

Decision of the French Energy Regulatory Commission of 2 June 2016 concerning guidance on methods for the procurement of Frequency Containment Reserve for ancillary services

Present: Philippe de LADOUCETTE, President, Catherine EDWIGE, H el ene GASSIN, Yann PADOVA and Jean-Pierre SOTURA, commissioners.

1. Background

1.1. Regulatory framework and current market design to procure ancillary services

Paragraph 3 of Article L. 321-11 of the Energy Code provides: *"The Transmission System Operator also ensures the availability and implementation of the services needed to operate the network. Every producer, whose facilities have the constructive capacity to set the frequency or voltage, provides, pursuant to Article L. 342-5, this capacity to the Transmission System Operator according to the terms and conditions of participation and settlement based on objective non-discriminatory criteria, which are developed and published by the Transmission System Operator. These terms and conditions are approved by the Energy Regulatory Commission prior to their implementation. The Transmission System Operator concludes the contracts necessary for the implementation of this mission".*

The ACER Framework Guidelines on electricity balancing¹, and the draft network code on electricity balancing developed by ENTSO-E², as well as the recommendation to adopt this code published by ACER³ provide for the definition of the common principles for stakeholders to participate in the balancing markets : these are non-discriminatory, transparent, cost-effective principles and based on market regulations. Furthermore, the Directive on energy efficiency⁴ provides that Member States should not prevent the participation of demand response to provide ancillary services.

The "ancillary services rules" in force⁵ specify the current modalities of participation in frequency ancillary services, which are based on a prescriptive obligation settled at a regulated price. RTE assigns on a day ahead basis its reserve requirements in proportion to the schedules. Each scheduling agent distributes the prescription between its qualified generation units. Scheduling agents also have the opportunity to contract over-the-counter exchanges, allowing all qualified capacities (including market participants who are not subject to the prescription) to participate in the mechanism. The load units connected to the public transport network and the public distribution network have been allowed to provide such frequency ancillary services,

¹ Guidelines FG-2012-E-009 of 18 September 2012 the Agency for the Cooperation of European Regulators (ACER): http://www.acer.europa.eu/Electricity/FG_and_network_codes/

² Network Code on balancing published on 16 September 2014 by ENTSO-E:

<https://www.entsoe.eu/major-projects/network-code-development/electricity-balancing/Pages/default.aspx>

³ Recommendation of 20 July 2015 by ACER:

http://www.acer.europa.eu/Official_documents/Acts_of_the_Agency/Recommendations/ACER%20Recommendation%20003-2015.pdf

⁴ Directive 2012/27 / EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency.

⁵ Ancillary services rules in force since 1 January 2016:

http://clients.rte-france.com/lang/fr/clients_producteurs/services_clients/regle_ssy_pop.jsp

respectively, since July 2014 and January 2016. The settlement of the prescription is approximately €18.20 MW/h (amount specified in the ancillary services rules).

By decision of 28 November 2013¹, CRE approved the terms and conditions of participation in the ancillary services and settlement submitted on 28 October 2013 by RTE. This decision established a roadmap on further developments of these terms and conditions by the development of successive versions of the ancillary services rules.

The first step of this roadmap led CRE to approve by decisions of 12 June 2014² and 3 December 2015³, changes to the ancillary services rules, which had been submitted by RTE.

In its decision of 28 November 2013 cited above, CRE asked RTE to submit by October 2014 a progress review for the work to define the implementation of a secondary organised or facilitated market for frequency ancillary services.

1.2. Analysis conducted by RTE to change the terms of the Frequency Containment Reserve to tenders

On 5 June 2015, RTE addressed CRE its analysis on the market design for the procurement of Frequency Containment Reserve, automatic Frequency Restoration Reserve and the related consultation report.

RTE considers it preferable not to implement an organised secondary market for the frequency ancillary services that lacks liquidity and would not allow, in the short or medium term, coordinated operations with neighbouring countries. RTE has proposed to study, in consultation with the stakeholders in the second half of 2015, a procurement scheme of Frequency Containment Reserve through tenders at the national and cross-border level in cooperation with neighbouring Transmission System Operator (TSO). RTE is committed to deliver to CRE a report on this matter early in 2016.

RTE has initiated discussions with its counterparts in Germany, Austria, Switzerland and the Netherlands, which jointly procure Frequency Containment Reserve by weekly tenders as described in section 2.1 (a) "Description of the FCR cooperation tenders".

RTE also conducted, as part of the access commission to the market committee of users of the electricity transmission network (CURTE), a consultation and a call for contributions, held from 27 November to 18 December 2015, allowing the market participants to provide their comments on RTE's analysis on the procurement of Frequency Containment Reserve through tenders.

Following this work, RTE submitted to the CRE by letter of 23 February 2016 its report on the establishment of the Frequency Containment Reserve by cross-border tendering.

On 7 March 2016, CRE and RTE services met representatives from the German, Austrian, Swiss and Dutch TSOs and National Regulatory Authorities (NRAs) to define the steps for a possible extension to the French market of their Frequency Containment Reserve cross-border tendering cooperation.

On 26 May 2016, CRE auditioned RTE and organised a roundtable with stakeholders who participated in the consultation conducted by RTE.

¹ Decision of the Energy Regulatory Commission of 28 November 2013 approving the Ancillary Services rules

² Decision of the Energy Regulatory Commission of 12 June 2014 approving the Ancillary Services rules

³ Decision of the Energy Regulatory Commission of 3 December 2015 approving the Ancillary Services rules

2. RTE's proposal for the procurement of Frequency Containment Reserve and CRE's analysis

2.1. RTE's proposal and French market participants' position

RTE offers to join the cooperation of the German, Austria, Switzerland and the Netherlands TSOs (hereinafter "FCR cooperation") to procure its Frequency Containment Reserve by cross-border tendering, subject to the resolution of three risks identified and agreement of the TSOs members of the FCR cooperation.

a) Description of the FCR cooperation tenders

Each week a tender is organised on Tuesday afternoon before the week of delivery (week from Monday 0 h to Sunday 24 h) allowing TSOs in the FCR cooperation to procure Frequency Containment Reserve for the week of delivery.

Balancing services providers submit their offers to their connecting TSO and TSOs pool these offers. The offers are selected by an algorithm to minimise the contracting costs, while respecting the import / export limits of the control area defined by ENTSO-E¹. For France, this constraint would result in an export limit of 170 MW and an import limit of about 400 MW. The total French Frequency Containment Reserve requirement is about 571 MW.

Each tender is based on a "weekly" baseload product (168 h from Monday 0 h to Sunday 24 h), and is symmetrical (can be activated upwards or downwards), and divisible by volume by 1 MW steps, with a minimum supply size of 1 MW and a resolution of 1 MW.

The selected offers are settled according to the pay-as-bid principle. The contracting costs are divided between TSOs so that the cost for each TSO is equal to its expressed need multiplied by the average contracting cost within the FCR cooperation.

The market rules of the TSOs members of the FCR cooperation, including on the certification criteria, the batteries participation criteria, settlement for the balancing energy from FCR, controls and penalties, responsibility for the failure and the exchange of reserves between players on a secondary market are not harmonised.

b) Analysis of the relevance of joining the FCR cooperation and the risks identified

RTE considers that the participation of France in the FCR cooperation would have the following benefits:

- The possibility for the French power system to import Frequency Containment Reserve rather than supply it when it is economically relevant;
- Access a broad market of Frequency Containment Reserve for French balancing services providers, that is to say, the ability to export if the French capacity is more competitive than those of other countries;
- Participate in a pilot project that would then cover almost half the synchronous continental zone, allowing all French market participants to intervene in its market design, which could eventually extend to much of the European synchronous area, in view of the implementation of a harmonised European market for balancing;
- Increase competition in the Frequency Containment Reserve market;
- Obtain a price signal reflecting market conditions.

¹ These limits are expressed in MW by country, and are not assigned to a border. They emerge from the constraints agreed between TSO and included in the European regulation "Load Frequency Control and Reserves" ("LFC & R" technical requirements for controlling the frequency and levels of reserves). This regulation, and all European texts relating to the operation of the electrical system, "System Operation Guidelines" were adopted by Member States on 4 May 2016.

RTE stressed, however, the existence of risks associated with the participation of France in the FCR cooperation:

- The absence of a supranational structure for dialogue, consultation and approval, according to the appropriate governance;
- Difficulties relating to the time of the call for tender (Tuesday of the week before delivery), the contractual period (weekly) and product type (based on 168 hours);
- Settlement rules amongst TSOs.

c) French market participants' position

During the various stages of the consultation, the majority of French market participants shared RTE's analysis on the benefits of procurement scheme Frequency Containment Reserve by calls for tender and support the French participation in the FCR cooperation. Among these stakeholders, eight were in favour of RTE joining the FCR cooperation in its current state from 1 January 2017. The market participants opposed to participation in the FCR cooperation are concerned by the difficulties inherent to the weekly contract agreement, discussed below (see section "2.2. CRE's analysis").

Some stakeholders stated their wish to see certain characteristics of the FCR cooperation evolve as a prerequisite for French participation (a stakeholder) or as a medium-term objective. However, market participants' positions on the desired changes and their priorities differ widely, especially regarding:

- The frequency of tenders (from annual to daily);
- The type of product (baseline, peak / off peak, hourly);
- Management failure (centralised or decentralised) and related penalties;
- Indivisible offers (prohibited or authorised);
- And more generally, harmonisation of market rules and the maintenance of certain national specificities.

2.2. CRE's analysis

(a) CRE's analysis on RTE's proposal including the risks identified

CRE shares RTE's analysis on the benefits for France to join the FCR cooperation. In particular, CRE considers that the procurement of Frequency Containment Reserve through tenders allows direct access to all stakeholders in this market. Given the concentration of the French generation market, it appears appropriate to organise such tenders on a supranational level. This cross-border tendering allows optimisation via the import / export of Frequency Containment Reserve in a context where optimisation of the frequency ancillary services has already been achieved in France.

Furthermore, CRE considers that in view of recent discussions with the European Commission, the coming European legislation (future Guidelines on Electricity Balancing, expected new proposals from the European Commission in December 2016 on the market design in Europe) should strengthen the obligations already provided in terms of integration of balancing markets, including the Frequency Containment Reserve. As such, CRE would like RTE to be involved as soon as possible in the choice of solutions that will be implemented to fulfil this market integration objective.

CRE considers that RTE's participation in the FCR cooperation would implement a market based mechanism to procure Frequency Containment Reserve, strengthening European cooperation. The European integration of electricity markets is essential to reduce procurement costs and facilitate the integration of renewable energy into the electrical system, while ensuring the security of supply. CRE has been actively committed to the implementation of the integration objectives set by the European texts in all time frames:

- By the forward capacity allocation according to harmonised rules;
- By coupling the daily markets: the Central West region of Europe that includes France has implemented day ahead market coupling from 2007 (since extended to all the French borders with the exception of Switzerland), and a flow-based capacity calculation since May 2015;

- By early implementation of the intra-day markets coupling with the German, Swiss and Belgian borders (from September 2016 for this latest border);
- By the implementation of balancing energy exchanges with the English TSO in 2010 and the Spanish TSO in 2014, and the involvement of German and Swiss balancing services providers in the French balancing mechanism.

CRE requires that the French power system continues to play a leading role in the integration of European markets in all timeframes; as such, participation of RTE in the FCR cooperation would enable France to join an initiative, in the heart of synchronous continental European, to exchange balancing reserves with other TSOs.

CRE has extensively studied the risks identified by RTE:

Regarding the lack of a structure of concerted action, consultation and approval at the supranational level

At the meeting of 7 March 2016 bringing together members of the FCR cooperation and their counterparts in countries planning to join this cooperation (Belgium, Denmark and France), TSOs and regulators agreed on the implementation of an *ad hoc* governance structure, which meets at least twice a year, to address the functioning and evolution of the FCR cooperation.

In this framework, TSOs have committed to hold a regional public consultation on changes to the design of tenders for Frequency Containment Reserve early 2017 (for implementation in 2018).

CRE considers that these steps will allow concerted action and adequate consultation of market stakeholders. Moreover, the future Guidelines on Electricity Balancing (GL EB) define the governance principles that will apply to this type of cooperation. CRE is in favour of early implementation of governance principles described in Articles 5, 6, 7 and 8 of the future GL EB as proposed by ACER in its recommendation of 20 July 2015¹.

Regarding the difficulties relating to the tender features (timing, delivery period and type of product)

During the consultation, most market participants declared to accept the implementation of weekly tenders, taking place on the Tuesday before the week of delivery. Other stakeholders requested a different tender's frequency and period, without any emerging consensus. One stakeholder favoured an annual or multi-year contractual period to have a long-term vision of its participation in tenders. Contrarily, some stakeholders do not have an accurate vision of the availability of their capacities or their opportunity costs one week before the delivery, and therefore desired that the tenders take place daily, or at the very least the Friday of the week before delivery. Finally, some market participants required the introduction of peak / off peak products, or even hourly products.

CRE considers that weekly tenders represent an acceptable solution insofar TSOs have committed to treat the subject of the frequency of tenders under the public regional consultation to be conducted in 2017. If RTE joins the FCR cooperation in January 2017, French market participants will be able to provide their views in this consultation and their contributions will have more weight.

Furthermore, CRE believes that the national secondary over-the-counter market that already exists will enable re-optimisation of the French frequency ancillary services at the intra-weekly level.

Regarding settlement rules among TSOs and TSO-BSP settlement

The settlement regulations rules among TSOs, currently applied in the FCR cooperation, provides for a distribution of costs between TSOs in proportion to the needs: costs for all capacities procured via the FCR cooperation are distributed in proportion to the needs of reserve of each TSO regardless of the volumes

¹ See note no. 3 page 1

exchanged on the borders. This rule allows transfer of funding of Frequency Containment Reserve from exporting TSO towards importing TSOs: with the current rule, exporting TSO, whose balancing service providers bids cost less than the average in the FCR cooperation, will be charged the average of the FCR cooperation; thus they will be charged more.

CRE therefore considers that this rule is economically inefficient for all TSOs: it generates unjustified subsidy funding from exporting TSO towards importing TSOs.

In the specific case of France, it is impossible to estimate quantitatively the direction and magnitude of financial transfers, which could affect RTE, since the offers submitted by the French balancing services providers for a weekly product, in volume and price, are modelled based on numerous assumptions. Simulations carried out by CRE show in the short term that RTE may be disadvantaged or favoured to join the FCR cooperation, compared to costs arising from a national call for tender, depending on the direction of exchanges with neighbouring TSOs.

CRE considers it desirable that this settlement rule is subject to revision and invites RTE to start negotiations with other TSOs of the FCR cooperation with a view to develop it for 1 January 2017.

Moreover, due to balancing service providers' settlement according to the pay-as-bid principle, the reduction of the social welfare for exporting TSO is not necessarily accompanied by an increase in the social welfare for the exporting balancing service providers. This TSO-BSP settlement rule therefore exacerbates inefficiencies in the settlement rules for TSOs in proportion to their needs.

CRE considers that the issue of balancing service providers' settlement, especially the change to a settlement at the marginal pricing, should be raised in the public regional consultation held by TSO in 2017. If settlement according to the pay-as-bid principle is acceptable at first, as the market does not meet the required characteristics of critical size, competition and liquidity,, settlement at a marginal price remains a long-term objective (as advocated by the future GL EB) because it will allow more efficient market functioning.

(b) Other items relating to participation in the FCR cooperation

Limitations of export and import exchanges

The "Load Frequency Control and Reserves" (LFC & R) guidelines¹ provide the aforementioned exchange limits for France up to approximately 170 MW for export and 400 MW for import, while the total French requirement for Frequency Containment Reserve is currently 571 MW.

To enable progressive technical deployment of the French participation in calls to tender of the FCR cooperation and especially to limit any financial transfers generated by TSOs settlement rules described above, applying stricter exchange limitations than those provided for in the LFC & R regulation could be proposed.

CRE is not opposed to this, but requires that such limitations, if implemented, meet the following conditions:

- An import limitation not less than 30% of the French requirement (i.e. 170 MW) so that the French participation in the FCR actually results in significant opportunities for import from neighbouring countries;
- A limitation that is transitional for a limited period of maximum 12 months.

¹ See note no. 2 page 3

3. Financing the Frequency Containment Reserve

In the public consultation on the structure of tariffs for use of public electricity grids that CRE conducted from 22 July to 25 September 2015, its preliminary analysis on the procurement of frequency ancillary services was presented.

Feedback from the stakeholders during this consultation and the progress made in view of the implementation of Frequency Containment Reserve tenders led CRE to address this topic again in a second public consultation on the structure of tariffs for use of public electricity grids conducted from 24 May to 24 June 2016.

Following this public consultation and work on developing the structure of tariffs for use of public electricity grids, CRE will decide on possible changes to the frequency ancillary services financing terms.

4. Automatic Frequency Restoration Reserve procurement

RTE's proposal to open access to interconnections for frequency ancillary services concerns Frequency Containment Reserve only. Indeed, the technical characteristics of Frequency Containment Reserve make cross-border exchanges possible without prior reservation of interconnection capacity.

The cross-zonal capacity reservation and harmonisation of energy activation principles are instead required for joint procurement of automatic Frequency Restoration Reserve between several TSOs. CRE notes that work is being carried out by ENTSO-E within the European consultation body of the Balancing Stakeholders Group in order to define the standardised energy product to exchanges automatic Frequency Restoration Reserve, a prerequisite to any joint procurement. However, the implementation of the principles for cross-zonal capacity reservation in order to exchange capacities of automatic Frequency Restoration Reserve has not been the subject of work to date.

To promote, in a longer-term objective, capacity exchanges of automatic Frequency Restoration Reserve, CRE requires that RTE submits by 1 April 2017 a report with concrete proposals on cross-zonal capacity reservation arrangements to conduct exchanges of automatic Frequency Restoration Reserves. In particular, the three methodologies of cross-zonal capacity reservations outlined in the future GL EB will be subject to a comparative analysis and RTE will make proposals to decline and apply concretely these methodologies along with a roadmap proposal for their implementation.

This report must accompany the report requested by the CRE in its decision of 3 December 2015 on changes needed to allow the separate procurement upward and downward of automatic Frequency Restoration Reserves, in accordance with future requirements of GL EB.

5. CRE's guidelines

5.1. Guidelines

CRE considers that the French power system must continue to play a leading role in the integration of European markets in all timeframes; as such, CRE is favourable to RTE joining the cooperation of German, Austrian, Swiss and Dutch TSOs ("FCR cooperation") for the procurement of Frequency Containment Reserve in January 2017.

CRE considers desirably that settlement rules amongst TSOs are subject to revision and invites RTE to start negotiations with other TSOs of the FCR cooperation with the aim to develop them before January 2017.

Furthermore, CRE is in favour of early implementation of governance principles described in Articles 5, 6, 7 and 8 of the future GL EB as proposed by ACER in its recommendation of 20 July 2015¹.

5.2. CRE's requests for future work and associated timelines

CRE requires that RTE submits before 15 September 2016 a proposal for the ancillary services rules with the aim to implement them on 1 January 2017.

Paris, 2 June 2016

On behalf of the French Energy Regulatory
Commission,
The President,

Philippe de LADOUCKETTE

¹ See note no. 3 page 1