



The French Energy Regulatory Commission (CRE) is consulting market participants.

PUBLIC CONSULTATION OF 21 DECEMBER 2017 N° 2017-19 CONCERNING THE IMPLEMENTATION OF REGULATED ACCESS OF THIRD PARTIES TO THE UNDERGROUND NATURAL GAS STORAGE IN FRANCE

The bill ending the research as well as the exploitation of conventional and non-conventional hydrocarbons in France, and introducing various provisions relating to energy and the environment, has been adopted by the French Parliament on December 19, 2017. It provides, in Article 4, that the revenue of storage operators is regulated. The storage capacities are auctioned, and the difference, whether positive or negative, amongst the auction revenues and the regulated income of the storage operators is offset within the tariff for the use of the natural gas transmission networks, known as 'ATRT tariff'. Auction modalities are established by CRE after proposal of the operators.

The purpose of the reform for the access to the storage is to guarantee the necessary filling of the storages to ensure the supply security, while getting at the same time the transparency on storage costs and suppressing the complexity linked to the current system of individual obligations.

The implementation of this provisions is envisaged to be applied on the gas year 2018-2019.

Revenue regulation for storage operators

The storage obligation system in effect until now, aimed to ensure the security of supply at a national level. The storage obligations represent, since 2014, about two-thirds of the storage capacities marketed in France.

The French storage operators were certain to sell a significant portion of their capacities; in addition, the arrival of new entrants into the storage market is extremely difficult for technical, regulatory and financial reasons.

This situation creates a risk of excessive tariffs, which could increase the cost of security of supply for the final consumer. This risk is reinforced by the current low level of transparency on the definition of the operator's price. In this context, the introduction of a revenue regulation for storage operators shall ensure that the final consumer pays the right price for the storage, necessary for the security of supply.

The provisions of amended Article L. 452-1 of the Energy Code state that « *the tariffs for the use of transmission networks, and the commercial conditions for the use in such networks, as well as the tariffs for the related services provided by the network operators and the operators of the storage facilities stipulated in Article L. 421-3-1, are established in a transparent and non-discriminatory way in order to cover all the costs borne by these operators, mentioned on the same Article L. 421-3-1, insofar as such costs correspond to those of an efficient facility or system operators.* »

CRE, in order to determine the costs borne by the storage operators, demanded, in July of 2017, to Storengy, TIGF and Géométhane, to convey their tariff application files.

Subsequently, CRE:

- conducted a thorough critical analysis of the requests, in particular on the issues of determining the regulated asset base (RAB);
- auditioned the storage operators and their stockholders;

This has allowed CRE to estimate the initial RAB levels for each of the operators of approximately 3.35 billion euros for Storengy, of approximately 1.05 billion euros for TIGF and approximately 0.19 billion euros for Géométhane.

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With regards to returns of capital, CRE considers, at this stage, a range of Weighted Average Cost of Capital (WACC) between 5.75 % and 6.75 %, a premium of between 50 and 150 basis points, in addition to the level for gas transmission under the ATRT6 tariff.

According to the parameters adopted in terms of remuneration of capital and the depreciation period used for the cushion gas, the authorized revenues of the operators for the year 2018, shall be included:

- between 486 and 562 M€ for Storengy;
- between 139 and 162 M€ for TIGF;
- between 39 and 42 M€ for Géométhane.

The total cost for natural gas storage shall be, therefore, comprehended between 664 and 766 M€ for the year 2018.

Finally, CRE foresees, at this stage, and in view of the tight delays for implementation of the reform, to retain a period of regulation limited to two years.

An auction of the storage capacities

The new Article L. 421-5-1 of the Energy Code states that « *the capacities of the storage facilities mentioned in Article L. 421-3-1 are subscribed following a public auction.* »

« *The terms of this auction are established by the Energy Regulatory Commission on a proposal of the storage operators. The auction terms include, but are not limited to the commercialization capacities, the reserve price of the auction, the products marketed, and the auction type implemented. They shall be published in the website of the operators.* »

CRE conducted extensive work regarding the marketing of storage capacities. It organized two workshops with market participants in March and May 2016 and published a first public consultation on June 9, 2016¹.

In order to deepen several topics, CRE organized a new workshop with market participants on October 13, 2017. Non-confidential contributions received at the end of this workshop are published on CRE website.

TIGF and Storengy submitted to CRE, in November of 2017, their detailed propositions concerning the marketing methods for the storage capacities.

Following this work, CRE intends to organize the auction of the storage capacities, according to the following principles:

- the commercialization's primary purpose is to maximize the subscriptions of storage capacities. As a second purpose, only, the income maximization from the auction is sought;
- the auction shall be organized in a transparent manner, in particular with regards to the products marketed and reserve prices;
- the storage operators shall propose a simple offer, in continuity with previous offers;
- the auctions shall be spread over several days, in order to commercialize the capacities in lots of reasonable size.

An compensation integrated in gas transmission tariff

Amended Article L. 452-1 of the French Energy Code stipulates that: « *the transmission network operators shall redistribute to underground storage operators of natural gas mentioned in Article L. 421-3-1 part of the amount recovered in accordance with the procedures established by the Energy Regulatory Commission* ».

During the workshop of October 13 of 2017, CRE introduced its preliminary guidelines, as well as the initial considerations of the TSO.

CRE contemplates, at this stage, retaining for compensation a similar basis to that used to determine the storage obligations in the current system. Given the particularly tight deadlines for the implementation on the reform of gas storage, CRE considers that this solution poses the advantage to preserve the cost visibility necessary for the smooth functioning of the markets. Furthermore, it focuses on the protected customers whose supply must be guaranteed or that cannot be technically interrupted in critical situations.

The base proposed by CRE, at this stage, takes into account the following categories of consumers connected to the distribution networks:

¹ [Public consultation of the Energy Regulatory Commission of 9 June 2016 on the marketing rules for storage capacities in the context of the reform of third-party access to storage facilities.](#)

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- domestic consumers, including household's residents of a collectively heated building;
- non-domestic consumers, performing missions of general interest related to meeting the basic needs of the nation² ;
- consumers who have not contractually accepted a supply likely to be interrupted, or who have declared themselves to be unloadable.

For these consumers, the compensation shall depend on their winter modulation.

This basis is similar to that which allows to size storage obligations, so that CRE considers that the bill of the consumers concerned should evolve at the margin: the amounts paid by them to their gas supplier included the cost of storage obligations, which shall be replaced by a dedicated term in the transmission tariff.

Paris, December 21 of 2017.

For the Commission for the Energy Regulatory Commission,
The President,

Jean-François CARENCO

² The list of these customers is fixed in each department by prefectural decree.

SUMMARY

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1. PRICING REGULATORY FRAMEWORK

1.1 General principles

The bill to end the search and the exploitation of hydrocarbons and containing various provisions relating to energy and the environment, hereinafter « Hydrocarbures law » provides in Article 4, that the tariff for the use of transmission networks of natural gas includes:

- On one hand, the tariff and the marketing conditions for the access by third parties to the transmission networks of natural gas of GRTgaz and TIGF, known as « tariff ATRT ». The tariff ATRT6 came into effect on April 1st of 2017, according to the terms specified in CRE deliberation of December 15, 2016³;
- On the other hand, the tariff and the marketing conditions for the access by third parties to underground storage sites of natural gas of Storengy, TIGF and Géométhane, known as « tariff ATS », which is the object of the present consultation, and which is to be implemented on April 1st of 2018.

The elaboration of the tariff ATS is based on the definition, for the upcoming tariff period, of an authorized revenue for each of the storage operators (Storengy, TIGF and Géométhane).

The perception of the authorized revenues for the operators is developed, on one hand, by the marketing of storage capacities to the customers of the storage operators and, on the other hand, by the perception of an additional tariff term within the tariff ATRT.

1.2 Perimeter of Regulation

The Article L. 421-3-1 of the Code of Energy stipulates that « *natural gas underground storage facilities guaranteeing the security of supply of the territory on medium to long term and the compliance with the bilateral agreements concerning the security of supply of natural gas concluded by France with a Member State of the European Union or a Member State of the European Association of Free-Trade are envisaged by the multiannual programming of energy mentioned in Article L. 141-1. These facilities are maintained in operation by the operators.* »

For this purpose, Article 421-10 of the French Energy Code stipulates that « *natural gas underground storage operators operate both storages included in the facilities mentioned in Article L. 421-3-1 and those not included within those facilities keep separate accounts for each of these activities. The activities of these operators that do not contribute to the purposes mentioned in Article L. 421-3, are also the subject of separate accounts.* »

The charge level retained is determined in compliance with Article L. 452-1 of the French Energy Code, which stipulates that « *the use tariff of the distribution network, the marketing use conditions of such networks, as well as the tariff for the additional services provided by managers of these networks or by the operators of the storage facilities referred to in Article L. 421-3-1, are established in a transparent and non-discriminatory manner in order to cover all the expenses borne by the distribution network managers and the operators of the storage facilities mentioned in the same Article L. 421-3-1, insofar as these expenses correspond to those of efficient operators. These expenses take into account the characteristics of the service rendered and the costs related to this service, and include the obligations established by law and regulations as well as those expenses resulting from the execution of public service missions and contracts mentioned in Article L. 121-46* ».

The expenses of the storage operators and their receipts are, therefore, considered at the perimeter of the storage facilities provided by the Multiannual Programming of Energy (PPE for its French acronym). They are taken into account insofar as they correspond to those of an efficient operator.

Article 9 of Decree n° 2016-1442 of October 27 of 2016 concerning the multiannual programming of energy stipulates that:

« *During the first period of the multiannual programming of energy, gas storage facilities in France considered as necessary to ensure the supply are those mentioned below, up to the volumes and flow rates mentioned:*

1° *Operating sites commercializing storage capacities at 137.9 TWh in volume and 2,372.5 GWh/j in withdrawal rate:*

³ Deliberation of the French Energy Regulatory Commission of December 15 of 2016 forming a decision on the tariff for the use of GRTgaz and TIGF natural gas transmission networks.

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List of Sites	Company	Year of Commissioning	Type
Beynes	Storengy	1956	Aquifer
Céré-la-Ronde	Storengy	1993	Aquifer
Cerville-Velaine	Storengy	1970	Aquifer
Chemery	Storengy	1968	Aquifer
Etrez	Storengy	1980	Saline
Gournay (gas B)	Storengy	1976	Aquifer
Germigny-sous-Coulomb	Storengy	1982	Aquifer
Tersanne	Storengy	1970	Saline
Saint-Illiers-la-Ville	Storengy	1965	Aquifer
Lussagnet	TIGF	1957	Aquifer
Izaute	TIGF	1981	Aquifer
Manosque	Géométhane	1993	Saline

2° Sites that possess an operating license and having discontinued commercialization of storage capacities at 9.5 TWh in volume and 60 GWh/j in withdrawal rate:

List of Sites	Company	Year of Commissioning Reduced	Type
Saint-Clair-sur-Epte	Storengy	2015	Aquifer
Soings-en-Sologne	Storengy	2014	Aquifer
Trois-Fontaines	Storengy	2014	Depleted

3° Additional capacities of sites under development with an operating license under the Mining Code and the Environment Code:

List of Sites	Company	Estimated Year of Commissioning	Type	Usable volume in GM3	Usable Volume in TWH	Flow GWh/j at 45 % of usable volume	Flow MM3/j at 45 % of usable volume
Hauterives	Storengy	2017	Saline	0.1	1.1	90	8
Lussagnet phase 1	TIGF	2020	Aquifer	0.11	1.3	86	7.4
Manosque 2	Géométhane	2019-2021	Saline	0.2	2.36	119	10.1
Ensemble des sites				0.41	4.8	295	25.5

1.3 Definition of Estimated Authorized Revenue

CRE defines the estimated allowed revenue of each storage operator, on the basis of the tariff request sent by the operators.

Such estimated allowed revenue consists of the net operating expenses (NOE), normative capital expenses (NCC) and the clearance of the remaining balance on the expenses and revenue clawback account (CRCP) under the last tariff period:

$$RA = NOE + NCC + CRCP$$

With:

- RA: authorized revenue for the period;
- NOE: estimated net operating expenses for the period;
- NCC: estimated normative capital expenses for the period;
- CRCP: clearance of the balance on the CRCP.

1.3.1 Net Operating Expenses

Net operating expenses (NOE) are defined as the gross operating costs after the deduction of the operating income (the capitalised production and extra-pricing products, in particular).

The gross operating expenses consists mainly of energy costs, external consumption, staff expenses and taxes.

The level of the net operating expenses deducted is determined on the basis of all the costs necessary for the activity of the operators, pursuant with article L. 452-1 of the French Energy Code; these costs correspond to those of an efficient operator.

All the estimated data on the business plans communicated by Storengy, TIGF and Géométhane, is subject of a detailed analysis and, if necessary, of the revisions envisaged by CRE and presented in part 2.2.4 of this public consultation.

1.3.2 Normative Capital Expenses (NCC)

1.3.2.1 Method for the Calculation of Normative Capital Expenses

The normative capital charges (NCC) consists of the return on and depreciation of fixed capital. These two components are calculated from the valuation and development of assets exploited by operators - the regulated asset base (RAB) - and of fixed assets under construction (AuC), i.e. investments made that have not yet led to the commissioning of assets.

The NCC equates to the sum of the depreciation of assets from the RAB and the return from the fixed capital. This corresponds to the product of the value of the RAB and the weighted average capital cost (WACC) plus the product of the value of the AuC and the cost of debt.

$$NCC = \text{Depreciation of the RAB} + \text{RAB} \times \text{WACC} + \text{AuC} \times \text{cost of debt}$$

1.3.2.2 Method for the calculation of the rate of return on capital

In the absence of regulated operators of publicly traded natural gas storage sites, CRE considers the use of an indirect approach to define the activity remuneration rate, in accordance with what is done under the regulated tariff for access to the LNG terminal facilities (known as ATTM tariff).

For this, CRE plans to rely on the remuneration rate of the operators of the natural gas transmission networks. This activity is performed by listed companies and has an economic nature close to that of the natural gas storage operator activity and LNG terminals.

The method adopted to evaluate the rate of return on assets is based on the WACC with a normative financial structure. The operator's return must in fact enable it to service its debt interest and provide it with a return on equity that is comparable to that which it could obtain for investments with similar risk levels. This cost of equity is estimated based on the capital asset pricing model (CAPM).

CRE then plans to adjust the WACC of the activity of the operators of gas transmission networks on the basis of economic and financial considerations by increasing this rate by a specific premium linked to the activity of regulated storage site operators.

1.3.2.3 Method for the calculation of the Regulated Asset Base (RAB)

CRE plans to retain, for the definition of the initial level of the RAB of the storage operators, the method for the calculation of the RAB used in the ATRT tariff. The value of the RAB is established using a « current economic costs » method, the main principles of which were fixed by the special Commission set up under article 81 of the amending Finance law of 28th December 2001, tasked with setting the price of transfer by the State of its natural gas transmission networks. The gross book values of assets is adjusted for subsidies received in respect of carrying out these investments.

Once the initial value of the RAB is defined, its level will then evolve each year with the commissioning and disposal of assets, the depreciation of assets, and the revaluation against inflation.

Assets are revalued for inflation, on January 1st of every year. The revaluation index used is the index 1763852 for consumer prices, excluding tobacco, for all households residing in France.

Once the initial RAB is defined, the assets are linearly depreciated on the basis of their economic life. The economic life considered by CRE, at this stage, is detailed in paragraph 2.2.1.3.

1.3.2.4 Return on assets prior to their commissioning

CRE plans to retain the principle of remunerating assets under construction (AuC) at the nominal cost of debt before tax, in line with the methodology generally used for interest during construction.

As in the regulated ATTM tariff, CRE intends to set the level of this rate by reference to the rate in the current ATRT tariff plus the specific premium applied for storage.

The amount of these AuC is equal to the average, for each year the tariff is applied, between their level estimated on 1st January and that at 31st December, taking into account the investment expenses incurred and the amount of assets commissioned during the year.

1.3.3 Expenses and Revenue Clawback Account (CRCP)

The ATS tariff is defined based on assumptions on the level of cost and revenue. CRE is considering, at this stage, to implement an adjustive mechanism *a posteriori* (on the following years), the CRCP, in order to take into account, the differences between the actual expenses and income, and the projected expenses and income.

This general framework is consistent with the current frameworks for all the tariffs for the facilities established by CRE, and has the advantage of being mastered and transparent. The storage operators, in their tariff requests, have proposed tariff frameworks based on this.

Question 1 Are you in favour of the general principles relating to the determination of the authorized income of the storage operators?

Question 2 Are you in favour of the introduction of a CRCP in order to regularize the differences between the actual charges and revenue generated, and the forecasted expenses and

revenue for operators?

1.4 Term and tariff Calendar

The storage operators asked in their tariff requests for periods of regulation ranging from four to six years, with the shared objective of having sufficient visibility to meet, in particular, long investment cycles in infrastructure and the risk of certain assets being removed from PPE storage perimeter.

CRE considers that, given the particularly short timeframes for implementing the reform and the impossibility for CRE to audit all the elements provided by the operators within this deadline, the choice of a first shorter regulation period of two years is preferable. It shall allow, after a first implementation phase, to draw lessons from experience feedback in order to define a future tariff over a longer period of time.

This experience feedback will allow, in particular, the implementation, where appropriate, of adapted incentive regulations that require longer periods of application.

In addition, CRE plans an annual tariff update, on April 1st of each year, allowing the best expenditure and revenue estimate for the coming year, to be taken into account as well as the calculation of the CRCP balance to be cleared the following year.

Question 3 Are you in favour of an initial short regulation period of two years?

1.5 Tariff Principle « 100% to CRCP »

The particularly short deadlines for the implementation of the ATS tariff do not allow CRE to propose a trajectory of net operating expenses sufficiently relevant to apply effective incentive regulation: if set too high, the trajectory would generate undue revenue for the operators. On the contrary, if set too low, it would not cover the expenses of the operators.

CRE proposes for this first exercise, to retain a tariff framework in which the differences between the actual and the forecast for the ensemble of expenditures and revenues are regularized *a posteriori* through the CRCP. This mechanism guarantees an *in fine* tariff level that is ultimately strictly equal to the actual expenses and revenues of the operator; however, it has the drawback of not encouraging operators to control their expenses, particularly in terms of operating expenses.

Controls *a posteriori* may nevertheless be ordered to ensure that the charges incurred are effective and prudent. Financial consequences of the audits conducted by CRE shall be taken into account through the CRCP.

1.6 CRCP operation

CRE provides to define the ATS tariff based on assumptions about the level of expenses and revenues. It thus plans to introduce a CRCP to take into account the differences between the projected expenses and products, and the actual expenses and products. The calculation method of the CRCP would be consistent with a tariff equilibrium per calendar year.

CRE plans to calculate the CRCP balance as of December 31 of each year. It would take into account the differences in expenses or revenues recorded compared to the net operating expenses forecasted. The balance of this account as of December 31 of the year N shall be cleared the year N+1 on the occasion of the annual tariff evolution by a decrease or an increase in the authorized revenue, within the limit of a variation of the estimated allowed revenue of +/- 5 %. In case of exceeding this threshold of +/-5%, the regularization of the remaining difference would be made through the CRCP of the following years, always within the same threshold limit.

In order to ensure the financial neutrality of the mechanism, the CRCP would be discounted at the nominal risk-free rate that will be used for the tariff period.

The positions covered by the CRCP for the ATS tariff would be as follows within the scope of regulated infrastructure:

- net operating expenses;
- normative capital expenses;
- marketing revenues for storage capacities, including ancillary services, and the revenues from transmission network users;
- purchases and sales of performance gas.

Question 4 Are you in favour, for the first tariff period, of a tariff framework « 100% to CRCP » and an annual clearance of this CRCP within the framework of +/- 5% of the estimated allowed revenue?

1.7 Incentive regulation

1.7.1 Storengy Proposal

Storengy indicates that it supports the principle of incentive regulation. Nevertheless, they would prefer to wait for sufficient experience feedback, of one or two years, in order to collectively build the possible incentives that would allow, where appropriate, to improve the system and to define relevant indicators and objectives.

1.7.2 TIGF Proposal

TIGF indicates that it supports the principle of incentive regulation.

TIGF is open to such measures being implemented after a feedback return on marketing.

1.7.3 CRE Preliminary Analysis

Incentive regulation measures could be considered in order to encourage operators to be as efficient as possible on their marketed products.

CRE considers that, if an incentive regulation was to be implemented, it could take one of the two forms described below. These two solutions are consistent with the main objective of maximizing the volumes sold.

1. Allow the operators to retain a portion of the auction revenues:

In order to follow the main objective, which is to maximize the capacities sold and not the revenues from the auction, the incentive on auction revenues could be accompanied by a condition relating to the capacities sold. For example, subject to the achievement of 90% of its sold volumes, an operator could retain a percentage of auction premiums generated by its sales. The best performing capacities (with the best throughput) should be subject to higher bid premiums. This incentive regulation measure allows, in consequence, to pay for the most efficient storages.

2. Award bonuses to the operators based on storage capacities sold at the auction:

A bonus could be awarded beyond a certain percentage of capacities sold, then be increased proportionally until everything is sold. The different bonus levels would be fixed *ex ante* by CRE. CRE considers, however, that the storage operators already have a strong interest in marketing their entire storages, in order to maintain their physical performance.

Question 5 Are you in favour of the introduction of an incentive regulation on marketing? If yes, what form would you like it to take?

2. AUTHORIZED REVENUES OF THE STORAGE OPERATORS

2.1 Request for Authorized Revenues of the Operators

2.1.1 Request of Storengy

2.1.1.1 Request for RAB

Storengy indicates that it has established its initial request of RAB based on the principles and methods used by CRE when defining the first ATRT tariff which was based on the conclusions of Special Commission established by Article 81 of the amended Finance Act of December 28 of 2001 (called Hourri Commission) in charge of the establishment of the sale price, by the State, of the natural gas transmission network.

Storengy indicates that it has applied asset revaluation procedures similar to those applied in the ATRT tariff and has retained depreciation periods of assets corresponding to their technical lifespan:

- Wells, cavities and collections: 50 years
- Treatment and compression facilities: 30 years
- Buildings and civil engineering: 30 years
- Measurement material, tele-exploitation and other equipments: 10 years
- Small materials: 5 years
- Lands: non-amortized
- Cushion gas: horizon 2260, this horizon corresponds to the horizon of extinction of natural gas resources in the world according to the IEA (World Energy Outlook 2011).

The following table displays the Request of RAB trajectory from Storengy:

In M€	2018	2019
RAB at 01/01/N	4,022	4,183
<i>of which cushion gas</i>	2,215	2,242
<i>of which other assets</i>	1,806	1,940
Assets under construction	351	199

Storengy RAB integrates the assets of all the sites listed in the perimeter retained by the Multiannual programming of energy (PPE). It should be noted that in its application, the assets of the sites under reduced exploitation (Soings-en-Sologne, Saint-Clair-sur-Epte and Trois-Fontaines), called « mothballed », are integrated to the RAB with a nil value.

RAB and AuC trajectories are developed on the basis of the following investments and asset commissioning envisaged by Storengy:

In M€ currents	2018	2019
Investments	93	88
Commissioning	245	122

2.1.1.2 Request for remuneration rate of assets

Storengy has issued a request for a remuneration rate of 7.25 % (real, before tax) for all the assets included in the RAB. The operator indicates that such a rate, which is 200 basis points above the ATRT6 tariff (5,25 %) remuneration rate, reflects the risks inherent to the gas storage business that the operator estimates are at least as high as those carried by regulated LNG terminal operators.

For the assets under construction (AuC) (assets not included in the RAB because not commissioned), Storengy has issued a request for a remuneration rate of 5.70 % (nominal, before tax) and indicated that such a rate is 200 basis points above the ATRT6 tariff AuC's remuneration rate.

2.1.1.3 Request for normative capital expenses

The request for the trajectory of capital charges of Storengy, is as follows:

In M€ currents	2018	2019
Depreciation of the RAB	127	133
Remuneration of the RAB	292	303
Remuneration of the AuC	20	11
Normative Capital Expenses (NCC)	439	447

2.1.1.4 Request for net operating expenses

The following table displays the request for the trajectory of NOE of Storengy:

In M€ current	2018	2019
Net operating expenses	180	189

The net operating expenses consist of the gross operating costs less the operating revenues themselves composed of the services performed for the transmission operator and the capitalized production.

2.1.1.5 Request for authorized revenue

The following table displays the request for authorized revenue of Storengy for the period 2018-2019:

In M€ currents	2018	2019
Normative capital expenses (NCC)	439	447
Net operating expenses (NOE)	180	189
Authorized Revenue (RA)	619	636

2.1.2 Request of TIGF

2.1.2.1 Request for RAB

TIGF indicates to have established its initial request for RAB based on the principles and methods used by CRE when defining the first ATRT tariff which was based on the conclusions of the Special Commission established by Article 81 of the amended Finance Act of December 28 of 2001 (called Hourri Commission) in charge of the establishment of the sale price, by the State, of the natural gas transmission network.

TIGF indicates that it has applied asset revaluation and depreciation procedures similar to those applied in the ATRT tariff:

- Wells, pipes and connections: 50 years
- Delivery posts, regulation, metering and compression stations: 30 years
- Real estate and constructions: 30 years
- Equipments, tools, SI and ancillary facilities: 10 years
- Software: 5 years
- Lands : not-amortized

As well as:

- Cushion gas: 250 years

The following table displays the request for RAB trajectory of TIGF:

In M€ currents	2018	2019
RAB for 01/01/N	1,372	1,456
of which cushion gas	1,012	1,022
of which other assets	360	434
Assets under construction	89	44

TIGF RAB integrates the assets of all the sites listed in the perimeter retained by the Multiannual programming of energy (PPE), namely the sites of Izaute and Lussagnet.

RAB and AuC trajectories are developed on the basis of the following investments and asset commissioning envisaged by TIGF:

In M€ currents	2018	2019
Investments	72	62
Commissioning	102	62

This investment includes, particularly, the project called « Lussagnet phase 1 » listed in the PPE among the additional capacities of the sites in development having an authorization under the Mining Code and Environmental Code.

2.1.2.2 Request for remuneration rate of assets

TIGF has issued a request for a remuneration rate of 7.50 % (real, before tax) for the assets included in the RAB. The operator indicates that this rate, located 225 base points above the ATRT6 tariff remuneration rate (5.25%), is supported by qualitative analyses of the risk of the natural gas storage activity which lead to positioning this activity at a level of risk and profitability at least equivalent to that of regulated LNG terminals.

For the assets under construction (AuC) (assets not included in the RAB because not commissioned), TIGF has issued a request for remuneration rate of 3.70 % (nominal, before taxes), identical to the compensation rate of the AuC retained on the ATRT6 tariff.

2.1.2.3 Request for normative capital expenses

The request for the trajectory of the capital expenses of TIGF is the following:

In M€ currents	2018	2019
Depreciation of the RAB	40	46
Compensation of the RAB	103	109
Compensation of the AuC	3	2
Normative capital expenses (NCC)	146	157

2.1.2.4 Request for net operating expenses

The following table displays the request for the trajectory of the NOE of TIGF:

In M€ currents	2018	2019
Net operating expenses	42	44

2.1.2.5 Request for authorized revenue

The following table displays the request for authorized revenue of TIGF for the period 2018-2019:

In M€ currents	2018	2019
Normative capital expenses (NCC)	146	157
Net operating expenses (NOE)	42	44
Authorized revenue (RA)	188	201

2.1.3 Request of Géométhane

2.1.3.1 Request for RAB

Géométhane indicates to have established its initial request for RAB based on the principles and methods used by CRE when defining the first ATRT tariff which was based on the conclusions of the Special Commission established by Article 81 of the amended Finance Law of December 28 of 2001 (the Hourri Commission), in charge of setting the sale price, by the State, of its natural gas transmission network.

Géométhane indicates that it has applied asset revaluation procedures similar to those applied in the ATRT tariff and has retained a depreciation period for the assets corresponding to their technical or economic lifetime:

- Wells, cavities and collections: 50 years
- Real estate and constructions: 30 years
- Wellhead equipments: 25 years
- Technical facilities: 10 to 30 years
- Industrial tools: 15 years
- Vehicles: 10 years
- Software and small equipments: 5 years
- Cushion gas: horizon 2260, this horizon corresponds to the horizon of extinction of natural gas resources in the world according to the IEA (World Energy Outlook 2011).

The following table displays the request for RAB trajectory of Géométhane:

In M€	2018	2019
RAB on 01/01/N	202	214
<i>of which cushion gas</i>	38	39
<i>of which other assets</i>	163	175
Assets under construction	71	83

Géométhane RAB integrates the assets of all the sites listed in the perimeter retained by the Multiannual programming of energy (PPE), namely those of the Manosque site.

RAB and AuC trajectories are developed on the basis of the following investments and asset commissioning envisaged by Géométhane:

In M€ currents	2018	2019
Investments	32	50
Commissioning	20	-

These investments comprehend, particularly, the project called « Manosque 2 » listed in the PPE among the additional capacities of the sites in development having an authorization under the Mining Code and Environmental Code.

2.1.3.2 Request of remuneration rate of assets

Géométhane has issued a remuneration rate of 7.50 % (real, before tax) for the assets included in the RAB. The operator indicates that this rate, which is 225 base points above the ATRT6 tariff remuneration rate (5.25%), reflects the risks inherent in gas storage business as well as the specificity of Geomethane, which has only one storage site.

Géométhane has also formulated a 150-basis-point enhanced call for remuneration rate for the assets of its project Manosque Phase 2, a rate of 9.0% (real, before tax), that the operator justifies in particular by the needs of decongestion of the South-East zone and fluidification of the North-South links that these investments should make it possible to satisfy.

For the assets under construction (AuC) (assets not included in the RAB because not commissioned), Géométhane has issued a request for remuneration rate of 5.70 % (nominal, before taxes), and indicated that such rate corresponds to that of CRE on the ATRT6 tariff table, incremented by 200 basis points.

2.1.3.1 Request for normative capital expenses

The request for the trajectory of the capital expenses of Géométhane is the following:

In M€ currents	2018	2019
Depreciation of the RAB	9	10
Compensation of the RAB	15	16
Compensation of the AuC	5	6
Normative capital expenses (NCC)	29	32

2.1.3.2 Request of net operating expenses

The following table displays the request for the trajectory of the NOE of Géométhane:

In M€	2018	2019
Net operating expenses	15	16

The net operating expenses consist of gross operating costs net of revenues, composed of services performed on behalf of the transmission operator and capitalised production.

2.1.3.3 Request for authorized revenue

The following table displays the request for authorized revenue of Géométhane for the period 2018-2019:

In M€ currents	2018	2019
Normative capital expenses (NCC)	29	32
Net operating expenses (NOE)	15	16
Authorized revenue (RA)	45	48

2.2 CRE preliminary analysis

2.2.1 Modalities for establishing the RAB

2.2.1.1 Perimeter of the assets

The perimeter to be used for the calculation of the operator RAB is defined by the Multiannual programming of energy (PPE) which lists, for each of the operators, the sites and the projects forming part of the perimeter of the regulation.

The operators indicate that the scope of the assets they have selected for the calculation of the RAB is in line with the perimeter defined in the PPE.

Storengy indicates having included at a nil value the storage sites that the operator has placed at reduced performance ("mothballed" facilities), and whose value has been fully depreciated in the accounts of the operator.

CRE considers that the perimeter presented by the operators is compliant with that defined by the PPE.

2.2.1.2 Value of the assets to take into account for the calculation of the RAB

CRE considers that the value of the assets to take into account for the calculation of the RAB of the operators are the gross values as they appear in social accounting (in French standards) of each of the operators as these values reflect the cost of the investments at the time when they integrated the assets of the operator (following their purchase or their transfer).

This principle is the one retained by CRE in the calculation of the RAB of all the operators of any gas facility that it regulates.

Storengy's request is consistent with this principle, unlike that of TIGF which, for the cushion gas, retains values substantially different from those in its accounts. Géométhane's request also shows, to a lesser extent, differences between the book values and the values used to calculate the RAB.

CRE plans to carry out restatements for TIGF and Géométhane in order to bring together the asset values used for the calculation of the RAB and the asset values shown in the accounts.

2.2.1.3 Depreciation period of the assets

CRE considers that the depreciation period for each of the constitutive asset categories of the RAB must be consistent with the depreciation period taken by the operators in their respective social accounting since the commissioning of their assets.

As such, the depreciation of assets at the entry into the regulation (that is to say in the opening RAB) must be consistent with the accounting depreciation proportions of these assets.

a) Assets excluding cushion gas

CRE notes that for cavities and surface assets (wells, technical installations, real estate and buildings, equipments, etc.), the depreciation periods submitted by each operator are consistent with the accounting methods applied until now by the three operators.

In consequence, CRE intends to use, for the calculation of the initial RAB as well as for the calculation of the annual depreciation of assets, the subsequent depreciation periods:

Asset category	Normative lifetime
Wells, cavities, collection	50 years
Processing, compression, delivery, counting facilities	20 to 30 years
Real estate and buildings	30 years
Miscellaneous equipments	10 to 15 years
Software, small equipments	5 years

b) Cushion gas

The gas called « cushion » refers to the gas injected perennially in the underground cavities and essential for the operation of the storages and necessary to maintain a minimum storage pressure allowing the supply of useful volume with the required withdrawal profile. The latter is registered in the accounting immobilization of operators.

Depreciable nature of the cushion gas

In their requests, the operators amortize the cushion gas, which is consistent with their accounting treatment of cushion gas.

Depreciable property is the fixed asset that loses value due to use or time. The depreciable nature of an asset could be challenged if no impairment loss were recognized over time.

The cushion gas in this respect is of a special nature insofar as it is a commodity, unlike other assets of the operators. Usually, the value of a commodity does not evolve according to its use or through time but based on its market price.

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CRE, nonetheless, notes that extracting the cushion gas would be very complex and expensive, and that in any case, there is no certainty that it can be recovered by operators, which leads the French operators to depreciate this asset.

CRE also considers that non-depreciating the cushion gas would result in not covering part of the costs faced by the operators.

At this stage, CRE considers the depreciation of the cushion gas in the calculation of the RAB and, therefore, the authorized revenue of the operators.

Depreciation methods in the initial calculation of the RAB

The operators retained, in their respective accounts, the subsequent depreciation periods:

Depreciation term	Storengy	TIGF	Géométhane
In social accounting	- until 2008: 50 years - 2008-2010: horizon 2068 - after 2011: horizon 2260	25 years	Horizon 2068

In their requests, the operators retain a depreciation period for the cushion gas, in order to establish the initial value of RAB and to define the level of future depreciation, of 250 years for TIGF and horizon 2260 for Storengy and Géométhane.

Depreciation term	Storengy	TIGF	Géométhane
Operators request	Horizon 2260	250 years	Horizon 2260

Taking into account, for the calculation of the initial RAB, these depreciation periods (longer than those historically retained in the accounting of the operators) would mechanically lead to a depreciation proportion of the cushion gas in the initial RAB that would be much lower than that observed in their accounts.

Depreciation ratio	Storengy	TIGF	Géométhane
In social accounting as of December 31, 2016	39 %	48 %	13 %
In their request for initial RAB	< 5 %	< 5 %	< 5 %

CRE estimates that retaining the depreciation period presented by each operator in their tariff application would lead to make the final consumer pay for a portion of the depreciation of the value of cushion gas that has already been recorded in the past results of the operators.

CRE considers, at this stage, that adjustments are necessary so that the depreciation proportions of the cushion gas at the entry into the regulation are consistent with the accounting depreciation levels of this asset.

Future depreciation methods for the cushion gas

As previously stated, none of the operators depreciates the cushion gas over the same period in its corporate accounts. These periods are of 25 years for TIGF, horizon 2068 for Géométhane and horizon 2260 for Storengy. CRE wonders about the relevance of the request of the operators for cushion gas depreciation over such long periods of time (250 years), in particular with regards to the duration of the concessions and the depreciation period of the other storage assets.

CRE therefore examines shorter depreciation-period scenarios, in particular 50 years.

2.2.1.4 Projected trajectory of RAB 2018-2019

The projected levels of RAB introduced below are calculated from the level of fixed assets in service at December 31, 2016 and commissioning assumptions for the years 2017 and 2018 transmitted by the operators. They take into account the adjustments on the value of the assets taken into account in the calculation of the RAB and on the proportion of depreciation of the cushion gas at the entry in the regulation.

RAB on 01/01/N in Md€	Storengy		TIGF		Géométhane	
	2018	2019	2018	2019	2018	2019
Operators request	4.02	4.18	1.37	1.45	0.20	0.21
<i>of which cushion gas</i>	2.22	2.24	1.01	1.02	0.04	0.04
<i>of which other assets</i>	1.81	1.94	0.36	0.43	0.16	0.18
Levels envisaged by CRE	3.35	3.49	1.05	1.10	0.19	0.20
<i>of which cushion gas</i>	1.40	1.39	0.74	0.72	0.03	0.03
<i>of which other assets</i>	1.95	2.10	0.31	0.38	0.15	0.17

Question 6 Do you have any remarks concerning the calculation methods of the RAB and the levels envisaged by the CRE?

Question 7 Do you have alternative methods for calculating the RAB to propose?

2.2.2 Remuneration rate of assets

Remuneration rates (real, before tax) presented by the operators in their tariff requests (7.25 % for Storengy, 7.50 % for TIGF and Géométhane) are equal to or greater than the WACC applicable in LNG terminal tariff ATTM5 (7.25 %). This request is based on an assessment of the risk of the natural gas storage activity at a level at least equal to that of regulated LNG terminal activity.

The operators mention in particular the risks they consider specific to gas storage, including the underground geological risk, the risk linked to the introduction of regulation and the risk of substitutability of their activity (competition from LNG terminals, interconnections with foreign countries, etc.).

CRE conducted analyses of the risk level of the natural gas storage activity in relation to the risk level of regulated transmission activities and LNG terminals. These analyses, confirmed by benchmark elements at the European level, lead to consider a risk level of the gas storage activity higher than that of the gas transmission but lower than the LNG terminals.

Indeed, the new regulated storage access mechanism protects operators from the risk of not covering their costs (offsetting storage costs being perceived through a dedicated term in the ATRT tariff), unlike LNG terminals whose cost coverage depends on the subscription of their offers.

In compliance with the principles stipulated in paragraph 1.3.2.2 and following the risk analyses carried out, CRE is moving towards setting a remuneration rate (real, before tax) for the ATS period between the ATRT6 one (5.25 %) and the ATTM5 one (7.25 %).

In the present public consultation, the lower limit of the authorized revenue range of the operators is calculated with a compensation rate of 5.75 % (ATRT6 + 50 pdb) and the upper band with a rate of 6.75 % (ATRT6 + 150 pdb). The same specific premium is taken into account in the calculation of the remuneration rate of assets under construction (AuC).

Géométhane requested an additional remuneration premium of 150 pdb to be applied to the assets of its project « Phase 2 » for the AuC stage, as well as after the integration of the assets in the RAB, planned for 2021-2022. In this consultation, no premium is applied.

Compensation rates	Storengy	TIGF	Géométhane
Operators request			
RAB remuneration rates (real, before tax)	7.25 %	7.50 %	7.50 %
AuC remuneration rates (nominal, before tax)	5.70 %	3.70 %	5.70 %
Additional premiums	-	-	0.15 %
Level envisaged by CRE			
RAB remuneration rates (real, before tax)		[5.75 % - 6.75 %]	
AuC compensation rates (nominal, before tax)		[4.20 % - 5.20 %]	
Additional premiums		-	

Question 8 Do you have any remarks concerning the ranges of the remuneration rate of assets envisaged by CRE?

2.2.3 Level of normative capital expenses

Based on operators' RAB level for 2018 and 2019, the different depreciation period of the cushion gas envisaged and the range of rate of return on assets presented above, the projected trajectory of the normative capital expenses of the operators is presented below:

The assumptions underlying the calculation of the lower limit are:

- RAB trajectories adjusted as presented in paragraph 2.2.1.4;
- a RAB remuneration rate of 5.75 %;
- a depreciation of the cushion gas over 250 years.

The assumptions underlying the calculation of the higher limit are:

- RAB trajectories adjusted as presented in paragraph 2.2.1.4;
- a RAB remuneration rate of 6.75 %;
- a depreciation of the cushion gas for a period of 50 years to start on the date of entry into effect of the regulation.

Normative capital expenses (in M€)	Storengy		TIGF		Géométhane	
	2018	2019	2018	2019	2018	2019
Operators request	439	447	146	157	29	32
Level envisaged by CRE						
Low limit	320	330	97	105	23	25
High limit	382	390	120	127	26	29

Question 9 Do you have any comments on the capital cost ranges envisaged by CRE?

2.2.4 Level of net operating expenses

As stated in paragraph 1.5. CRE is not able, for the first tariff period, to establish a projected net operating expenses trajectory that is sufficiently relevant to apply an effective multi-year incentive regulation.

Trajectories proposed by TIGF and Géométhane are thus included as such in the calculation of authorized revenue for the years 2018 and 2019.

Concerning Storengy, CRE is considering the procedures to take into account certain group contracts included in the tariff application. These analyses are in progress and pending final results, CRE presents the following range:

- for the lower limit, an adjustment of up to 75% of the amount of the group benefit contracts being analysed is taken into account, an average of -15 M€ per year;
- for the higher limit, the entire request of Storengy is taken into account.

CRE will also ensure during its final deliberation the correct estimate of « taxes and duties » and « social charges » cost items with regards to the level of authorized revenue and fiscal parameters in force.

Net operating expenses (in M€)	Storengy		TIGF		Géométhane	
	2018	2019	2018	2019	2018	2019
Operators request	180	189	42	44	15	16
Level envisaged by CRE						
Lower limit	166	174	42	44	15	16
Higher limit	180	189	42	44	15	16

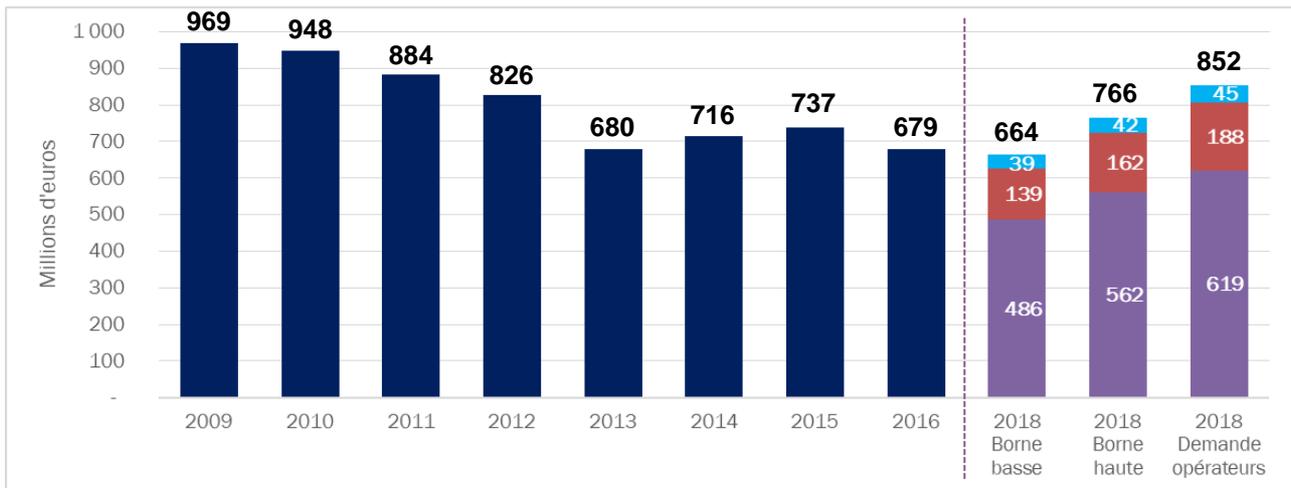
Question 10 Do you have any comments on the net operating expense ranges envisaged by CRE?

2.2.5 Authorized revenues – Summary of CRE Preliminary Analysis

On the basis of the elements presented above, the following table displays the authorized revenue ranges envisaged by CRE for the three operators:

Authorized revenues (in M€)	Storengy		TIGF		Géométhane		TOTAL	
	2018	2019	2018	2019	2018	2019	2018	2019
Operators request	619	636	188	201	45	48	852	885
Level envisaged by CRE								
Lower limit	486	504	139	149	39	41	664	694
Higher limit	562	579	162	171	42	45	766	795

Estimation of historical turnover and range of authorized revenues 2018 (M€)



It should be noted that TIGF requests a depreciation period for the cushion gas of 250 years, very much superior to that used in its accounts in past financial years (25 years). In the context of the scenario expressed above, in which the cushion gas is depreciated over 50 years, the authorized revenue for TIGF is of 162 M€. Illustratively, recalculated with different depreciation periods, the authorized revenue for TIGF would be of 151 M€ considering a period of 250 years and of 176 M € considering a period of 25 years.

Question 11 Do you have any remarks concerning the authorized revenue ranges envisaged by CRE?

3. COLLECTION TERMS IN THE USE OF THE DISTRIBUTION NETWORK

The Hydrocarbures Law amends the Article L. 452-1 of the French Energy Code, stipulating « *the tariffs for use of the transmission network [...] are established in a transparent and non-discriminatory manner in order to cover all the costs borne by the distribution network managers and of the operators of the storage facilities mentioned in the same Article L. 421-3-1* ».

Otherwise, it stipulates that « *the tariffs for the use of the natural gas transmission network may include a fixed share, a share proportional to the subscribed capacity and a share proportional to the difference between the firm capacity subscribed in winter and the average annual use of this capacity* », and that « *the operators of the transmission networks shall return to the underground storage of natural gas operators mentioned in Article L. 421-3-1 part of the amount recovered in accordance with the procedures established by the Energy Regulatory Commission* ».

A compensation shall be calculated for each storage operator, corresponding to the difference between the authorized revenue stipulated by CRE and the revenues from the marketing of the capacities being auctioned. Storengy, TIGF and Géométhane compensations are additionned to establish a 'total France' compensation.

3.1 Introduction of an additional tariff term in ATRT6 Tariff

CRE envisages, at this stage, to define a new tariff term in the ATRT6 tariff which will make it possible to recover the amount of the compensation from the shippers present on the transmission network of GRTgaz and TIGF. This tariff term shall be introduced in the ATRT6 tariff within a deliberation complementary to the deliberation of December 14., 2017 on the update on April 1st, 2018 of the distribution tariff. This deliberation would take place following the capacity auction, and at the latest on March 31 of 2018, in order to set the level of the tariff term at the fair.

The storage tariff term shall be identical for each TSO and shall be charged to the shippers using their respective networks. It will be updated each year based on auction results.

$$\text{Storage Tariff Term} = \frac{\text{Compensation France}}{\sum_{\text{FRANCE}} \text{Base customers}}$$

Thus, the compensation to be collected from each shipper is defined as the sum of the compensation of each of his customers.

$$\text{Shipper compensation } A = \text{Storage Tariff Term} * \sum_{\text{Clients Shipper } A} \text{Base customers}$$

3.2 Compensation basis

3.2.1 Reminder of the system of obligations in force

The system governing third-party access to storage capacities in France was defined by decree in 2006, in the context of the opening up of gas markets. This access is based on the definition of an individual storage right associated with each final consumer, dependent on their consumer profile. Furthermore, the profile of a consumer is modulated, as his unit storage rights increase.

The annual envelopes of storage rights, in volume (GWh) and at peak (GWh/j), shall be adopted by the Minister for Energy ⁴, in order to reflect the storage needs of suppliers according to their customer portfolio, and to guarantee the continuity of supply of their final customers in cold peaks; that is to say, to cover the consumption surpluses of the final customers in the event of a cold winter such as it statistically occurs one every 50 years, (called « risk 2 % » or « peak P2 »).

Furthermore, the storage obligations require gas suppliers to contribute to guarantee the supply. Article R. 421-15 of the French Energy Code, specifies that they must have, by October 31 of each year, a minimal stock of gas corresponding to an « *80 % the sum of storage rights in useful volume and in withdrawal rate, as defined in Article R. 421-6, for those of its customers mentioned in Article R. 121-47 connected to the distribution network* », that is, customers connected to the domestic distribution network, non-domestic performing missions of general interest, linked to the satisfaction of the basic needs of the nation, or uninterruptible or unloadable. The storage obligation is reinforced by Decree N° 2014-328 of March 12 of 2014, in a context of falling subscription rates and filling levels of storage particularly low in France and Europe: the decree introduced a debit storage obligation to be added to the already existing volume obligation.

⁴ Decree of February 7, 2007 relating to the profiles and unitary storage rights, updated annually (last update: Decree of January 27 of 2017 amending the Decree of February 7, 2007 relating to the profiles and unitary storage rights).

Gas suppliers affect storage costs to customers affected by the obligations in their energy bill.

3.2.2 Basis Contemplated by CRE

CRE considers that the underground storage of natural gas, provides a double service:

- on one hand, the distributors are allowed to extract and sell from storage, in winter, a gas less expensive than the one injected during the summer: this value, commonly called « market value », should be translated into revenue associated with the auctioning of storage capacities;
- on the other hand, they are allowed to feed their final customers, in particular those protected, during the cold peaks when the available capacity at the French borders (to interconnections and LNG terminals) is not enough to guarantee the supply to the final customers. In the current system (described in 3.2.1), the underwriting and filling of storages to guarantee the passage of the peak are ensured by the presence of obligations whose level depends on the modulation of each customer. In the regulated system implemented by the Hydrocarbures law, the cost of this value « security of supply » storages correspond to the residual costs necessary to maintain and to replace the storage with the excess of revenues derived from the auctions of storage capacities corresponding to the compensation term.

In consequence, CRE envisages, at this stage, keep for compensation purposes a base similar to that used to determine the shippers storage obligations in the current system: this base would take into account the protected customers, that is to say, whose gas supply must be guaranteed or cannot be technically interrupted in critical situations, according to their modulation.

In the context of particularly tight deadlines for the implementation of gas storage reform, CRE considers, furthermore, this solution has the advantage of preserving the predictability of the costs necessary for the proper functioning of the markets.

CRE holds, at this stage, the following categories of customers connected to the distribution networks for the definition of the base:

- Domestic customers, including households residing in a collectively heated building;
- Non-domestic customers performing missions of general interest related to meeting the basic needs of the nation⁵ ;
- customers who have not contractually accepted a supply likely to interrupt, or that or who have not declared themselves loadable.

This base being similar to that which allowed to size storage obligations, CRE considers that the bills of the customers concerned should only evolve marginally: the amounts paid by them to their gas supplier included the cost of storage obligations which shall be replaced by a dedicated term in the transmission tariff.

Question 12 Are you in favour of the base contemplated by CRE?

3.2.3 Method for the calculation of the compensation basis

3.2.3.1 Methods proposed by GRTgaz and TIGF

3.2.3.1.1 Method 1: « Peak P2 »

The method 1, called « Peak P2 », is to charge compensation according to the consumption level at the peak of each consumer, and its average consumption, reminding the current system of obligations described above.

Each final customer of any distributor is assigned a modulation corresponding to the difference between its peak consumption at risk 2 % (P2) and 110 % of its average daily consumption.

This method consists of calculating the peak P2 for profiled customers, but also for customers « under subscription ». Indeed, the DSO also attribute to these an annual reference consumption (ARC) and a reference profile based on their winter modulation, in compliance with the method applied to the profiled customers. The ARC and the profiles attributed to these customers would be transmitted to the TSO by the DSO.

- The consumption peak is determined by the following formula:

$$Peak P2 = A.zi.CAR$$

⁵ The list of these customers is fixed within each department prefectural order.

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Or:

- ARC: annual reference consumption. The ARC is currently calculated once a year by the DSO for all customers, then is transmitted to the TSO for profiled customers. The ARC calculation methods are available in the GTG site⁶.
 - A: coefficient reflecting the relationship between the capacities, called « standardized », calculated by the TSO for the delivery points (PDL) « without subscription », supplied downstream of a given PITD, and the daily consumption of the delivery point PDL calculated by the DSO profiling algorithm. An update of this coefficient is carried out on April 1st of each year via a deliberation of CRE.
 - Zi: conversion coefficient taking into account the weather station and the consumption profile of the customer. The attribution method for the profiles is available in the GTG site⁷.
- The average daily consumption corresponds to the ARC divided by 365.

Subject to the establishment of an uninterrupted device on 1 April 2018, those capacities that would be contractualized as interruptible by a customer (Int), shall be deduced from the modulation. Thus, the final calculation formula for the modulation of an end client, shall be as follows:

$$\text{Customer modulation} = A.zi.ARC - 110\% \times \frac{ARC}{365} - Int$$

The base corresponding to each customer is calculated according to the following formula:

$$\text{Customer base} = \frac{\text{customer modulation}}{\text{sum France of modulations}}$$

3.2.3.1.2 Method 2: « subscribed capacities - average daily consumption »

Method 2, called « subscribed capacities – average daily consumption », presented and privileged by both TSO, provides that the compensation that each distributor should pay is applied to the difference, if it results to be positive, on one hand, the firm subscribed capacity by each of its customers on each PITD and, on the other hand, the sum of the average daily consumption of each customer and the share of their declared interruptible capacity.

Thus, the modulation affected for each customer shall be as follows:

$$\text{Customer modulation} = \text{Max}(0; CJN - \frac{ARC}{365} - Int)$$

Or:

The normalized daily capacity (CJN, for its acronym in French) is defined in accordance with the type of customer:

- Customer profile (client not measured or read daily) : $CJN = A.zi.CAR$
- Customer with a subscription (client measured and read daily): the CJN is equal to its daily carrying capacity subscribed (CJA) a given day of the month, which remains to be fixed.

The base corresponding to each customer is calculated according to the following formula:

$$\text{Customer base} = \frac{\text{customer modulation}}{\text{sum of modulations at the France mesh}}$$

3.2.3.2 CRE Analysis

Method 1: « Peak P2 »

The method called « Peak P2 » is based on the gap between the customer's P2 peak and 110 % of its average daily consumption. This calculation is, in theory, identical to the current calculation of the storage rights.

⁶ [calculation of annual reference consumption](#)

⁷ [Calculation of coefficients Zi](#)

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CRE considers this method allows for the peak consumption of each customer, and thus its modulation, whether he is a profiled client or « with subscription ». However, the coefficient of 110%, applied to the daily average consumption, and used in the calculation of storage rights is normative.

Furthermore, customers « with subscription » generally subscribe for capacity at a lower level than their peak P2. They would thus pay a higher compensation using this method than using the method 2. In particular, a seasonal customer would be billed the months he did not subscribe capacity contrary to the method 2.

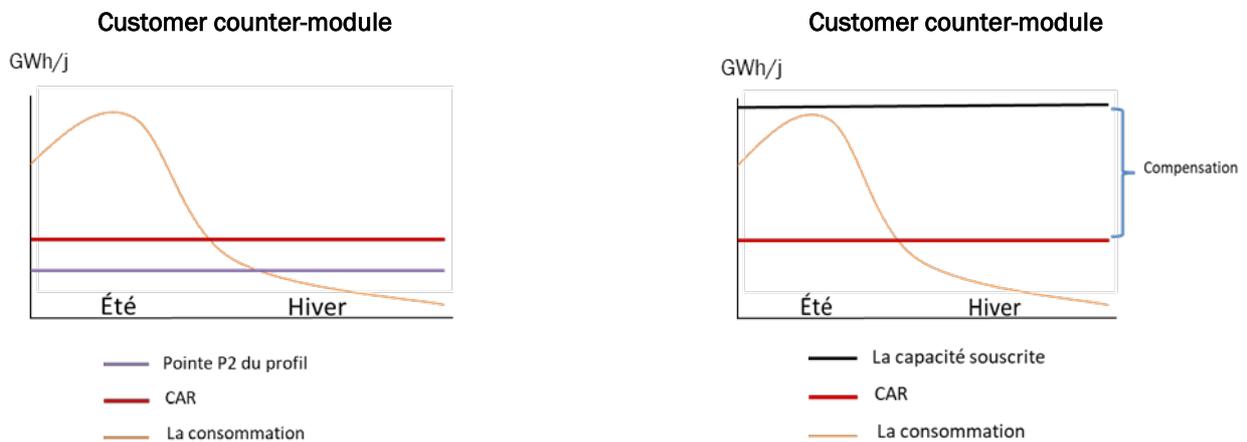
Finally, if this method were to be implemented, the DSO should assign ARCs and baseline profiles to all clients « profiled » or « with subscription » and send them monthly to the TSO, and not 3 times a year to storage as today.

Method 2: « subscribed capacities - average daily consumption »

This method takes into account the modulation of different consumers. The modulation of a customer being the difference between its subscribed capacity and its average daily consumption. However, it could introduce a bias for the counter-modulated client « with subscription », who would pay a compensation in summer when his subscribed capacity is greater than his average daily consumption while not paying in the current system of storage rights, his peak P2 consumption being lower than its average daily consumption. This bias is shown below:

Method 1: « Peak P2 »

Method 2: subscribed capacities - average daily consumption

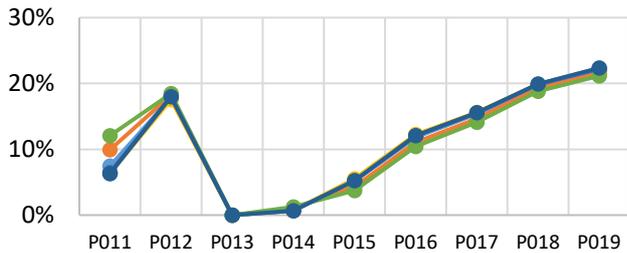


To amend this bias, a counter-modulation test is performed by the DSO, in order to identify the counter-modulated customers and exclude them from the compensation basis.

Finally, this method allows continuity with the current system of allocation of storage rights in the distribution of costs, as it's more transparent than Method 1, the DSO does not assign a profile to customers with subscription.

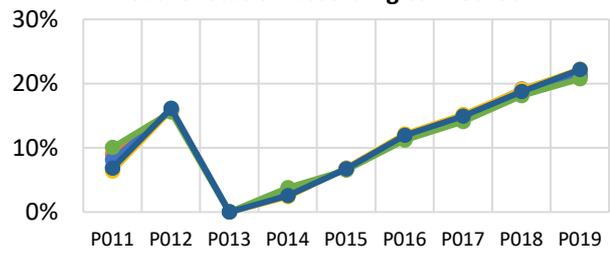
The compensation collection base would thus be close to the current breakdown of storage obligations, as shown in the graphics below:

Distribution of the compensation by weather station according to Method 1



- AGEN
- BIARRITZ-ANGLET
- BORDEAUX-MERIGNAC
- CLERMONT-FERRAND
- PAU-UZEIN
- PERPIGNAN

Distribution of the compensation by weather station according to Method 2



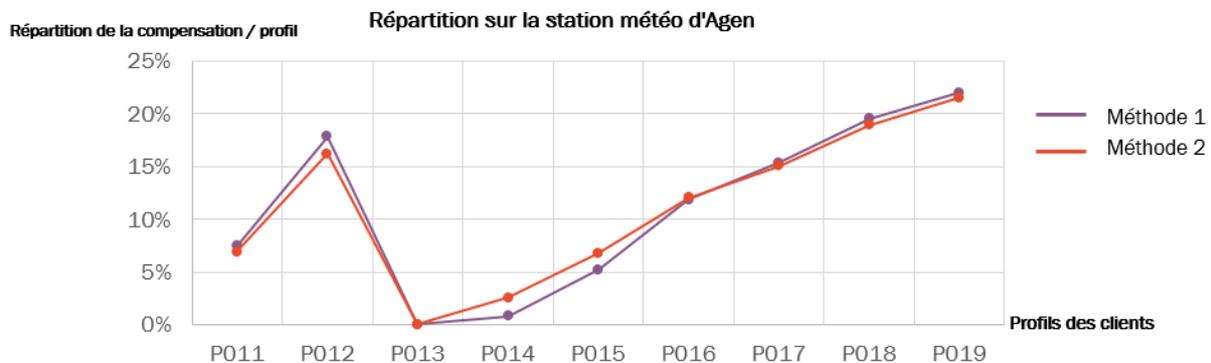
- AGEN
- BIARRITZ-ANGLET
- BORDEAUX-MERIGNAC
- CLERMONT-FERRAND
- PAU-UZEIN
- PERPIGNAN

The parties who participated in the storage workshop of October 13, 2017 organized by CRE, expressed themselves in favour of method 2, the latter being, according to them, representative of the need for modulation specific to each consumer.

Finally, by applying this method, a customer who does not consume gas during a period of the year and who does not buy a subscription, would not have to pay compensation for the period in question.

CRE considers, at this stage, that this method is preferred.

An example of the results of the compensation distribution, by method, is displayed in the table below. The following distribution is calculated depending on the customer's profile, on the Agen weather station, assuming that the ARC associated with each profile are identical:



Question 13 Among the proposed methods, which one seems most relevant for defining the compensation base?

Question 14 Do you have any additional remarks on the methods envisaged?

3.2.4 Reversal of the compensation by the TSO of the storage operators

3.2.4.1 Proposal of GRTgaz

GRTgaz proposes that compensation be collected by each TSO from the users of its network, then repaid to each storage operator in proportion to the compensation to be received.

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GRTgaz and TIGF would receive in M+1 the payment from the distributors, and would return in M+2 to the storage operators. As an example:

- TIGF would pay $\alpha\%$ of the amount collected to Storengy, $\beta\%$ of the amount collected TIGF Stockage, and $\delta\%$ to Géométhane;
- GRTgaz would pay $\alpha\%$ of the amount collected to Storengy, $\beta\%$ of the amount collected to TIGF Stockage and $\delta\%$ to Géométhane;

Where:

- α : the ratio of the annual estimated compensation of Storengy and the total annual estimated compensation.
- β : the ratio of the annual estimated compensation of TIGF Stockage and the total annual estimated compensation.
- δ : the ratio of the annual estimated compensation of Géométhane and the total annual estimated compensation.

GRTgaz proposes that each TSO signs a contract with each of the storage operators, framing the provision of the recovery service and compensation payment, and specifying the commitments made by each of the parties involved, as well as the operational modalities. With regards to the shippers, the agreement to collect the compensation would be integrated into the transmission contract.

3.2.4.2 TIGF proposal

In this proposition, TIGF recommends a method of compensation repayment that would limit inter-operator flows, each TSO calculating the compensation to be paid to the storage manager operating on its zone:

- if the amount of the transfer to be made by the TSO is less than the compensation of the storage manager of its balancing zone, the TSO makes only one transfer to the storage manager;
- if the amount of the transfer to be made by the TSO is higher than the compensation of the storage manager of its balancing zone, the TSO makes one transfer to each of the storage managers.

3.2.4.3 CRE Analysis

CRE is in favour, at this stage, with the proposal of GRTgaz, considering it more equitable between storage operators and giving visibility to the market participants. The calculation of the compensation being established for whole France, a repayment of this same compensation by zone seems inappropriate. This method also has the advantage of being applicable to all scenarios.

CRE considers that the transfer to the storage operators should be made at the beginning of the month M+2.

Question 15 Are you in favour of GRTgaz proposition, wherein each of two TSO pays compensation to three storage operators ?

4. COMMERCIALIZATION RULES OF STORAGE CAPACITIES

Marketing rules for storage capacities gave place to 3 workshops, organized by CRE, with market players, in 2016 and 2017. The supports of these workshops and the contributions of the actors are accessible on the website of CRE ⁸. Furthermore, CRE consulted with stakeholders on this topic in June 2016⁹.

At the end of this work, CRE considers that several major principles are consensual for the marketing of storage capacities for the year 2018-2019:

1. The commercialization's primary purpose is to maximize the subscriptions of storage capacities. As a second purpose, only, the income maximization from the auction is sought;
2. The auction shall be organized in a transparent manner, in particular with regards to the products marketed and reserve prices;
3. The storage operators shall propose a simple offer, in continuity with previous offers;
4. The auctions shall be spread over several days, in order to commercialize the capacities in lots of reasonable size.

CRE shall consult with the market players on how to commercialize storage capacities in order, on one hand, to arbitrate on the various topics on which no consensus was found during the workshops and, on the other hand, to define commercialization methods adapted to the context of the first year, namely a short duration of commercialization with little anticipation possible from the storage operators and distributors.

4.1 General Principles

4.1.1 Marketing Objectives objectives

CRE considers that the main objective of the commercialization of storage capacities must be to sell enough capacity to reach the level of subscriptions needed to ensure the security of supply. For that purpose, the terms of the commercialization must be simple to ensure its success in a time constrained. Secondly, it is desirable to generate a significant income from the marketing process in order to limit as much as possible the impact of storage costs on users of the transmission networks.

In their response to the public consultation of June 9, 2016, the majority of the parties expressed themselves favourably in pursuit of the objective of maximizing subscriptions. This consensus was confirmed in the framework of the workshop organized by CRE on October 13, 2017.

4.1.2 Room for flexibility of the storage operators

CRE considers that the storage operators are the most likely to offer a commercial offer adapted and likely to meet the expectations of their customers, due in particular to operational constraints related to storage. The marketing methods proposed in this public consultation resulted from the proposals of TIGF and Storengy. Marketing of Manosque storage, owned by Geomethane, is realized by Storengy. As such, the Storengy proposal also applies to this storage.

For the sake of transparency and in order to give visibility to all parties, CRE wished to consult the market on the specific terms of commercialization by the storage operators. CRE deliberation shall establish the rules applicable to the marketing methods, while leaving some room for flexibility to the operators, particularly concerning the characteristics of the products marketed as well as the exact time frame for marketing and the order of the different products.

Question 16 Are you in favour of the general principles envisaged by CRE for the marketing of the storage capacities for the first year?

⁸ <http://www.cre.fr/reseaux/infrastructures-gazieres/stockage>

⁹ Public consultation of the Commission for the Regulation of Energy of June 9, 2016 concerning the marketing rules for the storage capacities as part of the reform of third-party access to storage

4.2 Marketing calendar

4.2.1 Marketing period

4.2.1.1 TIGF and Storengy proposal

TIGF and Storengy hope once the necessary texts are published, that the initial phase of marketing of the storage capacities shall start on Monday February 26 or Monday March 5 of 2018, with a closing date on March 31 of 2018.

They want all available capacities to be offered to the market during this initial phase.

In order to give all the necessary visibility to the parties to position themselves on each auction, the operators propose to publish more than a week before the first auction:

- The complete sales calendar;
- The specific features of the products offered;
- The exact rules for auctioning;
- the contractual terms and prices of the services complementary to the storage products.

4.2.1.2 CRE preliminary analysis

At this stage, the CRE is in favour of an initial marketing phase of 4 or 5 weeks to allow the marketing of 100% of the available capacities before March 31 of 2018. Although such a duration is short, it allows to take into account the forced calendar of the marketing while leaving a satisfactory duration for the auction.

CRE is in favour of the auctions being conducted in a manner that is perfectly transparent to the market players. Thus, it is in favour of the operators' proposal concerning the publication of the specific terms and conditions of the auction.

Question 17 Are you in favour of an initial marketing phase of 4 or 5 weeks to allow the marketing of 100% of the available capacities before March 31 of 2018?

4.2.2 Auctioning sequence between TIGF and Storengy

4.2.2.1 Storengy proposal

Storengy is not opposed to the auction of the two storage operators being organized on separate days, provided that the distribution of marketing days between TIGF and Storengy is proportional to the quantity marketed by each operator. Thus, given that TIGF markets in the order of 25 % of the total available capability. Storengy proposes that TIGF has one day a week and Storengy, 3.

4.2.2.2 TIGF proposal

TIGF is in favour of the distribution of the marketing days between the two operators. But it wants each operator to have the same number of marketing days per each week. For TIGF, the auction sequencing must not depend on the volumes to be marketed by each of the operators.

TIGF requests that, if Storengy benefits from more auction days than TIGF, both operators should, however, have two auction days each during the first week (Tuesday and Thursday for TIGF, and Wednesday and Friday for Storengy).

4.2.2.3 CRE preliminary analysis

In the public consultation of June 9, 2016, CRE had proposed that the operators shall market their capacities on the same days. Several shippers have indicated that this goes against the goal of maximizing subscriptions during the auction phase: the desirability of a shipper for a storage product would depend on whether it can obtain other products. Thus, a simultaneous sale on several auctions would create uncertainties for the shippers, and could lead them to minimize their demand.

For this reason, CRE do not want multiple auctions to take place simultaneously. Consequently, it considers that the simplest solution is that the auctions organized by TIGF and Storengy take place on separate days.

With regards to the days concerned, several parties informed CRE that Fridays were busy days in terms of *trading* and *dispatching*, and that it was better not to hold auctions on those days.

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Furthermore, some parties have indicated that it is desirable to have a day to prepare the auctions of the coming week and as such, that it would be advisable not to hold auctions on Monday.

Taking into account these elements, CRE considers two options of weekly calendars:

- Option A: no auction on Mondays and Fridays. Storengy would then have two auction days and TIGF one auction day each week. In this case the schedule would be reduced to 4 weeks, this would lead Storengy to propose average volumes of 12.5 TWh each day and TIGF an average volume of 8 TWh.
- Option B: similar to option A, but with the possibility that Storengy holds auctions on Monday and for TIGF on Friday, or vice versa.

Finally, as proposed by TIGF, it could be envisaged that each operator has the same number of auction days the first week.

Question 18 Which weekly calendar seems preferable to you?

4.2.3 Breakdown of products in batches and rules of batching

4.2.3.1 Storengy Proposal

Storengy wants to be able to offer every day of sales a maximum capacity of the order of 15 TWh. Furthermore, it hopes to be able to propose in at least 3 lots each product whose total quantity offered for sale is greater than 10 TWh.

4.2.3.2 TIGF Proposal

TIGF proposes that each operator organize at least two auctions for each standard product marketed.

4.2.3.3 CRE preliminary analysis

In the previous public consultation, a majority of parties indicated that they would like capacity sales to be in the order of 10 TWh per day. To limit the daily quantity offered to the market, CRE envisaged, at this stage, that the products of significant size are offered in several lots.

The following rules are considered:

- Products with associated volumes greater than 7 TWh must be offered at least in two lots to the market;
- Products with associated volumes greater than 14 TWh must be offered at least three lots to the market.

CRE considers that this rule is likely to spread the marketing of the various products over the whole auction period, and it will lead to limiting the risks for storage users in case of non-attribution during an auction. It also limits the risks of disrupting the functioning of the markets by generating gas purchases for significant amounts in parallel with the reservation of storage capacities. The storage operators plan to hold no more than two auctions per marketing day, which would lead to a proposed maximum capacity of 14 TWh per day.

Question 19 Are you in favour of the rule proposed by CRE concerning the constitutions of the lots to be marketed?

4.3 Products proposed for marketing

4.3.1 Standard products considered by the storage operators

4.3.1.1 Storengy proposal

Storengy hopes to have a lot of freedom in terms of marketed products, not being limited in the number of products on offer. Indeed, Storengy indicates working currently with market players to define the most suitable offer possible. At this stage, Storengy plans to market up to 12 different products. Of these 12 products, several have identical characteristics applied to different PITS.

Storengy hopes the storage operators can adjust their offer up to two weeks before the start of the auction. Once the details of the offer have been published, in order to give visibility to the market, Storengy wants the offer to remain without change, including in the event of unsold: the products offered and their characteristics and associated volumes are set for the entire auction period.

4.3.1.2 TIGF proposal

TIGF plans to offer up to 4 different standard products at auction, 3 three bundled products (volume and injection and withdrawal rates) and 1 product corresponding to a volume offer only.

TIGF indicates not knowing today the exact quantities that it will be able to market and is thus not able to indicate the volume associated with each of the products which it expects to propose.

Furthermore, TIGF wishes that in case of unsold products, it has the possibility to postpone the unsold quantity on another auction of the same product or on a bid of a different product. Such transfer would be notified to the market no later than 24 hours before the start of the auction concerned by the transfer.

4.3.1.3 CRE preliminary analysis

At this stage, CRE wishes to leave a great deal of freedom to the storage operators on commercialized products. Indeed, the operators are most likely to discuss with their customers in order to propose a commercial offer adapted to market expectations. However, in the previous public consultation organized by CRE on the terms and conditions of the auction, the vast majority of stakeholders wanted CRE to set a maximum number of products that could be marketed. The responses were mainly in favour of limiting the offer of TIGF to 3 products and that of Storengy to 6 products.

In order to simplify the auctioning procedures, CRE wants the supply of storage to be closer to the offers of previous years. Indeed, given that the time for becoming acquainted with the products marketed will be short, an offer close to past offers would allow market players to bid on known products. In the previous year, TIGF has offered up to 5 main products. For the year 2017-2018, Storengy has marketed 14 products. Thus, CRE plans to limit TIGF to the marketing of 5 standard products, and Storengy to the marketing of 14 standard products.

CRE requested TIGF and Storengy to work closely with their potential customers to define the most suitable possible offer.

CRE is not opposed to capacity transfers from one auction to another or from one product to another, as envisaged by TIGF, provided that the terms of such transfers are clarified by the relevant operator before the auction phase.

Question 20 Are you in favour with the proposal of CRE with regards to the maximum number of products proposed for each operator?

Question 21 Are you in favour of transferring an unallocated capacity from one auction to another auction of the same product or the marketable capacity of another product as proposed by TIGF?

4.3.2 Specific products and application case

4.3.2.1 Storengy proposal

If, once the full capacity has been proposed to the market, unsold products remain, Storengy proposes to be able to commercialize the available capacities by having the possibility of adapting the residual offer, with the same reserve price terms as for the initial campaign.

Furthermore, after the initial auction, Storengy plans to market, marginally, short-term products for the 2018-2019 gas year, as long as these meet the complementary needs of the market.

4.3.2.2 TIGF proposal

TIGF proposes that, on March 31, 2018, if the public authorities find that subscriptions corresponding to the minimum thresholds required for the security of supply were not reached, then the initial marketing phase is extended from week to week until these thresholds are reached, or until the safety net is triggered.

If, on March 31 of 2018, the minimum thresholds are reached, then TIGF wishes to be able to market the unsold goods in a free way.

4.3.2.3 CRE preliminary analysis

At this stage, CRE is in favour of all capacities being offered during the initial marketing phase and that no other product than standard products can be marketed before the end of the initial marketing phase. This gives visibility to market players throughout the initial marketing phase.

Once the initial marketing phase has ended, two scenarios may arise:

- if the minimum thresholds necessary for the security of supply is not reached, then CRE hopes the commercialization of the capacities in the form of standard products to continue, until these thresholds are reached;
- if the minimum thresholds are reached, CRE is in favour, at this stage, that operators offer products other than standard products, according to the modalities they wish.

In the event that other products than standard products are marketed, CRE wants traders to market these products transparently, by publishing a week before each sale the precise characteristics of the products offered as well as the volumes of capacity associated.

Question 22 Are you in favour that no product other than standard products can be marketed until the end of the initial marketing phase?

Question 23 Once the initial marketing phase has ended, are you in favour with the modalities proposed by CRE?

4.3.3 Marketing on the Following Years

4.3.3.1 Storengy proposal

Storengy proposes that the marketing of products can also cover the storage years 2019-2020 and 2020-2021. It wants the bidders to be able to subscribe to these products for one or other of these years independently.

Storengy proposes that these auctions be organized according to modalities validated by CRE after proposal of the storage operators, and that they be organized as of May 2018 and then regularly following the storage year 2018-2019. Storengy is in favour that the total quantity proposed for the years 2019-2020 and 2020-2021 should reach 50% of the total annual capacity of the storage operators.

4.3.3.2 TIGF proposal

TIGF considers that the very constrained calendar and the imperative simplification of the commercial modalities applicable to this first marketing in regulated mode justifies waiting for the marketing of the year of storage 2019-2020 to propose the sale of the multiyear capacities or on the storage years N + 2 and following.

4.3.3.3 CRE preliminary analysis

CRE is aware that the market wants visibility on storage costs for the upcoming years. However, the auction schedule for the first year being very constrained, it considers, at this stage, that the capacities for the following years should not be proposed as early as May 2018.

CRE would like the brainstorming on the marketing methods for storage capacities for the next commercialization campaign to start very early, in order to finalize the rules no later than September or October 2018, so that the following marketing phase can start during the month of November, 2018. Products over several years could possibly be marketed there.

Thus, CRE considers counterproductive to organize a new auction phase as early as May 2018, as proposed by Storengy, at the same time as the experience feedback on the first auction, and proposes that the next auction phase should take place a few months later.

Question 24 Are you in favour of not marketing the capacity over several years before the summer of 2018 ?

4.4 Auctioning Mechanism

4.4.1 Type of auction chosen

4.4.1.1 Operators proposal

TIGF and Storengy propose a type of *fixing*¹⁰ auction, sharing the position expressed by CRE in its public consultation of June 9, 2016, especially in view of the particularly tight schedule for the marketing of products relating to the 2018-2019 storage year.

They propose an allocation at the end of an auction with an identical price for all buyers and equal to the lowest price among the selected prices in order to satisfy the maximum quantities requested (*pay as cleared*).

4.4.1.2 CRE preliminary analysis

CRE shares the position of the operators regarding the type of auction. Thus, CRE considers that, in order to ensure the good functioning of the auction in a constrained calendar, the auctioning mechanism must allow a simple and rapid allocation of the capacities. Therefore, it considers that the auctions for this year should be the *fixing* type.

A significant part of the actors who responded to the public consultation of June 9, 2016 expressed the wish for ascending auctions. CRE however, favours simplicity and speed for the first year, but plans to reconsider the question of the type of auction for the marketing of storage capacities for the following year.

With regards to the contract price, CRE is also favourable for it to be the same for all parties and set at a level that allows them to meet the maximum demand of participants (*pay as cleared*). This proposal met with a broad consensus during the public consultation of June 9, 2016 and responds well to the goal of maximizing the quantities sold.

Question 25 Are you in favour of a *fixing* type of auction for the marketing of the products for the storage year 2018-2019, with a possible future assessment of the type of auction for the following years?

Question 26 Are you in favour of a fixed contract price in *pay as cleared* ?

4.4.2 Detailed procedures of fixing

4.4.2.1 Operators proposal

Expression of the bid of each party:

For each product proposed to be sold at an auction, the bidder enters the points (Quantity in MWh; Price in €/MWh) that defines their requested quantity curve at purchase based on the purchase price. The number of points constituting this curve is not limited.

The price shall be equal or higher than the reserve bid price and possibly published before the start of the auction.

The bidder must ensure that for a given price, he only grabs one Quantity, and that that between 2 points the quantity requested at the lowest price is strictly higher than that requested at the highest price.

¹⁰ The *fixing* type of auction, corresponds to an auction where the parties transmit their demand curves / price to the operators for a given storage product during the same niche, without successive auction rounds.

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All of these points allow the storage operator to define a quantity curve requested at the purchase according to the purchase price as follows:

- the deemed quantity requested for the purchase is nil for a price strictly higher than the highest price awarded by the bidder;
- at the highest price bid by the bidder, the deemed quantity requested at the time of purchase is equal to the Quantity indicated by the bidder who, nevertheless, agrees to possibly allocate a partial quantity;
- between two successive points:
 - the deemed quantity requested by the bidder is equal to the Quantity indicated by the bidder for the highest price of the two, as long as the price is strictly higher than the lowest price of the two;
 - for the lowest price of the two successive points, the quantity deemed requested at the time of purchase is equal to the Quantity indicated by the bidder at the lowest price, but the buyer consents to possibly being allocated a partial quantity;
- the deemed quantity requested at the time of purchase for a price lower than or equal to the minimum price delivered by the bidder is equal to the Quantity indicated by the bidder for the lowest price delivered.

The storage operator then aggregates the requested quantity curves of all bidders into a single demand curve.

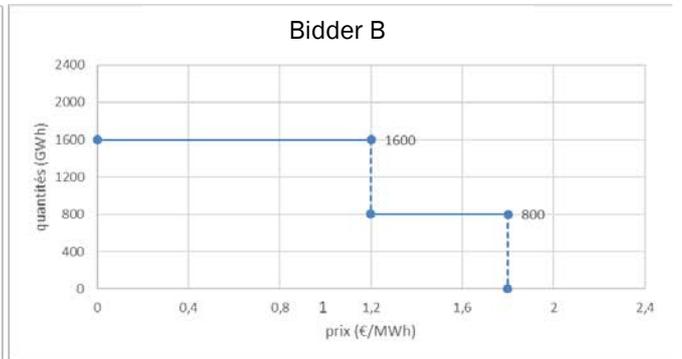
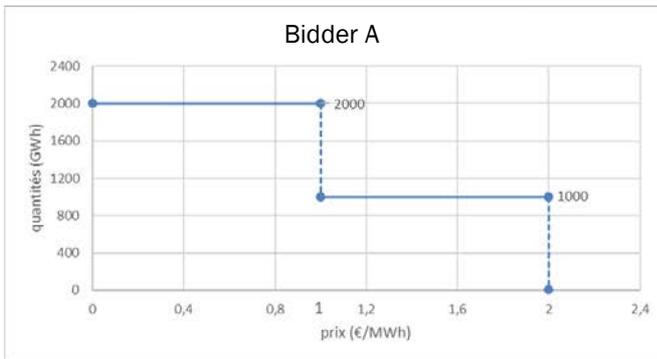
Fixation of the auction: contract price and capacities attribution

The contract price corresponds the highest price below which the demand is equal to or greater than the supply. The quantities are then allocated as follows: all requests at prices higher than the contract price are satisfied, then the requests to the contract price are partially provided by the remaining amount to be allocated on a prorated basis.

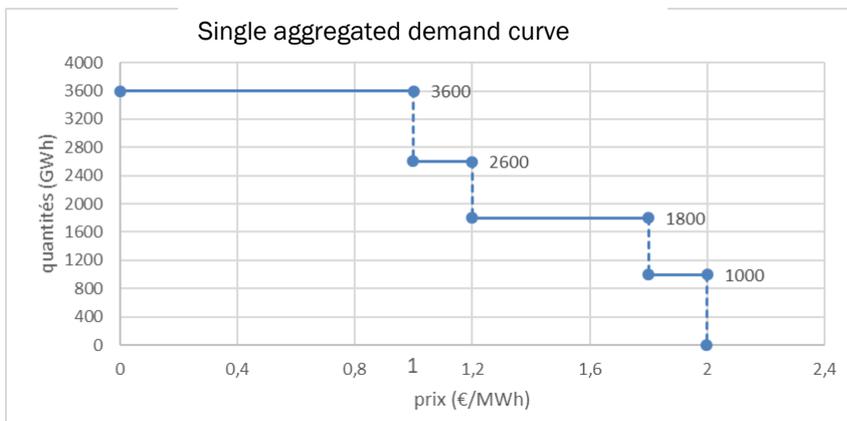
December 21, 2017

The fixation of the auction can be illustrated with the following example:

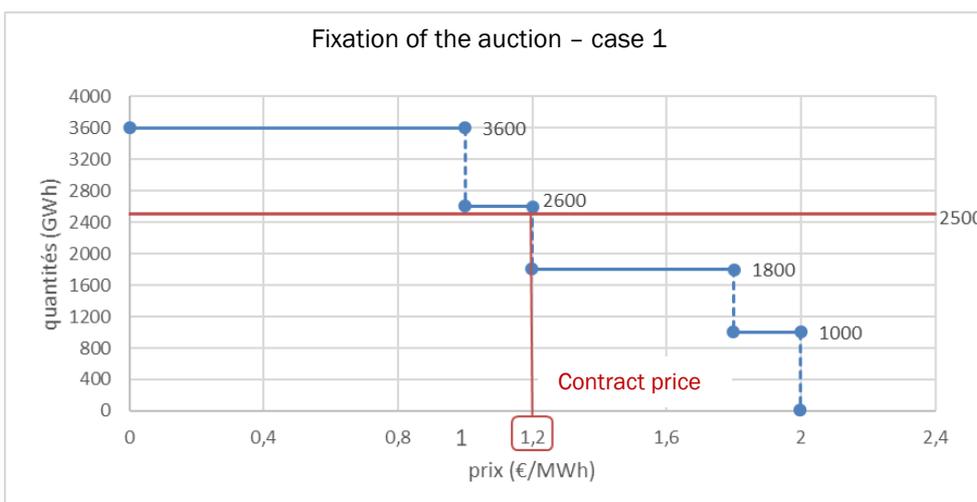
- the quantity of product offered by the storage operator is 2500 GWh; the reserve price is 0 €/MWh
- 2 bidders participate in the auction, A and B, representing the following requests:
 - bidder A = 2000 GWh from 0 to 1 €/MWh, 1000 GWh beyond 1 and up to 2 €/MWh;
 - bidder B = 1600 GWh from 0 to 1.2 €/MWh. 800 GWh beyond 1.2 and up to 1.8 €/MWh



- The demand curve aggregated is therefore the following:



The attribution of 2500 GWh offered is, therefore, at a contract price of 1.2 €/MWh for which the request is of 2600 GWh. The total demand at this price is with an excess of 100 GWh compared to the offer:



The allocation of the quantities is as follows:

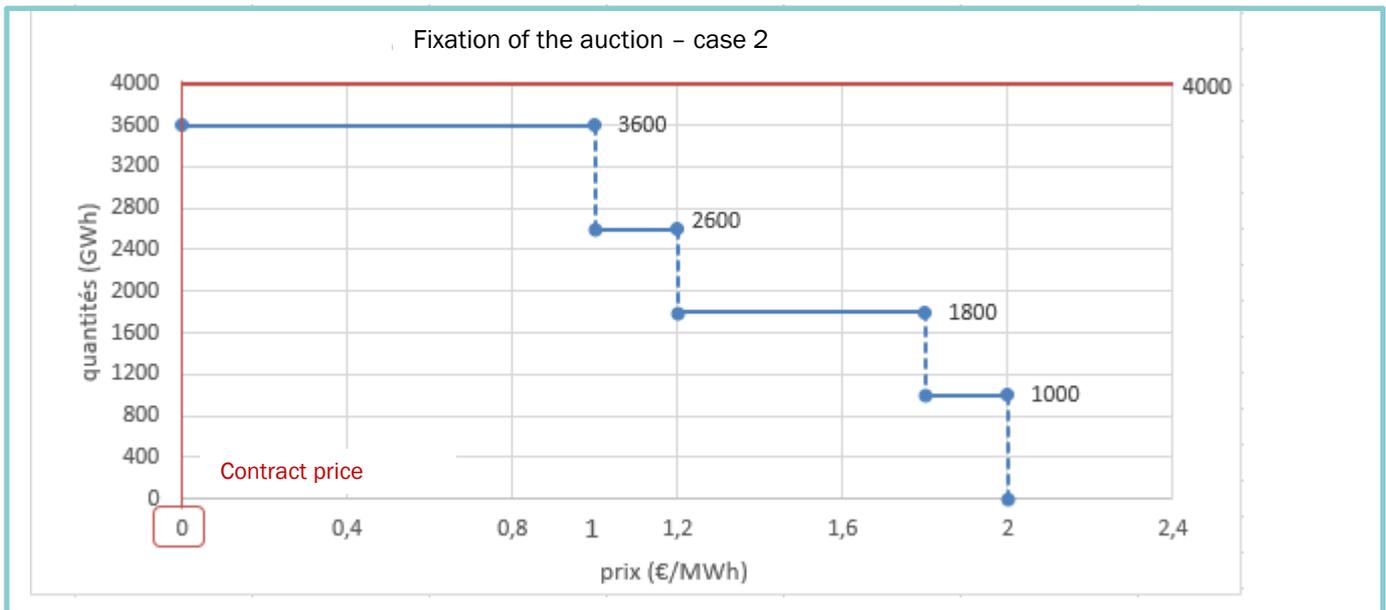
bidder A = demands a price higher than the contract price = 1,000 GWh

bidder B = demands a price higher than the contract price + share of demand at contract price = 800 + 700 = 1500 GWh

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In the event that the bidders' requests do not cover the offer, the contract price shall be equal to the reserve price. Each bidder is then allocated the maximum quantity requested.

Repeating the previous example with bidders requests unchanged, but with a quantity offered by the storer of 4000 GWh, the attribution shall be as follows:



With a contract price of 0 €/MWh corresponding to the reserve price, the totality of the requests expressed by the bidders is served (for bidder A = 2000 GWh, bidder B = 1600 GWh) and it remains 4000 - 3600 = 400 GWh of unsold product.

Attribution procedures are detailed within the operators' proposal, attached to the present document of public consultation.

4.4.2.2 CRE preliminary Analysis

CRE considers that the modalities proposed by the operators are appropriate. Indeed, these modalities allow for a capability allocation on a transparent and non-discriminatory basis, while avoiding having unsold when the demand is greater than the offer.

CRE is further satisfied that both operators offer identical terms, simplifying the payment process for all parties involved.

Question 27 Are you in favour with the method of expression of the request of each participant proposed by the operators?

Question 28 Are you in favour with the fixation method of the auction and with the attribution of the capacities proposed by the operators?

4.4.3 Auctioning platform

4.4.3.1 Storengy Proposal

Storengy wants to use its own selling platform for the marketing of the capacities, www.MyStorengy.fr, to which any potential buyer can register before a sale by creating its own secure space.

4.4.3.2 TIGF Proposal

TIGF wants to organize the auctions on its own dedicated platform. It provides that at the end of each auction, each party receives an email summarizing the capability of the product assigned to it and the price applicable to those capacities.

4.4.3.3 CRE Preliminary Analysis

For the sake of simplicity for auction participants, CRE considers it desirable that TIGF and Storengy use a common platform for marketing. However, given the time constraints of this first marketing phase, CRE does not consider it relevant to impose on the operators the platform to be used for the first year of sales.

In the long term, CRE requests that TIGF and Storengy work together to be able to organize the auction on a common platform.

Question 29 Are you in favour of the storage operators being free to market their storage capacities on a platform of their choice for the first year?

4.5 Reserve Price

4.5.1 Publicity

4.5.1.1 Operators proposal

Operators have noted that the publication of the numerical value of the reserve price was favoured by the market as an important parameter for the transparency of the auction.

TIGF would like CRE to set the reserve price on the proposal of the storage operators and to publish at least the calculation methodology, no later than one week before the start of the initial marketing phase.

Storengy is not opposed to the publication of the numerical value of the reserve price, even if it considers that the confidentiality of this value makes it possible to reveal the « true value » of the storage and is more likely to favour the competition on products.

4.5.1.2 CRE preliminary analysis

The vast majority of actors voted in favour of a public reserve price during the public consultation on June 9, 2016.

In the context where the priority objective is to maximize the capacities sold, CRE considers that a reserve price which is not public would constitute a barrier to participation in the auction because the participants could not know whether their tenders are admissible. The publication of the reserve price makes it possible to give a transparent framework to the auction and encourages the participation of the actors.

In the event that the reserve price is determined by a formula, CRE envisages to define it publicly in its decision. For each auction, the reserve price resulting from the application of the formula should be published by the operator organizing the auction beyond and upstream, as soon as all the parameters allowing the calculation are available.

Question 30 Are you in favour with the publishing of the reserve price prior to each auction?

4.5.2 Formula

4.5.2.1 Storengy proposal

Storengy is opposed to the auction being able to lead to negative prices, as this would lead to the unprecedented situation of a service provider who will have to pay his client for the service rendered to the latter.

Furthermore, Storengy believes that a low reserve price is preferable, as likely to mobilize the market and encourage them to participate massively in the sale, increasing the global demand at the auction and the probability of its success both in quantity sold and in price at the end of the sale.

Storengy exchanged with its customers to come up with the following proposal for a formula for the reserve price PR:

$$PR = \text{Max}(0 ; \alpha \times \text{spread} - \beta)$$

With:

- α reflecting the performance of the product: it is a quantity that decreases with the effective duration necessary to extract 100 % of the volume, defined by:

$$\alpha = a + \frac{b}{\text{effective duration of the product in storage (in days)}} \quad \text{with } a = 0.75 \text{ and } b = 25$$

- *spread* is the average over the last 5 business days of the gas price differential between the summer and the following winter on the market place PEG North as made public by Powernext:

$$\text{spread} = \sum_{k=-1}^{-5} \frac{(\text{WIN}(k) - \text{SUM}(k))}{5} - c \quad \text{with } c \text{ accounting for the bid / ask gap at PEG}_{\text{North}} \text{ is } 0.30 \text{ €/MWh}$$

- β is a quantity reflecting the costs associated with the use of the product (transmission costs, financial costs linked to the immobilization of gas in stock, injection and racking costs) as well as the possible brick of risk related to the localization of the product (lowering the reserve price applicable to storages in the South of France) and two constants reflecting, for the first, the necessary margin of the bidder and, for the second, the slight discount that must have the reserve price compared to the market value to allow a depth of sale:

$$\beta = \text{PITS} + \text{BFR} + \text{Variable} + \text{Localisation} + \text{Marge} + \text{Décote}$$

With:

- PITS = PITS transmission costs
- BFR = 0.20 €/MWh
 - Variable = sum of the injection and withdrawing prices as they will be defined by the storage operator for the storage year 2018-19 (corresponding to 0.35+0.12 is 0.47 €/MWh for Storengy for the storage year 2017-18)
 - Localisation = 0.2 €/MWh for the products of PITS North Atlantic, and 0.5 €/MWh for such in zone B and those in the South zone
- Margin = 0.05 €/MWh
- Next to = 4 x Margin = 0.20 €/MWh

If the spread is higher than 5 €/MWh, Storengy considers that the numerical values of the parameters might require an adjustment.

Storengy considers that the advantage of such a formula is to integrate the various features that make it easier to access storage capacities and to guarantee a free play of competition between the operators, whatever the market situation. However, it requires the use of published numerical data after the end of the trading day preceding the auction, which leads to a calculation and a possible publication of the numerical value of the reserve price relatively late the day before the auction.

Finally, given the current market conditions, the reserve price obtained with this formula would be very low, including the best performing products. If the market conditions have not changed before the marketing campaign, Storengy is not opposed to the fact that the reserve price of all the products proposed in 2018 is equal to zero in order to simplify the process.

4.5.2.2 TIGF proposal

TIGF does not want the reserve price to be negative, considering the essential role of underground storage facilities in ensuring the supply for the end consumer of gas.

TIGF wishes furthermore that the impact of the creation of the TRF in the middle of the storage year should be taken into account in the calculation of the reserve price.

Within this context, TIGF proposes that the loss of value of the South storage, linked to the creation of the TRF on November 1st, 2018, and estimated in 1 €/MWh be taken into account by setting two different reserve prices:

- one reserve price applicable to all the standard products to be marketed in the South storage, such as $Pr_{\text{South}} = \text{Max}(0; \text{spread} - \text{costs})$;

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- one reserve price applicable to all the standard products to be marketed in the North storage, such as $Pr_{North} = \text{Max}(0; \text{spread} - \text{costs} + \text{TRF})$;

with:

- spread: average over the last 5 business days preceding closing price differential auction PEGAS PEG NORD between Season+2 and Season+1 (respectively, Season+1 et Quarter+1) for auctions held before (respectively) March 30;
- costs: positive constant reflecting the logistical and financial costs borne by the buyer (PITS, cycling, gas immobilization);
- TRF: positive constant reflecting the minimum value loss for southern storage linked to the creation of the TRF in the middle of the storage year 2018-2019.

TIGF recommends not to include in the reserve price determination methodology a variable that depends on the performance of storage products. TIGF considers that such a variable would probably be poorly chosen and would complicate the auction. TIGF also considers that the performance of the products should be reflected in the auction results.

Given the current market price differentials and in order to simplify as much as possible the marketing modalities for 2018. TIGF suggests that CRE fixates the reserve price in order to be applicable to standard products as follows:

- $Pr_{South2018} = 0.01 \text{ €/MWh}$ for all standard products in the South storage;
- $Pr_{North2018} = 1.01 \text{ €/MWh}$ for all standard products in the North storage.

4.5.2.3 CRE preliminary analysis

TIGF and Storengy both agree that the storages cannot be sold at negative prices. CRE shares their analysis. CRE envisages, at this stage, that all the prices submitted, in the context of the auctions at *fixing*, are positive or null.

Both operators propose their formulas in order to calculate the reserve price for each product. However, TIGF proposes to retain a single reserve price at 0.01 €/MWh for all the storage located on the South, so for all its products, and Storengy indicates that it is not opposed to all the reserve prices being void.

CRE considers that with the current market conditions, any formula allowing to calculate the reserve price of each storage will lead to a nil price or one very close to 0. Thus, CRE questions, at this stage, on the interest of setting a strictly positive reserve price for this first year of marketing under a regulated regime. Furthermore, it considers that not applying a formula-based reserve price would make the supply of stock-keepers more readable and more attractive to all market players. Such a solution would prevent the storage operators from calculating and publishing, for each auction day, the reserve price applicable to the following day.

At this stage, CRE is in favour of a null reserve price for all storage products.

Question 31 Are you in favour with the proposal of CRE to apply a nul reserve price for all storage products?

If a formula must be used, CRE is favourable for it to reflect the value of the storage market, while lowering the costs associated with the storage. Thus, it should take into account the difference in gas prices between the summer in which the injection takes place and the winter during which the withdrawal takes place, and of the costs incurred by storage users. CRE considers that the main costs borne by the users of the storage facilities are the costs at the PITS and the costs of immobilization of the gas.

The formulas proposed by Storengy and TIGF both take these elements into account.

CRE questions on the relevance of integrating the performance of storages into the possible formula for calculating the reserve prices. Indeed, CRE considers it difficult to size the reserve price increase for the most competitive products. Auctions should be sufficient to differentiate the product prices according to their performance.

The existence of two market places at the time of injection into the storage facilities is likely to make the storage facilities of the TRS. In order to take this effect into account:

- Storengy proposes to lower the reserve price applicable to the storage of the South of France;
- TIGF proposes to increase the reserve price applicable to the storage of the North of France.

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TIGF proposal presents the risk of setting reserve prices at values higher than the market values for storage facilities in the north of France. These storage facilities would then be exposed to a high risk of not being subscribed. CRE is therefore unfavourable to this solution. On the contrary, the proposal from Storengy allows to make more attractive the storages of the south of France without affecting the storages of the north of France. CRE considers it favourable. The question of the right dimensioning of the reduction applied to the storage of the south of France would remain, however, if this solution was retained.

CRE notes that the formula proposed by Storengy is in line with CRE's analysis of the majority of these elements. Thus, if a reserve price is to be applied, CRE considers, at this stage, that the formula proposed by Storengy is the most relevant. However, it wonders about the relevance of taking into account the performance of storage facilities, as well as on the dimensioning of the different constants.

Question 32 If a positive reserve prices are applied, would you like them to consider product performance?

Question 33 If a positive reserve price is applied, would you be in favour of Storengy's proposal to take into account the less attractive storage facilities in the South for the year 2018-2019 by lowering the reserve price of these storages? Or would you be in favour of the TIGF proposal?

Question 34 If we were to apply a reserve price different to zero, do you consider that the constants in the formula proposed by Storengy are well dimensioned?

4.6 Particular case of sédiane B storage

4.6.1 Storengy proposal

Storengy operates the storage site of Gournay-sur-Arondes, connected to the gas B network located in the north of France. The service providers of the H gas to B gas conversion service must be able to access the storage capacities of gas B when they deem it necessary in order to carry out their mission.

Assuming that the providers do not reserve all of this storage, Storengy would like that all the actors who wish to access it, to be able to do it at a market price.

Thus, Storengy proposes the following marketing methods:

1. before the start of the auction, H gas-to-gas service providers communicate to Storengy and CRE, the capacities necessary for the exercise of their missions. They agree to submit bids at least equal to their needs at the auction organized on this storage;
2. Storengy organizes a capacity auction on B gas storage using the same methodology as for other storage facilities;
3. Calculation of an auction price and provisional allocation of participants according to auction results (which would disregard the above-mentioned access priority to define a selling price which takes into account all the offers submitted by the market);
4. At the end of this provisional allocation, two situations may arise:
 - a. if the providers for the H gas to B gas conversion service are pre-allocated for capacity at least covering their needs, pre-allocation is for final allowance;

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- b. on the contrary, H gas-to-gas providers will be allocated up to their needs, the price resulting from the auction, by first allocating the capacity to bidders who are not service providers for the H to B gas service who have submitted the highest bids.

4.6.2 CRE preliminary analysis

At this stage, CRE considers that the Storengy proposal allows, on one hand, to ensure H to B gas service providers the access to the storage capacities that they require, and on the other hand, allows all the parties involved to access the storage facility, if they wish, and at market price.

CRE is, therefore, in favour.

Question 35 Are you in favour of the proposal by Storengy concerning the marketing methods for gas B storage?

4.7 Services proposed by the storage operators

TIGF and Storengy propose several additional services. These services are detailed in the operator's website.

Storengy does not envisage major changes to its services. However, it anticipates some adjustments in their implementations and / or in their pricing.

TIGF wishes to renew the additional services proposed during the current storage year, with a slight adjustment, taking into account his new commercial offer, contractual provisions and the new regulatory framework in force.

CRE does not oppose these services to be renewed in a manner similar to the current arrangements.

4.8 Feedback and subsequent marketing

In order to provide feedback on this first marketing phase of storage capacities in a regulated environment, CRE proposes that all stakeholders be able to meet regularly in a concertation. For such, CRE proposes the creation of a « Storage concertation », which would be led by Storengy and TIGF, and which would be organized according to principles similar to those of the Gas and the LNG Concertation:

- a steering committee ensures the proper leading and defines the work program. It must allow the good representation of the different stakeholders. Its presidency shall be entrusted to the storage operators;
- working groups, designed by the steering committee of the whole and animated by the storage operators, deal with the different themes identified by the steering committee and report back to them;
- the storage operators submit to CRE, the proposals issued by the working groups, on which CRE shall deliberate within its competence;
- CRE participates in the steering committee and in the working groups. It shall ensure the good representation of the market parties, the coherence of the work program and further work, for the entire French gas system and the progress of the various projects, in accordance with the working program.

CRE proposes that the first meeting of the steering committee be held in April 2018, so that the working group operation can begin in April or May 2018. It expects the feedback from the marketing of the capacities for the year 2018-2019, to be completed, and that after this feedback, the works of the Storage Concertation concern the marketing methods of storage capacities for the following years.

CRE wishes that the storage operators submit, as of June 2018, a proposal for the marketing rules applicable for the following year. This shall allow CRE consult the market in the summer of 2018 and deliberate in September or October 2018.

Thus, auctions could start earlier for the following years, which would give a greater margin of manoeuvre on the next marketing phases.

Question 36 Are you in favour of creation of the « Storage Concertation », with a similar format of that

of the Gas and LNG Concertation?

Question 37 Are you in favour of the proposed timetable for work on the commercialization of storage capacities for the following years?

5. SUMMARY OF ISSUES

- Question 1** Are you in favour of the general principles relating to the determination of the authorized income of the storage operators?
- Question 2** Are you in favour of the introduction of a CRCP in order to regularize the differences between the actual charges and revenue generated, and the forecasted expenses and revenue for operators?
- Question 3** Are you in favour of an initial short regulation period of two years?
- Question 4** Are you in favour, for the first tariff period, of a rate-based tariff framework « 100% to CRCP » and an annual clearance of this CRCP within the framework of +/- 5% of the estimated allowed revenue?
- Question 5** Are you in favour of the introduction of an incentive regulation on marketing? If yes, what form would you like it to take?
- Question 6** Do you have any remarks concerning the calculation methods of the RAB and the levels envisaged by CRE?
- Question 7** Do you have alternative methods for calculating the RAB to propose?
- Question 8** Do you have any remarks concerning the ranges of the rate of return on assets envisaged by CRE?
- Question 9** Do you have any comments on the capital cost ranges envisaged by CRE?
- Question 10** Do you have any comments on the net operating expense ranges envisaged by CRE?
- Question 11** Do you have any remarks concerning the authorized revenue ranges envisaged by CRE?
- Question 12** Are you in favour of the base contemplated by CRE?
- Question 13** Among the proposed methods, which one seems most relevant for defining the compensation base?
- Question 14** Do you have any additional remarks on the methods envisaged?
- Question 15** Are you in favour of GRTgaz proposition, wherein each of two TSO pay compensation to three storage operators?
- Question 16** Are you in favour of the general principles envisaged by CRE for the marketing of the storage capacities for the first year?
- Question 17** Are you in favour of an initial marketing phase of 4 or 5 weeks to allow the marketing of 100% of the available capacities before March 31 of 2018?
- Question 18** Which weekly calendar seems preferable to you?
- Question 19** Are you in favour of the rule proposed by CRE concerning the constitutions of the lots to be marketed?
- Question 20** Are you in favour with the proposal of CRE with regards to the maximum number of products proposed for each operator?
- Question 21** Are you in favour of transferring an unallocated capacity from one auction to another auction of the same product or the marketable capacity of another product as proposed by TIGF?
- Question 22** Are you in favour that no product other than standard products can be marketed until the end of the initial marketing phase?
- Question 23** Once the initial marketing phase has ended, are you in favour with the modalities

proposed by CRE?

Question 24 Are you in favour of not marketing the capacity over several years before the summer of 2018?

Question 25 Are you in favour of a *fixing* type of auction for the marketing of the products for the storage year 2018-2019, with a possible future assessment of the type of auction for the following years?

Question 26 Are you in favour of a fixed contract price in *pay as cleared*?

Question 27 Are you in favour with the method of expression of the request of each participant proposed by the operators?

Question 28 Are you in favour with the fixation method of the auction and with the attribution of the capacities proposed by the operators?

Question 29 Are you in favour of the storage operators being free to market their storage capacities on a platform of their choice for the first year?

Question 30 Are you in favour with the publishing of the reserve price prior to each auction?

Question 31 Are you in favour with the proposal of CRE to apply a nil reserve price for all storage products?

Question 32 If a nil reserve price is applied, would you like them to consider product performance?

Question 33 If a nil reserve price is not applied, would you be in favour of Storengy's proposal to take into account the less attractive storage facilities in the South for the year 2018-2019 by lowering the reserve price of these storages? Or would you be in favour of the TIGF proposal?

Question 34 If we were to apply a reserve price different to zero, do you consider that the constants in the formula proposed by Storengy are well dimensioned?

Question 35 Are you in favour of the proposal by Storengy concerning the marketing methods for gas B storage?

Question 36 Are you in favour of the creation of the « Storage Concertation », with a similar format of that of the Gas and LNG Concertation?

Question 37 Are you in favour of the proposed timetable for work on the commercialization of storage capacities for the following years?

6. PROCEDURES FOR RESPONDING TO PUBLIC CONSULTATION

CRE invites the parties interested to send their contribution, until January 23, 2018:

- By e-mail to the following address: dr.cp1@cre.fr;
- by contributing directly to the CRE's website of CRE (www.cre.fr), under the category « Documents / Public Consultations »;
- by postal mail to: 15. rue Pasquier - F-75379 Paris Cedex 08;
- by contacting the Network Directorate: + 33.1.44.50.41.43;
- scheduling a hearing with the Commission.

All contributions will be published by CRE; please indicate the items you wish to maintain confidentiality. The interested parties are invited to respond to the questions arguing their answers.

Appendix:

- Technical note from Storengy dated on December 7, 2017 concerning the marketing methods

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- Technical note from TIGF dated on December 4, 2017 concerning the marketing methods
- Common technical note from GRTgaz and TIGF dated on December 6, 2017, concerning the methods for compensation collection
- Technical note from TIGF dated on December 11, 2017 concerning the terms of reversal of the compensation by the GRT of the storage operators
- Technical note from GRTgaz dated on December 15, 2017 concerning the terms of reversal of the compensation by the GRT of the storage operators