and 2014 and forecast investments for the 2015-2019 period adopted for the calculation of capital expenditure is as follows:

	Actual			Estimated	Forecast (ATRD5)			
In current €M	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**
Investment expenses	687.4	688.1	709.8	744.6	790.5	896.2	950.7	1,011.7
Networks								
Network development	*193.9*	*207.3*	*229.9*	*200.6*	*235.4*	*261.0*	*273.9*	*266.0*
Moving and adapting facilities	*293.0*	*290.0*	*279.9*	*295.3*	*304.1*	*328.9*	*326.7*	*330.9*
Customer meters and delivery points	*66.4*	*58.9*	*55.4*	*67.0*	*61.4*	*50.9*	*44.9*	*47.1*
Non-network								
Logistics	*49.3*	*42.6*	*42.3*	*47.3*	*49.8*	*58.8*	*43.2*	*43.7*
Intangible assets	*70.6*	*59.8*	*58.5*	*81.5*	*97.9*	*95.7*	*93.1*	*78.2*
Energy transition[24]	*0.0*	*0.0*	*0.0*	*0.0*	*0.5*	*0.0*	*0.8*	*0.5*
Gazpar project								
Gazpar	*14.3*	*29.6*	*43.9*	*52.8*	*41.4*	*101.0*	*168.1*	*245.4*

For the 2016-2019 period, the investments envisaged by GRDF increase by an average 23% compared to the amounts forecast in 2015.

The increase in investments from 2015 is due:

- partly to the start of work following hazard studies ("*multifluides*" decree[25] and characterisation of asbestos risk), the surge in momentum in the equipping of network stations with telemonitoring systems and reconstruction of GRDF's IT systems;
- partly to the deployment of the Gazpar project.

CRE has adopted all of the investment forecasts as formulated in GRDF's request.

In addition, CRE has set up for the ATRT5 tariff period two incentive-based regulation mechanisms for investment spending in order to encourage the operator to control its investments without compromising the completion of work needed for the operation and safety of the network (see paragraph I. B.1. 2).

5.3. Projected capital expenses trajectory for the 2016-2019 period

GRDF's projected RAB amounts are as follows.

In current €M	**2016**	**2017**	**2018**	**2019**
RAB as at 1 January of year *Y*	14,180.9	14,510.7	14,784.4	15,125.2

[24] The "Energy transition" line does not include expenses related to biomethane facility connections, taken into account in the "Network development" line.

[25] Decree No. 2012-615 of 2 May 2012, on the safety, authorisation and declaration of public utility for gas, hydrocarbons and chemical transportation pipes.

The projections for GRDF's standard capital expenses are as follows:

In current €M	2016	2017	2018	2019
Standard CAPEX - GRDF request	1,651.7	1,703.6	1,744.1	1,793.7
Standard CAPEX - Trajectory adopted	1,504.6	1,554.2	1,591.7	1,637.6
of which "non-network" standard CAPEX[26]	108.4	117.2	118.3	118.6

6. Inclusion of the ATRD4 tariff CRCP balance

The total estimated GRDF CRCP balance for the ATRD4 tariff to be taken into account in the calculation of the authorised income is +€577.5 M_{2015} and breaks down as follows:

- €371.3 M_{2015} for the CRCP balance for 2014 not cleared as at 31 December 2015;
- €206.2 M_{2015} for the provisional CRCP balance for 2015. The main contributions to the CRCP for 2015 are the items related to:
  - income from the volumes of gas distributed: since the year 2015 was unusually warm, the quantities distributed totalled approximately 275 TWh (provisional value) whereas the tariff trajectory had forecast 317 TWh. The outcome is an income difference of roughly €272 M;
  - capital expenses: the difference in income in the capital expenses item is estimated at -€41 M. This difference is due mainly to GRDF's actual investment volume, which was lower than the amount forecast during the preparation of the ATRD4 tariff. This difference is partly due to inflation that was actually lower than the figure taken into account during the preparation of the ATRD4 tariff;
  - expenses related to losses and various discrepancies: the income difference is estimated at -€23 M due mainly to the level of the distribution variance account estimated at €25 M.

The CRCP balance for the ATRD4 tariff, i.e. €601.7 M_{2016}, will be cleared over a four-year period, in equal instalments, with an interest rate equal to 2.8%, which corresponds to the nominal risk-free rate (see paragraph II. A. 5. 1.), applied annually.

This leads to an increase in the costs to be covered by the ATRD5 tariff by €156.7 M per year.

The CRCP balance for 2015 taken into account in the present decision is a provisional amount. The definitive amount will be taken into account when the scale of tariffs changes as at 1 July 2017.

7. Authorised income for the 2016-2019 period

The authorised income for the 2016-2019 tariff period equals the sum of net operating expenses plus the standard capital expenses, plus the instalment to clear the ATRD4 CRCP balance, plus expenses related to the transportation portion of unpaid bills and the projected amount of the incentive to increase the number of customers connected to the networks. It breaks down as follows:

€M current	2016	2017	2018	2019	Average 2016/2019
Net operating expenses (Net OPEX)	1,418.1	1,422.0	1,410.2	1,409.1	1,414.9
Estimated level of incentive to increase the number of customers connected to the networks	45.7	45.5	45.6	45.8	45.6
Expenses related to the transportation portion of unpaid bills	42.8	43.3	43.6	44.0	43.4
Standard capital expenditure (standard CAPEX)	1,504.6	1,554.2	1,591.7	1,637.6	1,572.0
Clearing of the ATRD4 CRCP balance (2014 balance + 2015 estimate)	156.7	156.7	156.7	156.7	156.7
Authorised income	**3,168.0**	**3,221.8**	**3,247.8**	**3,293.2**	**3,232.7**

[26] Standard capital expenses concerned by the incentive-based regulation of "non-network" capital expenses

B. Assumptions concerning the quantity of gas distributed and the number of customers served

The unit tariffs depend on the quantity of gas distributed and the number of end customers connected to the distribution networks.

1. Changes recorded in the period covered by the ATRD4 tariff

The ATRD4 tariff for the 2012-2016 period had forecast an average drop in quantities distributed of 0.5% per year assuming average weather conditions, and an average drop in the number of customers connected to GRDF's distribution networks of 0.3% per year.

The volumes actually distributed against average weather conditions proved lower than forecast. Over the 2012-2014 period, the actual quantities of natural gas supplied under average weather conditions dropped an average 1.31% per year. However, the number of customers actually connected remained stable and slightly higher than the forecasts which projected a drop.

Weather-corrected consumption data and the number of customers connected over the ATRD4 tariff application period are as follows:

	Estimated ATRD4 **2012**	Actual **2012**	Estimated ATRD4 **2013**	Actual **2013**	Estimated ATRD4 **2014**	Actual **2014**	Estimated ATRD4 **2015**	Estimated **2015***
Number of customers	11,082,226	11,044,641	11,030,445	11,040,360	10,987,277	11,041,353	10,955,699	11,041,563
Weather-corrected consumption (GWh)	326,943	298,431	324,193	295,509	322,493	290,646	320,866	289,210
Actual consumption (GWh)		304,016		318,576		261,522		

**estimate provided end of November 2015 by GRDF*

GRDF accounts for the drop in consumption outside of weather contingencies:

- for the industrial and business customers segment, by the slowdown in activity;
- for the residential customers segment, by the improvement in energy efficiency.

The stability in the number of customers is due to several factors with opposite effects: cancellations by customers using gas mainly for cooking (roughly 300,000 cancellations by such customers over the 2011-2014 period), abandonment of dilapidated housing and effects of the economic crisis, offset in particular by new connections thanks to actions to increase the number of customers connected to the networks (almost 800,000 homes representing about 500,000 residential customers, and more than 20,000 business and industrial customers).

2. Trajectories adopted for the ATRD5 tariff

GRDF estimates that, over the 2016-2019 period, the overall drop in consumption will slow down with an average pace of -0.75% per year, while the number of customers will remain stable with an average change of +0.7% per year, which includes the effects expected from its development actions as projected for the period.

A study by Météo France on behalf of GRDF, ENGIE, EDF and RTE of the 1980 to 2009 period concluded that there was an increase in baseline temperature related to global warming. According to GRDF, the weather-correction model used for the ATRD4 tariff leads to an overestimation of natural gas consumption forecasts.

Therefore, CRE had submitted for public consultation two methodological developments proposed by GRDF for the ATRD5 tariff:

- recalibration of the weather-correction model, which would lead to a 7.8 TWh drop per year in forecast weather-corrected gas volumes distributed;
- a new climate baseline, which would lead to an additional 6.8 TWh drop per year in forecast weather-corrected gas volumes distributed.

Most participants were in favour of taking into account the changes to the forecast model proposed by GRDF which would improve the quality of forecasts for gas supplied.

CRE adopts GRDF's request to recalibrate the weather-correction model (-7.8 TWh) and the climate baseline (-6.8 TWh) which would improve the reliability of forecasts of natural gas consumption for the ATRD5 period. The present tariff decision is therefore based on a new weather-correction model and a new climate baseline, different to those used for the ATRD4 tariff.

In addition to these effects, there are the consequences of the distortion of GRDF's customer portfolio, which totals around 17.6 TWh. In particular, GRDF highlights the drop in consumption and energy savings related to:

- changes in heating systems;
- building renovation;
- other effects of the drop in the unit consumption of homes, including those that will be made possible by the rollout of Gazpar smart meters at customers' homes during the next tariff period.

Therefore, the weather-corrected forecasts of quantities of gas distributed for 2016 proposed by GRDF for the ATRD5 period is lower by about 32.2 TWh compared to that used for the ATRD4 period.

The number of customers connected to the networks remained stable over the ATRD4 tariff period. GRDF plans to maintain this number throughout the ATRD5 tariff period. These trajectories take into account the outcomes expected of actions to increase the number of customers connected to the gas networks, which GRDF intends to conduct over the next tariff period (see paragraph I. B. 4.)

The forecast quantities distributed and number of customers connected adopted by CRE are as follows:

	Weather-corrected estimate	ATRD5 forecast						
	2015	**2016**	**2017**		**2018**		**2019**	
				(2016-2017 evolution)		(2017-2018 evolution)		(2018-2019 evolution)
Number of customers	11,041,563	11,047,345	11,051,185	+ 0.03%	11,057,190	+ 0.05%	11,063,796	+ 0.06%
Consumption (in GWh)	289,210	288,626	285,597	- 1.05%	283,868	- 0.61%	282,188	- 0.59%

C. GRDF's ATRD5 tariff trajectory

GRDF's scale of tariffs, entering into effect as at 1 July 2016, is defined by the present decision. It corresponds to an increase of 2.76% compared to the current scale of tariffs.

The revision of GRDF's scale of tariffs, as at 1 July of each year, commencing 1 July 2017, is calculated by applying the following percentage to the tariff in force:

$$Z = CPI - X + k$$

Where:

- Z: is the change in the scale of tariffs as at 1 July, expressed as a percentage;
- CPI: is the average annual change recorded over the previous calendar year in the consumer price index, excluding tobacco products, as calculated by INSEE for all households across all of France (INSEE reference No. 641194);
- X: is the annual percentage change in the scale of tariffs equal to 0.8%;
- k: is the change in the scale of tariffs, as a percentage, arising from the clearing of the CRCP balance.

The value k cannot by itself result in an increase or decrease of over 2% in the scale of tariffs in force. The annual change in GRDF's scale of tariffs will therefore be in the range (CPI – 2.8%) to (CPI + 1.2%).

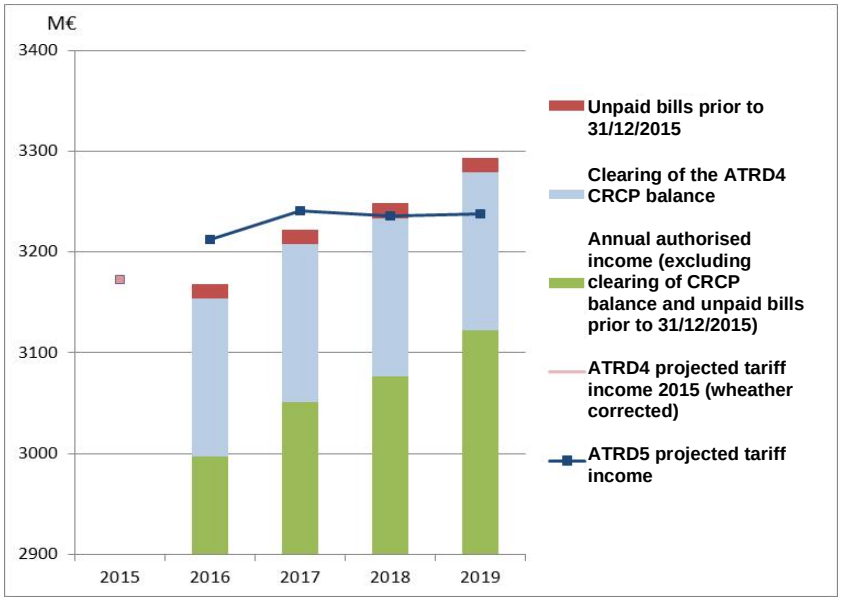
Indicatively, the projected corresponding values are as follows:

	2016	2017	2018	2019
Estimated inflation between year *Y-2* and year *Y-1* (CPI provisional value)	0.10%	0.80%	1.10%	1.20%
Annual percentage change X		0.80%	0.80%	0.80%
Estimated change as at 1 July of year *N* (excluding clearing of CRCP balance, i.e. k = 0.0%)	2.76%	0.00%	0.30%	0.40%

At the end of 2019, the application of the ATRD5 scale of tariffs will have enabled the ATRD4 CRCP balance to be cleared in four years as well as the amounts corresponding to the transportation portion of unpaid bills prior to 31 December 2015. These expenses represent significant amounts and are not recurring. The definition of an annual percentage change X equal to 0.8% shall bring, at the end of the tariff period, the level of income generated by the ATRD5 scale of tariffs close to the level of authorised income excluding these non-recurring costs.

The tariff change as at 1 July 2016, and the annual changes to the scale of tariffs over the years 2017 to 2019, are determined so that the total projected income resulting from the application of the ATRD5 scale of tariffs to assumptions concerning quantities distributed and number of customers served is equal, in present value from 2016 to 2019, to the total provisional authorised income for the period.

The discount rate used is 2.8%, which corresponds to the nominal risk-free rate (see paragraph II. A. 5. 1).



Given the balance between tariff income and authorised income over the 2016-2019 period and annual changes to the scale of tariffs, there are annual differences between tariff income and the authorised income. The discounted sum of these annual differences over the 2016-2019 period, is by construction, equal to 0.

Therefore, the projected authorised income and estimated income are as follows over the 2016-2019 period:

In current €M	2016	2017	2018	2019	Net discounted value
Forecast authorised income	3,168.0	3,221.8	3,247.8	3,293.2	12,407.2
Projected tariff income (excluding clearing of CRCP balance, i.e. k = 0.0%)	3,212.1	3,241.0	3,236.0	3,237.6	12,407.2
Annual differences between projected income and projected authorised income	44.2	19.1	-12.0	-55.9	0.0

III. TARIFF FOR THE USE OF GRDF'S PUBLIC NATURAL GAS DISTRIBUTION NETWORKS

A. Tariff rules

1. Definitions

Delivery point:

Exit point from a distribution network where a DSO delivers gas to an end customer in fulfilment of a supply contract on the distribution network.

Transportation - distribution interface point (*Point d'interface transport distribution – PITD*):

Physical or notional interface point between a transmission system and a distribution system for natural gas.

Second tier distribution system operator ("Second-tier DSO"):

A DSO is described as "second tier" if its network is supplied by means of another natural gas distribution system upstream of its service area. The upstream DSO is described as "first tier".

Expenses and revenues clawback account (CRCP):

The CRCP is an off-balance sheet fiduciary account funded at regular intervals by all or some of the variances in expenses or income between the actual expenses and income figures recorded and the forecast expenses and income figures for predefined accounts items. All or part of the balance of this account is cleared by means of a decrease or increase in the scale of tariffs.

2. Billing per delivery point

The tariff is applied per delivery point. The amounts owed for each delivery point of a supplier's clients are totalled in that supplier's monthly bill.

3. Services covered by the tariff for the use of GRDF's public natural gas distribution networks

Use of GRDF's distribution networks cannot give rise to any billing other than that resulting from application of the tariff herein, with the exception of additional services for which tariffs are set by CRE's decision.

The tariff for the use of GRDF's public distribution network covers at least the following services:

- services relating to quality and safety:
  - continuity of supply under the conditions set out in Article R.121-11 of the French Energy code;
  - notice of service interruptions for engineering work, in accordance with Article R.121-12 of the Energy code;
  - provision of a number for reporting emergencies and troubleshooting, available 24/7;
  - a 24-hour emergency call-out service for safety-related problems, pursuant to the amended administrative order of 13 July 2000 on safety regulations for the distribution of combustible gas through pipelines;
  - guaranteed calorific value specified by the administrative orders of 16 September 1977 and 28 March 1980;
  - available pressure upstream from the delivery point, in compliance with the standard delivery terms and conditions published by the DSO;
  - initial response on customer site for troubleshooting or repair in the event of gas supply failure;
  - interventions for sealing metering equipment;
  - assessment of indoor equipment that has been idle for over six months and measures to raise the awareness of customers and gas industry stakeholders of the safety issues surrounding indoor equipment;
  - support to customers in situations of serious and immediate danger concerning domestic indoor gas equipment;

- services relating to consumption metering:
  - provision of a meter and maintenance and replacement of faulty metering and depressurisation equipment when flow rate is under 16 m^3/h;
  - periodic checking of meters and converter calibration;
  - continuity of metering and depressurisation;
  - periodic meter reading, as set out in section 5 hereunder;
  - notice of meter-reader visits schedules for customers under half-yearly meter reading;
  - option for customers under half-yearly meter reading, to read their own meters and forward the index reading;
  - correction of an index published through a self-read index provided by the customer and forwarded by the supplier;
- services relating to contract management:
  - administrative tasks relating to supplier changeovers or amendments to supply contracts;
  - work at the customer site in the event of termination;
- other:
  - making telephone appointments for connection assessments;
  - for second tier DSOs, guarantee of supply of standard minimum pressure at the entry point of the downstream DSO network;
  - notice to customers or authorised third parties of gas consumption data at the customer's delivery point.

4. Structure and choice of tariff options

The tariff includes four main options:

- three two-part options, T1, T2 and T3, each comprising a subscription and a charge proportional to the quantities delivered;
- one three-part option, T4, comprising a subscription, a charge proportional to the contracted daily capacity, and a charge proportional to the quantities delivered.

The supplier concerned decides which tariff option is applied to each delivery point.

For all end customers in an apartment block or a group of housing units without individual meters but where there is a communal meter, and where a supply contract has been taken out collectively, a two-part tariff is applicable comprising:

- a subscription equal to tariff option T1 applied to the number of housing units supplied with gas;
- a proportional charge equal to that for tariff option T1 applied to the gas consumption measured by the communal meter.

For end customers without individual meters or a communal meter, the tariff applicable is a fixed-rate tariff based on the T1 option and gas consumption of 660 kWh per year.

The tariff also includes a tariff option known as the "proximity tariff" (TP), for large customers located near to the gas transmission system and already supplied by the distribution networks. This tariff option comprises a subscription, a charge proportional to the contracted daily capacity, and a charge proportional to the straight-line distance between the delivery point in question and the nearest transmission system. This charge proportional to distance is adjusted by a multiplier coefficient that depends on the population density of the municipality where the delivery point in question is located.

5. Delivery point meter-reading method

Cyclical meter reading is done at the following frequency:

i. For a newly commissioned metering and estimation point (PCE), the standard meter reading frequency of a delivery point in the public natural gas networks are as follows:

- if the reference annual consumption (RAC) declared is lower than 300,000 kWh, the standard meter-reading frequency is half-yearly, with the exception of customers equipped with a smart meter that have a standard monthly meter reading;
- if the RAC is between 300,000 and 5,000,000 kWh, the standard meter reading is on a monthly basis;
- if the RAC declared is higher than 5,000,000kWh, standard meter reading is on a daily basis.

ii. For a PCE already connected to a gas distribution network, standard meter reading frequency of a delivery point in the public natural gas network is as follows:

- if the RAC is lower than 500,000 kWh, the standard meter-reading frequency that was applied the previous year is maintained, with the exception of PCE's equipped with a smart meter that have a standard monthly meter reading;
- if the RAC is between 500,000 and 10,000,000 kWh, the standard meter reading is on a monthly basis;
- if the RAC declared is higher than 10,000,000kWh, standard meter reading is on a daily basis.

Exceptions to these rules:

- once the PCE presents for the third consecutive year a RAC between 3000,000 kWh and 500,000kWh, standard meter reading is on a monthly basis;
- if the RAC is between 1,000,000 kWh and 10,000,000 kWh, the standard meter reading frequency that was applied the previous year is maintained, if it was on a monthly or daily basis;
- once the PCE, for which standard meter frequency was on a daily basis the previous year, presents, for the fourth consecutive year a RAC lower than or equal to 5,000,000 kWh, standard meter reading of the delivery point is on a monthly basis;
- once the PCE presents for the third consecutive year a RAC higher than 5,000,000 kWh, standard meter reading of the delivery point is on a daily basis.

For the application of the rules outlined above, only the RAC used as from 1 April 2016 is taken into account.

iii. In all cases, the meters of customers with major intra-monthly consumption variations are read on a daily basis. This applies to customers that meet for the second consecutive year the following conditions:

- the RAC is higher than 2,000,000 kWh;
- the quantities shipped over the two highest consumption months of the year are greater than 50% of the annual consumption recorded. This ratio is calculated over the annual period between 1 April and 31 March.

Customers cannot have their standard meter-reading frequency switched back to a monthly basis, if they were considered to have major intra-monthly consumption variations during one of the last three years.

iv. Customers that have subscribed to tariff options T4 and TP have daily meter readings, regardless of their RAC.

The shipper may choose a more frequent meter reading than that defined by the rules above for the customer concerned and for each delivery point. The tariff applied is indicated in the DSO's service catalogue.

6. Monthly or daily subscription charges for daily capacity

Tariff options T4 and TP include a charge for annual subscription for daily capacity. It is also possible to subscribe for daily capacities on a monthly or daily basis.

The monthly subscription charge for daily capacity is equal to the annual subscription charge for daily capacity multiplied by the following coefficients:

Months	Monthly charge as a proportion of the annual charge
January - February	8/12
December	4/12
March - November	2/12
April – May – June – September – October	1/12
July - August	0.5/12

When smooth running of the network so allows, daily subscriptions of daily capacity are sold by GRDF to meet sporadic and exceptional end-customer needs.

The daily subscription charge applicable for daily capacity is equal to 1/20th of the monthly charge for the appropriate month.

7. Change in the annual subscription level for a delivery point

For a delivery point connected to a distribution network and having a subscription-based tariff option:

- a change, upwards or downwards, in the annual subscription level of a delivery point is authorised if no change in the opposite direction occurred within the 12 months preceding the requested date of effect;
- for an upward change in the annual subscription level of a delivery point occurring less than 12 months after a downward change, the daily capacity equal to the lower value between the subscription level before the downward change and that resulting from the increase shall be deemed subscribed as from the date of the decrease for the period concerned;
- a downward change in the annual subscription level of a delivery point, for which the date of effect requested is less than 12 months after an increase in the annual subscription level, is not authorised;
- the previous provisions also apply in the event of a supplier changeover for the given delivery point.

8. Penalties for exceeding contracted daily capacity

Each month, for tariff options T4 and TP, exceeding daily capacity subscribed is subject to fines.

The excess over daily capacity taken for any given month is equal to the sum of the maximum excess over daily capacity for the month in question plus 10% of other excesses over daily capacity for the month that are greater than 5% of the contracted daily capacity.

The penalty is payable when the excess calculated in this way is greater than 5% of the contracted daily capacity. For the portion of the excess between 5% and 15% of the contracted daily capacity, the penalty is equal to this portion of the excess multiplied by two times the monthly charge for daily capacity as defined in the previous section.

For the portion of the excess above 15% of the contracted daily capacity, the penalty is equal to this portion of the excess multiplied by four times the monthly charge for daily capacity as defined in the previous section.

9. Grouping delivery points

Under option T4, the grouping of daily capacity subscription charges for several delivery points is permitted when the following conditions are simultaneously met:

- the relevant delivery points are on the distribution network of one DSO and are supplied from the same PITD;
- the gas delivered to each of the relevant delivery points is intended to meet, after transformation, the needs of a single end user on a single site. This utilisation leads to alternate consumption of all or part of the natural gas delivered.

The annual subscription charge for daily capacity for option T4 is increased by 20% when subscription charges for more than one delivery point are grouped together for billing. The annual subscription remains due for each delivery point.

10. Supply of one delivery point by more than one supplier

When several suppliers simultaneously supply a single delivery point, they must select the same tariff option. The selected tariff applies fully to each of them, with the exception of the T4 option and the "proximity tariff" (TP) option for which the sum due monthly in respect of the subscription and the charge proportional to the distance is split between the suppliers concerned proportional to the contracted capacities for the month in question for that delivery point. When, for a given month, the total contracted capacity is zero, the amount is split on the basis of the previous month.

11. Tariff handling for second tier DSOs

A DSO is described as "second tier" if its network is supplied by means of another natural gas distribution system upstream of its service area. The upstream DSO is described as "first tier".

In terms of tariffs and contracts, the second tier DSO's distribution network is made directly accessible to shippers from the transmission network in the following way:

- suppliers pay the second tier DSO a single tariff covering the gas supply service from the relevant PITD to the end customer's delivery point;
- the charges to be covered by second tier DSO tariffs include the costs of supply over the first tier DSO's distribution network;
- these costs form the subject matter of a contract between the first and second tier DSOs, or a protocol in the event they are both one and the same legal entity, submitted to CRE.

The first tier DSO invoices the second tier DSO for 50% of the transportation costs, calculated using the first tier DSO's ATRD tariff. This 50% proportion applies irrespective of the upstream DSO.

The first tier DSO bills the second tier DSO for the full costs of connecting to the first tier DSO's network, i.e.

- the full cost of the connection;
- if applicable, the full cost of the intake system (also known as an "extension");
- and the full costs of upgrading the first tier DSO's system when those costs are directly and immediately attributable to the second tier DSO (or otherwise, the share of the cost of engineering work that is attributable to the second tier DSO in proportion to peak flow rates).

When the upstream DSO is different to the downstream DSO, all of the costs associated with metering at the interface between the two DSOs are borne by the upstream DSO, i.e.:

- the full cost of investments related to the metering station. These investments include in particular, telemetering, civil engineering, supply and layout of the metering station;
- all operating, maintenance and upgrading costs, related to the use of the metering station.

the first tier DSO also bills the second tier DSO for any additional services calculated using the first tier DSO's service catalogue.

B. <u>Equalised tariff for the use of GRDF's public natural gas distribution networks</u>

The tariff for use of GRDF's public natural gas distribution networks, other than those licensed by virtue of the provisions of Article L.432-6 of the French Energy Code, is equalised within the GRDF service area.

The tariff defined hereunder is intended to apply for approximately four years commencing 1 July 2016, with an automatic adjustment on 1 July every year.

1. Equalised GRDF tariff applicable as from 1 July 2016 to 30 June 2017

Main tariff options:

The tariff for use of public natural gas distribution networks within GRDF's service area is as follows:

Tariff option	Annual subscription in €	Proportional charge in €/MWh	Annual subscription charge for daily capacity in €/MWh/d
T1	34.20	28.72	
T2	135.36	8.35	
T3	764.40	5.82	
T4	15,717.36	0.82	204.60

"Proximity tariff" (TP) option:

The tariff charges for the "proximity tariff" option are as follows:

Tariff option	Annual subscription in €	Annual subscription charge for daily capacity in €/MWh/d	Annual distance charge in €/metre
TP	36,668.52	102.00	66.96

A multiplier is applied to the annual distance charge. It is equal to:

- 1 if the population density of the municipality is under 400 inhabitants per km^2;
- 1.75 if the population density of the municipality is between 400 and 4,000 inhabitants per km^2;
- 3 if the population density of the municipality is over 4,000 inhabitants per $km^{2.}$

Customers with no individual meter but having a communal meter:

For all of the end customers in an apartment block or group of housing units without individual meters but where there is a communal meter and that have taken out a collective supply contract, a subscription equal to that of tariff option T1 is charged, applied to the number of units supplied in gas, and a proportional charge equal to that of tariff option T1 is applied to the gas consumption measured by the communal meter.

Customers with no individual or communal meter:

For end customers with no individual meter or communal meter associated with a communal supply contract, the tariff applicable is an annual fixed charge of €53.16.

When a gas meter reading simultaneously includes consumption payable at both the old and new tariffs, it is split in proportion to the number of days in each period.

2. Equalised GRDF tariff applicable as from 1 July 2017

The GRDF scale of tariffs established by the present decision is automatically adjusted on 1 July of every year *Y*, commencing 1 July 2017, by applying the following percentage change to all tariff charges in force as at 30 June of year *Y*:

$$Z_Y = CPI_Y - X + k_Y$$

Where:

- Z_Y: change in the scale of tariffs as at 1 July of year *Y*, expressed as a percentage and rounded off to the nearest 0.01%;
- CPI_Y: change in the average value of the consumer price index excluding tobacco, as calculated by the French national statistics office, INSEE, for all households in the whole of France (INSEE reference 641194), recorded for civil year *Y-1*, compared to the average value of the same index recorded for civil year *Y-2*;
- X: the annual percentage change in the scale of tariffs, equal to 0.80%;
- k_Y: change in the scale of tariffs, expressed as a percentage, capped at +/-2%, resulting from clearing the balance of the CRCP on 1 January of year *Y* (calculated based on the terms described in paragraph III. B. 2.2.).

The resulting scale of tariffs is published by CRE before 1 July every year in the official gazette (*Journal Officiel*) of the French Republic and submitted to the ministers of energy and the economy.

2.1. Calculation of the CRCP balance as at 1 January of year Y

The CRCP balance of GRDF's ATRD5 tariff as at 1 January 2016, is equal to the difference between the definitive amount of the CRCP balance of the ATRD4 tariff and the provisional amount, equal to €601.7 M, taken into account to prepare the ATRD5 tariff.

The CRCP balance as at 31 December of year Y is calculated as the sum:

- of the CRCP balance as at 1 January of year *Y*;
- and the difference, for year *Y*, between:
  - the authorised income calculated ex post for the portion proportional to quantities shipped, as defined below;
  - income received by GRDF as part of tariff charges proportional to quantities of gas shipped.

The CRCP balance as at 1 January of year *Y+1* is obtained by discounting the CRCP balance as at 31 December of year *Y* at the risk-free rate in effect of 2.8%.

The CRCP balance at the end of the tariff period also takes into account amounts related to:

- expenses for the transportation portion of unpaid bills;
- incentive-based regulation for the increase in the number of customers connected to the gas networks;
- incentive-based regulation for research and development costs.

2.2. Calculation of the k_Y coefficient for the clearing of the CRCP balance

The change in the scale of tariffs as at 1 July of year Y takes into account a coefficient k_Y, which aims to clear, by 30 June of year *Y+1*, the CRCP balance of 1 January of year *N*. The coefficient k_Y is capped at +/- 2%.

A positive (negative respectively) CRCP balance as at 1 January of year *Y* is reflected by a positive (negative respectively) coefficient k_Y.

The determination of the coefficient k_Y requires the assessment of provisional clearing from 1 January of year *Y* to 30 June of year *Y+1*. This provisional clearing is assessed as the difference between:

- provisional income resulting from the application of the scale of tariffs actually implemented over this period;
- provisional income resulting from the application of the scale of tariffs obtained by recalculating the annual changes commencing 2017 with coefficient k_Y at zero.

This provisional clearing is assessed on the basis of the reference values defined hereunder.

2.3. Authorised income calculated ex post for the portion proportional to quantities shipped

For each year *Y* starting from 2016, the authorised income calculated ex post for the portion proportional to quantities shipped is equal:

- to the sum of the amounts adopted for the following expense items:
  - estimated operating expenses giving rise to incentives;
  - estimated "non-network" standard capital expenses giving rise to incentives;
  - other standard capital expenses;
  - expenses related to losses and various discrepancies;
  - expenses related to the transportation portion of unpaid bills;

- expenses related to the "Tulipe" project;
- the annual difference between projected income and projected authorised income;
- clearing of the CRCP balance of the ATRD4 tariff;

- from which is deducted the sum of the amounts adopted for the following income items:
  - projected income related to subscriptions, the charge proportional to the contracted daily capacity and the charge proportional to distance;
  - non-tariff income not giving rise to incentives;
  - differences in income related to unplanned changes in the rates for additional services;
  - income for fines received due to customers with tariff options T4 and TP exceeding the capacity contracted;
- and to which is added the sum of the amounts adopted for financial incentives as part of:
  - incentive-based regulation of unit cost of investments in the networks;
  - incentive-based regulation of the increase in the number of customers connected to the gas networks;
  - incentive-based regulation specific to the Gazpar smart metering project;
  - incentive-based regulation of quality of service.

For each item, the method for calculating the amount adopted is presented in detail below.

2.4. Expense items taken into account for the ex post calculation of the authorised income for the portion proportional to quantities shipped

a) Estimated net operating expenses giving rise to incentives

Estimated net operating expenses giving rise to incentives correspond to net operating expenses taken into account for the ATRD5 tariff, with the exception of expenses related to losses and various discrepancies, which have a specific incentive-based regulation, and non-tariff income that is not tied to any incentive.

The reference values for estimated net operating expenses giving rise to incentives are as follows:

In current €M	2016	2017	2018	2019
Reference value for estimated net operating expenses giving rise to incentives	1,507.8	1,530.3	1,527.6	1,530.4

The amount used in the ex post calculation of the authorised income for the portion proportional to quantities shipped takes into account the difference between forecast and actual inflation.

This amount is equal to the reference value for year *Y*:

- divided by forecast inflation between year 2015 and year *Y* - 1;

	2016	2017	2018	2019
Forecast inflation between year 2015 and year *Y-1*	0.00%	0.80%	1.91%	3.13%

- multiplied by actual inflation between year 2015 and year Y-1. Actual inflation is defined as the change in the average value of the consumer price index excluding tobacco, as calculated by INSEE for all households in the whole of France (INSEE reference 641194), recorded for civil year Y-1, compared to the average value of the same index recorded for civil year 2015.

b) Estimated standard "non-network" capital expenses giving rise to incentives

The reference amount used for the ex post calculation of the authorised income is equal to the standard

capital expenses related to asset groups G4B, G7 and G8, excluding new IT projects[27]. These asset groups include the following assets "Property", "Fittings", "Equipment", "Vehicles", "IT" and "Micro-computing hardware". These standard capital expenses are calculated based on the forecast accounting base taken into account in the elaboration of the ATRD5 tariff and on actual inflation[28].

Estimated values for standard "non-network" capital expenses giving rise to incentives are as follows:

In current €M	2016	2017	2018	2019
Estimated values for standard "non-network" capital expenses giving rise to incentives	108.4	117.2	118.3	118.6

The forecast accounting base is that used to determine these values.

c) Standard capital expenses not giving rise to incentives

The reference amount taken into account for the ex post calculation of authorised income is equal to standard capital expenses, except for those taken into account in the "non-network" capital expenses giving rise to incentives, i.e. asset categories G4B, G7 and G8 excluding new IT projects[29].

Estimated values for these capital expenses are as follows:

In current €M	2016	2017	2018	2019
Estimated values for standard capital expenses not giving rise to incentives (current €M)	1,396.2	1,437.0	1,473.4	1,519.0

These standard capital expenses are calculated using actual investments, asset disposals and actual inflation.

d) Expenses related to losses and various discrepancies

An annual reference amount for losses and various discrepancies (LVD) is determined for year *N* using the following formula:

$$LVD_Y = V_Y * P_Y + TC_Y$$

Where:

- V_Y is the annual reference volume;
- P_Y is the annual reference price;
- TC_Y is the reference annual transportation cost.

For the ex post calculation of authorised income, the amount taken into account for losses and various discrepancies is equal to the sum:

- of the reference annual LVD_Y amount:
- 70% of the difference between actual expenses related to the losses and various discrepancies borne by GRDF for year *Y* and this annual reference LVD_Y amount.

The parameters used to calculate the reference annual LVD_Y amount are defined below.

i Reference annual volume

The reference annual volume of losses and various discrepancies is obtained by applying the theoretical rate of loss to the actual quantities distributed, i.e.:

V_Y = theoretical rate of loss *year Y* x quantities actually distributed *year Y*

The theoretical rate of loss adopted for the 2016-2019 period is as follows:

[27] "*Reconstruction des SI*" and "*SI transformant*" projects
[28] For the calculation of standard capital expenses, actual inflation is calculated for the period from July *Y-1* to July *Y*. The index used is the INSEE (French national statistics office) index 641194 for consumer prices excluding tobacco products, for the whole of France.
[29] "*Reconstruction des SI*" and "*SI transformant*" projects

% of quantities distributed	2016	2017	2018	2019
Theoretical rate of loss	0.73%	0.72%	0.71%	0.69%

ii Reference annual price

The reference annual price P_Y is equal to the average price of a representative basket of goods, sold at the gas tittle transfer point PEG Nord. This basket of goods and the breakdown of the reference prices used are specified in a confidential annex to this document.

iii Reference annual transportation cost

The reference annual transportation cost is calculated in particular based on the third-party access to the transmission network (ATRT) tariff charges, applied to the reference volumes V_Y. The breakdown of this reference annual transportation cost is specified in a confidential annex to this document.

e) Expenses related to the transportation portion of unpaid bills

The reference annual amount used for the ex post calculation of authorised income is equal to the sum of:

- the expenses and income for year *Y* covering the transportation portion of unpaid bills for consumption after 1 January 2016 for customers under market offers or regulated sale tariffs;
- and a quarter of the most recent evaluation of expenses related to the transportation portion of unpaid bills for consumption prior to 31 December 2015 for customers under market offers (*hereafter "amount evaluated for unpaid bills prior to 31 December 2015*").

Moreover, the CRCP balance at the end of the tariff period takes into account the difference between:

- the sum of "*amounts evaluated for unpaid bills prior to 31 December 2015*) taken into account each year of the tariff period, for the authorised income calculated ex post for the portion proportional to quantities shipped;
- the expenses and income recorded for transportation portion unpaid bills for consumption prior to 31 December 2015 for customers under market offers.

f) Expenses related to the "Tulipe" project

At the request of GRDF and based on the results of the technical and economic assessment conducted by CRE, a CRE deliberation may determine the reference amounts corresponding to the forecast costs of the "Tulipe" project not included in the ATRD5 forecast trajectories. The reference amount for year *Y*, defined by the abovementioned deliberation, shall therefore be taken into account for the ex post calculation of authorised income.

In the absence of such a deliberation, the reference amount is zero.

g) Annual differences between projected income and projected authorised income

Annual differences between projected income and projected authorised income are those resulting from the balance over the 2016-2019 period between projected income and projected authorised income used to define the ATRD5 tariff.

Year *Y*, the annual difference used for the ex post calculation of authorised income is as follows:

In current €M	2016	2017	2018	2019
Annual differences between projected income and authorised income	44.2	19.1	-12.0	-55.9

h) Clearing the CRCP balance of the ATRD4 tariff

The reference amount used to clear the CRCP balance for the ATRD4 tariff is as follows:

In current €M	2016	2017	2018	2019

Clearing of the ATRD4 CRCP balance	156.7	156.7	156.7	156.7

2.5. Income items used for the ex post calculation of authorised income for the portion proportional to quantities shipped

a) Projected income related to subscriptions, charge proportional to the contracted daily capacity and charge proportional to distance

The reference amount used for the ex post calculation of authorised income is equal to the projected income related to subscriptions, to the charge proportional to the contracted daily capacity taken out by customers under tariff options, T4 and TP, and to the charge proportional to distance for customers under option TP. This forecast income is calculated using the scale of tariffs in effect in year *Y* and reference values mentioned in the present deliberation for forecasts of the number of customers connected, annual daily capacity contracted and distance for the proximity tariff.

This reference amount does not take into account the income effectively received by GRDF for these tariff charges.

b) Non-tariff income not giving rise to incentives

The reference amount used for the ex post calculation of authorised income is equal to the non-tariff income effectively received by GRDF for year *Y* as part of third-party contributions, income from additional services received for direct delivery contracts and income generated by other recurring services billed to suppliers (for example, meter rentals).

The forecast amounts taken into account in the ATRD5 tariff are as follows:

In current €M	**2016**	**2017**	**2018**	**2019**
Forecast amount of non-tariff income not giving rise to incentives	143.5	149.5	153.3	155.0

c) Differences in income related to unplanned changes in the rates for ancillary services

The reference annual amount used for the ex post calculation of authorised income is equal to the difference between:

- income effectively received by GRDF for year *Y* for ancillary services for which the tariff evolves differently compared to the tariff resulting from the application of annual indexing formula in effect as at 1 January 2016[30], with the exception of ancillary services related to direct delivery contracts and other recurring services billed to suppliers;
- the income that GRDF would have received for year *Y* for these same services if the tariff applied had been that resulting from the application of annual indexing formula to the tariffs in effect as at 1 January 2016.

d) Income from fines received when customers with tariff options T4 and TP exceed the capacity contracted

The reference amount used for the ex post calculation of authorised income is equal to the amount of fines effectively received by GRDF when customers under T4 and TP options exceed the capacity contracted.

[30] The annual indexing formulas are defined by CRE's decision on the pricing of ancillary services performed exclusively by the natural gas distribution system operators.

2.6. Financial incentives under the incentive-based regulation

a) Incentive-based regulation of unit costs of investments in the networks

Investments concerned correspond to the following 13 categories defined according to the type of equipment concerned:

Category of equipment	Unit
Connection (without extension) – 16 m^3/h and above (D0, H1)	Part
Connection (without extension) – 6 and 10 m^3/h (C0)	Part
Moving of facilities at the request of third parties (T0, U0)	Metre
Installation of dry pipes (Y3)	Metre
Connection - 16 m^3/h and more – with extension (H0)	Metre
Connection - 6 and 10 m^3/h - with extension < 35 m (A0)	Metre
Connection - 6 and 10 m3/h - with extension > 35 m (B0, G0, I0)	Metre
Connection of customers (E0, E1)	Metre
Updating of connections (and associated networks) (S4, S6, S7, P6, S8, Y8))	Metre
Updating of networks (and associated connections) (P1 to P4-Y0-Y4-Y6-Y2)	Metre
Updating of equipment in buildings (S0, S2, S3, S5, Q0, Q1, P5, Y7)	Part
Structural work excluding replacement of dry pipes (M0, J0, K0, L0)	Metre
Industrial zone (ZI) – Joint development zone (ZAC) – Business zone (ZA) - (F0)	Metre

Within each of these 13 categories, the cost of each investment is modelled by:

- a variable portion based on the length of the pipe concerned or the number of units, which does not depend on the year of commissioning (A_i);
- a fixed portion, which does not depend on the year of commissioning (B_i);
- an annual coefficient for the average change in unit costs, the same for all categories (CU_N).

The values of these parameters are determined, in particular, based on the cost of investments brought into service between 2012 and 2014. These values and the target annual coefficients for the average change in unit costs over the 2016-2019 are defined in a confidential annex to this document.

For a given year *Y*, the total investment cost model is calculated based on the actual volume of investments:

$$\text{Coût total modélisé}_N = CU_N \times \sum_{i=1}^{13} (A_i \times \text{Volume réel d'ouvrages mis en service}_i + B_i \times \text{nombre d'affaires clôturées}_i)$$

As from 2016, for a given year *Y*, the annual incentive corresponds to 20% of the difference between the total effective cost of facilities commissioned and the total modelled cost of these same structures. It is capped at +/-€9 M per year.

The annual incentive is first calculated based on provisional data, and the following year based on updated data.

The reference annual amount used for the ex post calculation of authorised income for the year is equal to the sum of:

- the annual incentive amount for year *Y-1*, calculated based on available provisional data;
- plus the difference between the annual incentive amount for year *Y-2*, calculated based on the updated data and the amount of this same incentive calculated the previous year based on provisional data.

b) Incentive-based regulation for the increase in the number of customers connected to the gas networks

The forecast amount under the incentive-based regulation for the increase in the number of customers connected to the gas networks is as follows:

In current €M	2016	2017	2018	2019
Forecast amount	45.7	45.5	45.6	45.8

Of which forecast bonus	*19.3*	*19.3*	*19.3*	*19.3*
Of which forecast natural incentive	*26.4*	*26.2*	*26.3*	*26.4*

Therefore, the bonus covered provisionally by the ATRD5 tariff is €77.3 M.

Assumptions taken into account to determine the forecast natural incentive are those used to determine the tariff balance for the 2016-2019 period (forecast inflation, k factors for CRCP balance clearing equal to 0).

The reference annual amount used for the ex post calculation of authorised income, as part of the incentive-based regulation for the increase in the number of customers connected to the gas networks, is equal to the sum of:

- the annual forecast bonus amount;
- plus the forecast natural incentive amount, adjusted for the effective change in the scale of tariffs (actual inflation, k factors for CRCP balance clearing used).

The CRCP balance at the end of the tariff period also takes into account the difference between the total bonus and the bonus covered provisionally by the ATRD5 tariff, i.e. an amount equal to:

Amount taken into account at the end of the period = Total bonus - €77.3 M

The total bonus amount is defined according to the total number of active delivery points connected to GRDF's networks using the following formula:

Total bonus =

(Unit bonus T1+T2) x (number of delivery points T1+T2 connected in 2019 – 2019 forecasts without any increase T1+T2)

+ (Unit bonus T3+T4) x (number of delivery points T3+T4 connected in 2019 – 2019 forecasts without any increase T3+T4)

Where:

- *"Unit bonus T1 +T2"* is equal to €100 per active delivery point under tariff options T1 or T2 ("lower portfolio");
- *"Unit bonus T3 +T4"* is equal to €3,000 per active delivery point under tariff options T3 or T4 ("upper portfolio");

Forecast number of delivery points in 2019 used as a reference for the calculation			
In number of delivery points	2019 forecasts used for the ATRD5 tariff	*Of which development goals*	2019 forecasts without development
T1* + T2	10,829,719	609,794	10,219,925
T3 + T4	100,302	5,432	94,870

**includes delivery points with a communal meter and that have collectively taken out a supply contract, as well as delivery points without individual or communal meters to which the fixed rate is applied.*

Therefore, the total bonus is as follows:

Total bonus = €100 x (number of T1+T2 delivery points in 2019 – 10,219,925)

+ €3,000 x (number of T3+T4 delivery points in 2019 – 94,870)

The number of delivery points connected in 2019 is defined as the average number of active delivery points recorded at the end of each month of 2019. If the result of this calculation is negative, the total bonus is zero.

GRDF shall transmit, at the end of the tariff period, an analysis of:

- the delivery points under tariff option T2 in 2019, which were under tariff option T3 in 2015 and had a reference annual consumption lower than 400 MWh;
- the delivery points under tariff option T3 in 2019, which were under tariff option T2 in 2015 and had a reference annual consumption higher than 200 MWh.

This analysis shall specify the changeovers that do not have any effect on the incentive-based regulation goals, i.e. to promote the connection of new customers and encourage customers already connected to the gas networks to continue to use them. In addition, it shall specify the reasons for these changeovers as well as the differences compared to the forecast number of deliver points in 2019 used as a reference to

calculate the total bonus. CRE shall decide, in the light of this analysis, to neutralise in the total bonus calculation all or part of the effects of these changeovers between tariff options, by taking into account for these delivery points the unit bonus based on the tariff option subscribed in 2015 instead of that subscribed in 2019.

c) Incentive-based regulation specific to the Gazpar smart metering project

The reference amount used for the ex post calculation of authorised income is equal to the sum, for the given year, of the financial incentives related to the "Gazpar" smart metering project, as defined by CRE's decision of 17 July 2014 concerning the incentive-based regulation framework for GRDF's smart metering system.

d) Incentive-based regulation of research and development spending

The reference amounts for R&D spending (including spending related to the "Smart grids" projects and excluding R&D spending to increase the number of customers connected to the gas networks) taken into account to define the ATRD5 tariff are as follows:

In current €M	2016	2017	2018	2019
Reference amounts for R&D spending subject to incentive-based regulation	9.7	10.5	11.4	11.2

If the total R&D spending amount (including spending related to the "Smart grids" projects and excluding R&D spending to increase the number of customers connected to the gas networks) used over the 2016-2019 period is lower than the cumulated reference amounts used to define the ATRD5 tariff, the difference shall be taken into account in the CRCP balance at the end of the tariff period.

An annual review of GRDF's R&D projects shall be transmitted by the operator to CRE, before the end of the first quarter of each calendar year, for the previous year including in particular the following information:

- a description of the projects carried out and partnerships made, with the associated expenses and results obtained;
- a list of projects in progress and future projects with the expected outcomes;
- the amounts spent over the past year;
- the forecast expenses for each year until the end of the tariff period;
- the number of full-time equivalents associated with R&D programmes;
- support and subsidies received.

This follow-up may be submitted for any audit deemed useful by CRE.

e) Incentive-based regulation of quality of service

Service quality monitoring has been set up for GRDF in the operator's key business areas. This monitoring comprises indicators transmitted regularly by GRDF to CRE. All of the service quality monitoring indicators set up for GRDF must be made public on the Supplier and Wider Public websites.

Some indicators, concerning areas that are most important for the proper functioning of the market, are subject to a financial incentive system. The goals and bonuses and penalties for indicators subject to financial incentives calculated on an annual basis shall apply as from 2016.

The service quality monitoring indicators sent by GRDF to CRE must be certified by an external body. Moreover, GRDF's service quality monitoring system may be subject to any audit that CRE deems useful.

The list of indicators for GRDF's quality of service defined for the ATRD5 tariff is provided in the annex to the present document.

The reference amount taken into account for the ex post calculation of authorised income, as part of the incentive-based regulation of quality of service, is equal to the sum of the financial incentives defined in the annex.

2.7. Reference values

Reference values are as follows:

Forecast volumes of gas supplied (*in MWh*):

Tariff option	2016	2017	2018	2019	2020
T1	6,605,596	6,809,073	7,059,145	7,322,638	7,636,656
T2	141,288,358	138,872,325	136,986,474	135,122,578	133,478,638
T3	85,001,494	84,496,660	84,609,137	84,549,791	84,028,728
T4	52,887,069	52,587,223	52,582,783	52,563,477	53,299,532

Forecast average annual number of customers connected:

Tariff option	2016	2017	2018	2019	2020
Fixed rate	12,738	10,738	8,738	6,738	6,738
T1	3,182,685	3,190,243	3,203,616	3,220,657	3,249,192
T2	7,750,995	7,749,369	7,744,144	7,736,066	7,717,486
T3	98,252	98,182	98,064	97,730	97,269
T4	2,642	2,618	2,595	2,571	2,569
TP	These values are specified in a confidential annex.				

Forecast annual contracted daily capacities (in *MWh/day*):

Tariff option	2016	2017	2018	2019	2020
T4	353,660	351,655	351,625	351,496	356,418
TP	These values are specified in a confidential annex.				

Forecast distance for the proximity tariff (*in m*):

Tariff option	2016	2017	2018	2019	2020
TP	These values are specified in a confidential annex.				

Forecast distance weighted by municipality density coefficients for the proximity tariff (*in m*):

Tariff option	2016	2017	2018	2019	2020
TP	These values are specified in a confidential annex.				

For switching from annual forecasts to half-yearly forecasts, the half-yearly breakdown for year *Y* of gas volumes supplied per tariff option is as follows:

Tariff option	First half-year	Second half-year
T1	53%	47%
T2	57%	43%
T3	58%	42%
T4	59%	41%

Similarly, the half-yearly breakdown for year *Y* of the number of customers connected per tariff option:

- the average number of customers connected in the first half-year is calculated as follows:

$$\frac{\left(\left(average\_number\_customer_{yearY-1} + average\_number\_customer_{yearY}\right)/2 + average\_number\_customer_{yearY}\right)}{2}$$

- the average number of customers connected in the second half-year is calculated as follows:

$$\frac{\left(\left(average\_number\_customer_{yearY} + average\_number\_customer_{yearY+1}\right)/2 + average\_number\_customer_{yearY}\right)}{2}$$

These two formulas are also applied identically to provide a half-yearly breakdown per tariff option of the forecast annual contracted daily capacities and forecast distance.

C. Annex

1. Annex 1 – Indicators for monitoring GRDF's quality of service

This annex outlines the indicators for monitoring GRDF's quality of service as well as the corresponding financial incentives defined for the ATRD5 tariff.

1.1. Indicators for monitoring GRDF's quality of service giving rise to financial incentives

a) Number of scheduled appointments missed by the DSO

Calculation:	Figure reported on 1st of month M+2: *Number of scheduled appointments missed by the DSO in month M with compensation paid* (i.e. two figures monitored: - for 6M[31] customers, - for JJ[32]/JM[33]/MM[34] customers)
Scope:	- all appointments scheduled, thus approved by the DSO - all service call appointments with intervention by a member of DSO staff and the customer's presence, missed through the DSO's own actions and automatically identified by the operator - 6M customers and JJ/JM/MM customers are monitored separately
Monitoring:	- frequency of calculation: monthly - frequency of reporting to CRE: monthly - frequency of publication: monthly - frequency of incentive calculation: monthly
Objective:	100% of missed appointments automatically identified by the operator give rise to compensation
Incentives:	- penalties: amounts identical to those billed by GRDF in the event of non-performance of a scheduled service call as a result of the customer's or the supplier's own actions (absence at appointment time, etc.), on the basis of the customer's tariff option, for each appointment missed - payment: directly to suppliers
Implementation date:	- already in place since 1 July 2008

[31] Energy supplied is measured half-yearly and the index containing this measurement is read half-yearly by the DSO.
[32] Energy supplied is measured daily and the index containing this measurement is read daily by the DSO.
[33] Energy supplied is measured daily and the index containing this measurement is read monthly by the DSO at the end of the month for all days of the month.
[34] Energy supplied is measured monthly and the index containing this measurement is read monthly by the DSO.

b) Proportion of start-ups completed within the deadline requested

Calculation:	Ratio, by customer type, reported on the 1st of month M+2: *(Number of start-ups achieved during month M within deadline requested (if this deadline is longer than the catalogue deadline) or within a deadline ≤ the catalogue deadline (if the deadline requested is shorter than the catalogue deadline)) / Total number of start-ups achieved during month M)* (i.e. four figures monitored: - all customers combined - 6M customers - MM customers - JJ/JM customers
Scope:	- all start-ups involving travel (with or without meter installation), excluding urgent start-ups - all suppliers combined - 6M customers, MM customers and JJ/JM/MM customers are monitored separately
Monitoring:	- frequency of calculation: monthly - frequency of reporting to CRE: monthly - frequency of publication: monthly - frequency of incentive calculation: annually
Objective:	- the financial incentive covers the overall rate value (all customers combined) calculated on an annual basis - reference objective: 93% per calendar year
Incentives:	- calculation: based on the results of the indicator rounded off to 2 decimal points - penalties: €20,000 per one-tenth of a point if the annual rate is strictly lower than the reference objective - bonus: €20,000 per one-tenth of a point if the annual rate is higher than or equal to the reference objective - incentive limit value: - €2,600,000 - payment: through the CRCP
Implementation date:	- monitored since 1 January 2011 - implementation of incentives: 1 July 2012

c) Rate of shut-downs completed within the deadline requested

Calculation:	Ratio, by customer type, reported on the 1st of month M+2: *(Number of shut-downs achieved during month M within deadline requested (if this deadline is longer than the catalogue deadline) or within a deadline ≤ the catalogue deadline (if the deadline requested is shorter than the catalogue deadline)) / (Total number of shut-downs achieved during month M)* (i.e. four figures monitored: - all customers combined - 6M customers - MM customers - JJ/JM customers
Scope:	- Shut-downs following contract termination (excluding service disconnections for non-payment) at customer's request - all suppliers combined - 6M customers, MM customers and JJ/JM/MM customers are monitored separately
Monitoring:	- frequency of calculation: monthly - frequency of reporting to CRE: monthly - frequency of publication: monthly - frequency of incentive calculation: annually
Objective:	- the financial incentive covers the overall rate value (all customers combined) calculated on an annual basis - reference objective: 95.5% per calendar year
Incentives:	- calculation: based on the results of the indicator rounded off to 2 decimal points - penalties: €20,000 per one-tenth of a point if the annual rate is strictly lower than the reference objective - bonus: €20,000 per one-tenth of a point if the annual rate is higher than or equal to the reference objective - incentive limit value: - €2,100,000 - payment: through the CRCP
Implementation date:	- monitored since 1 January 2011 - implementation of incentives: 1 July 2012

d) Rate of connections completed within the deadline agreed on

Calculation:	Ratio reported on 1st of month M+2: *(Number of connections on stream during month M within the deadline agreed on) / (Number of connections on stream during month M)* (i.e. two figures monitored: - connections ≤ 6-10 m^3/h excluding extensions - connections > 10 m^3/h and connections with extensions then as from 1 January 2017: - connection of the wider public - connection of the business market)
Scope:	- all connections - simple connections without extension with a meter flow rate ≤ 6-10 m^3/h on the one hand, and connections with extensions and connections with a meter flow rate > 10 m^3 monitored separately - as from 1 January 2017, connections of the wider public on the one hand, and connection of the business market on the other hand monitored separately
Monitoring:	- frequency of calculation: monthly - frequency of reporting to CRE: monthly - frequency of publication: monthly - frequency of incentive calculation: annually
Objective:	- the financial incentive covers the rate values calculated on an annual basis - reference objective: 89% per calendar year
Incentives:	- calculation: based on the results of the indicator rounded off to 2 decimal points - penalties: €50,000 per one-tenth of a point if the annual rate is strictly lower than the reference objective - bonus: €50,000 per one-tenth of a point if the annual rate is higher than or equal to the reference objective - incentive limit value per type of connection: - €725,000 - payment: through the CRCP
Implementation date:	- monitored since 1 July 2010 - implementation of incentives: 1 July 2012

e) Rate of half-yearly readings (6M) over actual figures (read or taken by customer)

Calculation:	Ratio reported on 1st of month M+2: *(Number of actual 6M PCE[35] figures read or taken by customer during month M) / (Number of 6M PCE figures reported during month M)* (i.e. one figure monitored)
Scope:	- all meter figures read or taken by customers for 6M PCE - gas figures only
Monitoring:	- frequency of calculation: monthly - frequency of reporting to CRE: monthly - frequency of publication: monthly - frequency of incentive calculation: annually
Objective:	- the financial incentive covers the rate value calculated on an annual basis - reference objective: 97.2% per calendar year
Incentives:	- calculation: based on the results of the indicator rounded off to 2 decimal points - penalties: €50,000 per one-tenth of a point if the annual rate is strictly lower than the reference objective - bonus: €50,000 per one-tenth of a point if the annual rate is higher than or equal to the reference objective - incentive limit value: - €2,600,000 - payment: through the CRCP
Implementation date:	- monitored since 1 January 2009 - implementation of incentives: 1 July 2012

f) Quality of JJ readings transmitted to TSOs for daily allocations at PITDs:

Calculation:	Ratio reported on 1st of month M+2: *(Sum for each day J of month M of the number of consumption figures for remotely-metered JJ customers included in the allocation calculation on J+1) / (Sum for each day J of month M of the number of remotely-metered JJ customers recorded in the OMEGA SI for day J)* (i.e. one figure monitored)
Scope:	- all figures actually read - no fall-back / replacement figures are included - all suppliers, ZETs[36] and TSOs[37] combined
Monitoring:	- frequency of calculation: monthly - frequency of reporting to CRE: monthly - frequency of publication: monthly - frequency of incentive calculation: annually
Objective:	- the financial incentive covers the rate value calculated on an annual basis - reference objective: 96.7% per calendar year
Incentives:	- calculation: based on the results of the indicator rounded off to 2 decimal points - penalties: €50,000 per point if the annual rate is strictly lower than the reference objective - bonus: €50,000 per point if the annual rate is higher than or equal to the reference objective - incentive limit value: - €335,000 - payment: through the CRCP
Implementation date:	- monitored since 1 January 2008 - implementation of incentives: 1 July 2008

[35] PCE: metering or estimation point.
[36] ZET: transmission balancing zone
[37] TSO: natural gas transmission system operator

g) Transmission to TSOs of daily estimates of quantities loaded by suppliers at PITDs within a timeframe enabling them to be taken into account by the TSOs.

Calculation:	Figure reported on 1st of month M+2: *Number of days in month M where the DSO[38] did not send provisional allocations calculated at J+1 within a timeframe enabling them to be taken into account by the TSOs* (i.e. one figure monitored)
Scope:	- all TSOs combined - all days with agreed deadline met for one or both TSOs (the penalty is due if at least one TSO is affected by a delay) - excluding days with deadline not met at the request of either TSO (such days are recorded as days where the deadline is met by the DSO)
Monitoring:	- frequency of calculation: monthly - frequency of reporting to CRE: monthly - frequency of publication: monthly - frequency of incentive calculation: annually
Objective:	- reference objective: 7 days per calendar year
Incentives:	- penalties: €20,000 per day above the reference objective - bonus: €20,000 per day below the reference objective - incentive limit value: - €260,000 - payment: through the CRCP
Implementation date:	- start of monitoring: 1 January 2016 - implementation of incentives: 1 January 2016

h) DSO's Supplier portal availability rate

Calculation:	Weekly availability ratios up to the end of month M, for full weeks, reported on the 1st of month M+2: *(Number of hours of actual portal availability during the week) / (Total number of scheduled hours of portal availability during the week)* (i.e. one figure monitored)
Scope:	- OMEGA portal only, all functionalities available to suppliers, excluding Webservices - reasons for unavailability: any event preventing, disrupting or significantly slowing down use of the portal by suppliers, scheduled or otherwise
Monitoring:	- frequency of calculation: weekly - frequency of reporting to CRE: monthly - frequency of publication: monthly - frequency of incentive calculation: annually
Objective:	- the financial incentive covers the rate value calculated on an annual basis - reference objective: 99.5% per calendar year
Incentives:	- calculation: based on the results of the indicator rounded off to 2 decimal points - penalties: €50,000 per one-tenth of a point if the annual rate is strictly lower than the reference objective - bonus: €50,000 per one-tenth of a point if the annual rate is higher than or equal to the reference objective - incentive limit value: - €1,750,000 - payment: through the CRCP - the definition and levels of objective and financial incentives of this indicator are set for the entire ATRD5 tariff period
Implementation date:	- monitored since 1 July 2008 - implementation of incentives: 1 July 2008

[38] DSO: natural gas distribution system operator

i) Rate of responses to supplier complaints within 15 calendar days

Calculation:	Ratio reported on 1st of month M+2: *(Number of supplier complaints closed within 15 calendar days during month M) / (Total number of supplier complaints closed during month M)* (i.e. one figure monitored)
Scope:	- all complaints where a response must be provided to the supplier by the DSO (complaints where the response must be provided to the customer by the DSO are not included) - all complaints reported on the OMEGA portal only, including complaints about missed appointments - all suppliers and all types of customers (T1/T2/T3/T4/TP) combined - closed complaint: complaint where a "meaningful" response (not acknowledgement of receipt) has been sent by the DSO to the supplier
Monitoring:	- frequency of calculation: monthly - frequency of reporting to CRE: monthly - frequency of publication: monthly - frequency of incentive calculation: monthly
Objective:	96% of supplier complaints reported on the OMEGA portal per month dealt with within 15 calendar days
Incentives:	- calculation: based on the results of the indicator rounded off to 2 decimal points - penalties: €2,000 per point below the reference objective - incentive limit value: - €624,000 - payment: through the CRCP - the definition and levels of objective and financial incentives of this indicator are set for the entire ATRD5 tariff period
Implementation date:	- monitored since 1 January 2008 - implementation of incentives: 1 July 2010

j) Rate of responses to supplier complaints within 30 calendar days

Calculation:	Ratio reported on 1st of month M+2: *(Number of customer complaints closed within 30 calendar days during the quarter M-2/M) / (Total number of customer complaints closed during the quarter M-2/M)* (i.e. one figure monitored)
Scope:	- all complaints where a response must be provided to the customer by the DSO (complaints where the response must be provided to the customer by the supplier are not included) - all written or oral means of reporting a complaint - all types of customers (T1/T2/T3/T4/TP) combined - closed complaint: complaint where a "meaningful" response (not acknowledgement of receipt) has been sent by the DSO to the customer
Monitoring:	- frequency of calculation: monthly - frequency of reporting to CRE: monthly - frequency of publication: monthly - frequency of incentive calculation: monthly
Objective:	100% of customer complaints dealt with within 30 calendar days
Incentives:	- penalties: €25 per complaint not dealt with within 30 calendar days - incentive limit value: - €18,000 - payment: through the CRCP - the definition and levels of objective and financial incentives of this indicator are set for the entire ATRD5 tariff period
Implementation date:	- monitored since 1 January 2008 - implementation of incentives: 1 July 2010

k) Rate of publication by OMEGA for JJ/JM readings

Calculation:	Ratio reported on 1st of month M+2: *(Sum between the 8th working day of month M and the 7th working day of month M+1 of the number of JJ/JM PCE remotely read for which the reading was received and published by OMEGA over that period) / (Sum of the number of JJ/JM PCE remotely read for which the reading was received by OMEGA over that period)* (i.e. one figure monitored)
Scope:	- all existing JJ/JM PCE - all cyclical and service shut-down readings (start-up readings not included) - all suppliers combined - calculation in day J+7
Monitoring:	- frequency of calculation: monthly - frequency of reporting to CRE: monthly - frequency of publication: monthly - frequency of incentive calculation: annually
Objective:	- the financial incentive covers the rate value calculated on an annual basis - reference objective: 99.94% per year
Incentives:	- calculation: based on the results of the indicator rounded off to 2 decimal points - penalties: €25,000 per one-tenth of a point if the annual rate is strictly lower than the reference objective - bonus: €25,000 per one-tenth of a point if the annual rate is higher than or equal to the reference objective - incentive limit value: - €985,000 - payment: through the CRCP - the definition and levels of objective and financial incentives of this indicator are set for the entire ATRD5 tariff period
Implementation date:	- monitored since 1 July 2008 - implementation of incentives: 1 July 2009

l) Rate of publication by OMEGA for MM readings

Calculation:	Ratio reported on 1st of month M+2: *(Sum between the 8th working day of month M and the 7th working day of month M+1 of the number of MM PCE remotely read for which the reading was received and published by OMEGA over that period) / (Sum of the number of MM PCE remotely read for which the reading was received by OMEGA over that period)* (i.e. one figure monitored)
Scope:	- all existing MM PCE (not only remotely read) - all cyclical and service shut-down readings (start-up readings not included) - all suppliers combined - calculation in day J+7
Monitoring:	- frequency of calculation: monthly - frequency of reporting to CRE: monthly - frequency of publication: monthly - frequency of incentive calculation: annually
Objective:	- the financial incentive covers the rate value calculated on an annual basis - reference objective: 99.93% per year
Incentives:	- calculation: based on the results of the indicator rounded off to 2 decimal points - penalties: €25,000 per one-tenth of a point if the annual rate is strictly lower than the reference objective - bonus: €25,000 per one-tenth of a point if the annual rate is higher than or equal to the reference objective - incentive limit value: - €982,500 - payment: through the CRCP - the definition and levels of objective and financial incentives of this indicator are set for the entire ATRD5 tariff period
Implementation date:	- monitored since 1 July 2008 - implementation of incentives: 1 July 2009

m) Rate of publication by OMEGA for 6M readings

Calculation:	Ratio reported on 1st of month M+2: *(Sum over month M of the number of 6M PCE read for which the reading was received and published by OMEGA over the period) / (Sum of the number of 6M PCE read for which the reading was received by OMEGA)* (i.e. one figure monitored)
Scope:	- all existing 6M PCE (not only remotely read) - all cyclical and service shut-down readings (start-up readings not included) - all suppliers combined - calculation in day J+2
Monitoring:	- frequency of calculation: monthly - frequency of reporting to CRE: monthly - frequency of publication: monthly - frequency of incentive calculation: annually
Objective:	- the financial incentive covers the rate value calculated on an annual basis - reference objective: 99.98% per year
Incentives:	- calculation: based on the results of the indicator rounded off to 2 decimal points - penalties: €25,000 per one-tenth of a point if the annual rate is strictly lower than the reference objective - bonus: €25,000 per one-tenth of a point if the annual rate is higher than or equal to the reference objective - incentive limit value: - €995,000 - payment: through the CRCP - the definition and levels of objective and financial incentives of this indicator are set for the entire ATRD5 tariff period
Implementation date:	- monitored since 1 July 2008 - implementation of incentives: 1 July 2009

n) Rate of variance from contract scope regarding alternative suppliers

Calculation:	Ratio reported on 1st of month M+2: *(Sum of PCE out for alternative suppliers on the last working day of month M) / (Sum of PCE actually attached to alternative suppliers' portfolios in OMEGA on the last working day of month M)* (i.e. one figure monitored)
Scope:	- all existing alternative suppliers' PCE - alternative suppliers only
Monitoring:	- frequency of calculation: monthly - frequency of reporting to CRE: monthly - frequency of publication: monthly - frequency of incentive calculation: annually
Objective:	- the financial incentive covers the rate value calculated on an annual basis - reference objective: 0.04% per year
Incentives:	- calculation: based on the results of the indicator rounded off to 2 decimal points - penalties: €25,000 per one-tenth of a point if the annual rate is higher than or equal to the reference objective - bonus: €25,000 per one-tenth of a point if the annual rate is strictly lower than the reference objective - incentive limit value: - €265,000 - payment: through the CRCP - the definition and levels of objective and financial incentives of this indicator are set for the entire ATRD5 tariff period
Implementation date:	- monitored since 1 July 2009 - implementation of incentives: 1 July 2009

o) Proportion of rejections from month M corrected in M+1

Calculation:	Ratio reported on 1st of month M+2: *(Number of rejections corrected during month M) / (Number of rejections generated during month M-1)* (i.e. one figure monitored)
Scope:	- all existing PCE - all suppliers combined
Monitoring:	- frequency of calculation: monthly - frequency of reporting to CRE: monthly - frequency of publication: monthly - frequency of incentive calculation: annually
Objective:	- the financial incentive covers the rate value calculated on an annual basis - reference objective: 99.8% per year
Incentives:	- calculation: based on the results of the indicator rounded off to 2 decimal points - penalties: €25,000 per one-tenth of a point if the annual rate is strictly lower than the reference objective - bonus: €25,000 per one-tenth of a point if the annual rate is higher than or equal to the reference objective - incentive limit value: - €950,000 - payment: through the CRCP - the definition and levels of objective and financial incentives of this indicator are set for the entire ATRD5 tariff period
Implementation date:	- monitored since 1 January 2010 - implementation of incentives: 1July 2010

p) Size of distribution variance accounts (DVA)

Calculation:	Figure reported on 1st of month M+2: *Absolute value of the sum of distribution variance accounts for month M in energy* (i.e. one figure monitored)
Scope:	- all existing PCE - all suppliers combined
Monitoring:	- frequency of calculation: monthly - frequency of reporting to CRE: monthly - frequency of publication: monthly - frequency of incentive calculation: annually
Objective:	- reference objective: o for 2016: 5.3 TWh cumulated over the calendar year o for 2017: 4.8 TWh cumulated over the calendar year o for 2018: 4.4 TWh cumulated over the calendar year o for 2019: 4 TWh cumulated over the calendar year
Incentives:	- penalties: €0.5 per MWh above the reference objective - bonus: €0.5 per MWh below the reference objective - incentive limit value: - €2,250,000 - payment: through the CRCP - the definition and levels of objective and financial incentives of this indicator are set for the entire ATRD5 tariff period
Implementation date:	- monitored since 1 January 2011 - implementation of incentives: 1 January 2011

q) Size of distribution variance accounts (DVA) by reading frequency and by supplier

Calculation:	Figure reported on 1st of month M+2: *Sum of distribution variance accounts in energy and absolute value for each reading frequency (JJ, JM/MM, 6M and 1M[39]) and for each supplier of month M* (i.e. one figure monitored)
Scope:	- all existing PCE - all suppliers whose customer portfolios comprise, for at least one reading frequency, at least 1% of the sum of PCE with this reading frequency
Monitoring:	- frequency of calculation: monthly - frequency of reporting to CRE: monthly - frequency of publication: monthly - frequency of incentive calculation: annually
Objective:	- reference objective: 6 TWh cumulated over the calendar year
Incentives:	- penalties: €0.5 per MWh above the reference objective - bonus: €0.5 per MWh below the reference objective - incentive limit value: - €2,500,000 - payment: through the CRCP
Implementation date:	- start of monitoring: 1 January 2016 - implementation of incentives: 1 January 2016

r) Level of corrected meter figures

Calculation:	Following ratios reported on the 1st of month M+2: - for 6M customers: *(Number of readings reported with a "corrected" status for month M – Number of corrections following start-ups for month M) / (Total number of readings reported for month M)* - for other customers: *(Number of active PCE where the figure was corrected in month M / Total number of active PCE in month M)* (i.e. two figures monitored)
Scope:	- all changes to meter figures, regardless of the triggering event, with the exception of corrections following service start-ups for 6M customers - all real figures, plus all figures calculated for customers other than 6M customers - all suppliers combined
Monitoring:	- frequency of calculation: monthly - frequency of reporting to CRE: monthly - frequency of publication: monthly - frequency of incentive calculation: annually
Objective:	- the financial incentive covers the rate values calculated on an annual basis - reference objective: o for 6M customers: 0.20% per year o for other customers: 0.38% per year
Incentives:	- calculation: based on the results of the indicator rounded off to 2 decimal points - penalties: €10,000 per one-hundredth of a point if the annual rate is higher than or equal to the reference objective - bonus: €10,000 per one hundredth of a point if the annual rate is strictly lower than the reference objective - incentive limit value: o for 6M customers: - €200,000 o for other customers: - €370,000 - payment: through the CRCP
Implementation date:	- monitored since 1 July 2012 - implementation of incentives: 1 July 2013

[39] Energy supplied is measured monthly and the index containing this measurement is read monthly by the DSO. This designation is used for PCE equipped with a Gazpar smart meter.

1.2. Other GRDF quality of service monitoring indicators

a) Environmental indicator

Indicator name	Indicator calculation	Indicator scope	Frequency of reporting to CRE and publication	Implementation date
Atmospheric emissions of greenhouse gases relative to energy supplied	Ratio reported on the 1st of March of year Y+1: *(Tonnes of greenhouse gas (CO_2 equivalent) emitted into the atmosphere in year Y) / (Quantities of gas supplied over the DSO's network in calendar year Y)* (i.e. one figure monitored)	- Methane leaks from distribution lines - methane emissions during engineering or incident maintenance work, emissions caused by facilities operations - Emissions from the DSO's vehicle fleet and its buildings - the indicator is reported with the figure for the volume supplied during the calendar year	Year	Already implemented

b) Indicator related to quotations and service calls

Indicator name	Indicator calculation	Indicator scope	Frequency of reporting to CRE and publication	Implementation date
Proportion of supplier changeovers completed within requested deadline	Ratio, by customer type and type of service call, reported on the 1st of month M+2: *(Number of supplier changeovers achieved within the requested deadline during month M) / (Total number of supplier changeovers achieved during month M)* (i.e. six figures monitored: - supplier changeovers requiring travel: o 6M customers o MM customers o JJ/JM customers - supplier changeovers not requiring travel: o 6M customers o MM customers o JJ/JM customers	- all supplier changeovers - all suppliers combined - 6M customers, MM customers and JJ/JM customers are monitored separately	Month	Already implemented

c) Indicators related to customer relationships

Indicator name	Indicator calculation	Indicator scope	Frequency of reporting to CRE and publication	Implementation date

Call centre availability rate for customers	Ratio, by call centre number, reported on the 1st of month M+2: *(Number of calls answered in month M) / (Number of calls received in month M)* (i.e. two figures monitored: - Gas access reception service no. (AGNRC no.) - safety and repair no.)	- all types of calls answered/received during the call centre's opening hours - all contact types - all types of customers (T1/T2/T3/T4/TP) combined	Month	Already implemented
Number of customer complaints by type	Figure, by complaint type, reported on the 1st of month M+2: *Total number of customer complaints closed during the quarter M-2/M* (i.e. five figures monitored: - Total - Delivery - Delivery-related service production - Individual gas connection - Business market gas connection	- all complaints where a response must be provided to the customer by the DSO (complaints where the response must be provided to the customer by the supplier are not included) - all written or oral means of reporting a complaint - all types of customers (T1/T2/T3/T4/TP) combined - closed complaint: complaint where a "meaningful" response (not acknowledgement of receipt) has been sent by the DSO to the customer	Quarter	Already implemented
Rate of customer complaints dealt with in more than 2 months	Ratio reported on 1st of month M+2: *(Number of customer complaints closed within more than 2 months during month M) / (Total number of customer complaints closed during month M)* (i.e. one figure monitored)		Month	1 July 2016

d) Indicators related to supplier relationships

Indicator name	Indicator calculation	Indicator scope	Frequency of reporting to CRE and publication	Implementation date
Rate of responses to supplier complaints within 5 calendar days	Ratio reported on 1st of month M+2: *(Number of supplier complaints closed within 5 calendar days during month M) / (Total number of supplier complaints closed during month M)* (i.e. one figure monitored)	- all complaints where a response must be provided to the supplier by the DSO (complaints where the response must be provided to the customer by the DSO are not included) - all complaints reported on the OMEGA portal only, including complaints about missed appointments - all suppliers and all types of customers (T1/T2/T3/T4/TP) combined - closed complaint: complaint where a "meaningful" response (not acknowledgement of receipt) has been sent by the DSO to the supplier	Month	1 July 2016
Number of supplier complaints by type	Figure, by complaint type, reported on the 1st of month M+2: *Total number of supplier complaints closed during month M* (i.e. six figures monitored: - Total - Reception service - Supply and network quality - Service management and delivery - Metering data - Reminders)		Month	Already implemented
Proportion of customer complaints dealt with in more than 2 months	Ratio reported on 1st of month M+2: *(Number of supplier complaints closed in over 2 months during month M) / (Total number of supplier complaints closed during month M)* (i.e. one figure monitored)		Month	Already implemented
Rate of multiple complaints	Ratio reported on 1st of month M+2: *(Number of multiple complaints for the same PCE and the same type of complaint) / (Total number of complaints)* (i.e. one figure monitored)	- all complaints received by the DSO (where the answer must be made by the DSO to the supplier or customer) - all channels for submitting a complaint - all suppliers and all types of customers (T1/T2/T3/T4/TP) combined	Month	1 July 2016

e) Indicators related to metering and invoicing

Indicator name	Indicator calculation	Indicator scope	Frequency of reporting to CRE and publication	Implementation date
Rate of 6M PCE customer absence for meter reading three times or more	Ratio reported on 1st of month M+2: *(Number of 6M PCE figures estimated in month M owing to customer absence three times or more for six-monthly reading) / (Number of 6M PCE to be read in month M)* (i.e. one figure monitored)	- all existing 6M PCE - all figures estimated (neither read nor taken by customer) because of customer absence for reading - all cyclical and service shut-down readings (start-up readings not included) - all suppliers combined	Month	Already implemented
Rate of 6M PCE customer absence for meter reading two times or more	Ratio reported on 1st of month M+2: *(Number of 6M PCE figures estimated in month M owing to customer absence two times or more for six-monthly reading) / (Number of 6M PCE to be read in month M)* (i.e. one figure monitored)		Month	1 July 2016

f) Indicators related to data exchanged with transmission system operators (TSOs)

Indicator name	Indicator calculation	Indicator scope	Frequency of reporting to CRE and publication	Implementation date
Transmission to TSOs of daily estimates of quantities loaded by suppliers at PITDs within the agreed deadline	Ratio reported on 1st of month M+2: *Number of days in month M where the DSO did not send provisional allocations calculated at J+1 within the agreed deadline* (i.e. one figure monitored)	- all TSOs combined - all days with a deadline not met for one or both TSOs - excluding days with deadline not met at the request of either TSO (such days are recorded as days where the deadline is met by the DSO)	Month	1 July 2016

Transmission to TSOs of JJ intraday readings within the agreed deadline	Ratio reported on 1st of month M+2: *(Number of transmissions of intraday meter readings for month M done by GRDF within the deadline agreed on by the TSOs and DSOs) / (Maximum theoretical number of transmissions of intraday readings for month M)* (i.e. one figure monitored)	- all TSOs combined - all transmission with a deadline met for both TSOs - all days with deadline not met at the request of one or both TSO (such days are recorded as days where the deadline is met by the DSO)	Month	1 July 2016

2. Annex 2 - Incentive-based regulation of unit costs of investments in the networks (confidential annex)

This annex is confidential.

3. Annex 3 - Incentive-based regulation of costs related to losses and various discrepancies (confidential annex)

This annex is confidential.

4. Annex 4 – Reference values for the proximity tariff (confidential annex)

This annex is confidential.

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Paris, 10 March 2016

For the Energy Regulatory Commission,
The Chairman,

Philippe de LADOUCETTE