

## Deliberation of the French Energy Regulation Commission dated 23 July 2013 regarding the review of the 10-year development programme for the RTE electricity transmission network that was submitted in 2013

Attendees: Philippe de Ladoucette, president, Olivier Challan Belval, Jean-Pierre Sotura and Michel Thiollière, commissioners

Pursuant to Article L. 321-6 of the French Energy Code, RTE, which manages the public electricity transmission network, has drawn up a 10-year programme for developing the network, which it submitted to the French Energy Regulation Commission (CRE) on 21 January 2013.

The CRE conducted a public consultation process between 10 April and 13 May 2013. The CRE is making a summary of this consultation process and its assessment of the 10-year network development programme available to the public through this deliberation.

### 1. Regulatory framework

#### 1.1. European framework

At the European level, EC Regulation 714/2009 introduced a coordinated network planning approach. The European Network of Transmission System Operators for Electricity (hereinafter ENTSO-E) must therefore draw up a non-binding 10-year network development plan for the entire European Union every two years, which includes European forecasts for the adequacy of generation capacity, following an open and transparent consultation process that involves all the relevant players in the market at an early stage. The aim of the 10-year plan is to enable forward-looking work and technical cooperation to take place between the European network managers. The Agency for the Cooperation of Energy Regulators (ACER) must issue an opinion on the plan and monitor its implementation, as well as its consistency with the various national plans.

ENTSO-E published its 10-year European network development plan (Ten-Year Network Development Plan, hereinafter TYNDP) in July 2012. ENTSO-E is currently drafting a new version of the TYNDP, which is expected in the second half of 2014.

#### 1.2. National framework

Article L. 321-6 of the French Energy Code provides that the transmission system operator must submit “a 10-year network development programme drawn up on the basis of existing supply and demand as well as on reasonable medium-term assumptions for changes in electricity generation, consumption, and electricity trades on cross-border networks” to the CRE every year. This programme must inform the market players about the main transmission infrastructures that must be built or upgraded over the next 10 years, list the investments that have already been decided, identify new investments to be made over the next three years, and provide a forecast timetable for all the investment projects.

The French Energy Code also provides that the CRE “shall consult users of the public network, according to conditions that it shall determine, [and] shall check that the 10-year programme covers all the investment requirements”.

Lastly, the French Energy Code provides that the CRE shall check whether the 10-year programme “is consistent with the non-binding European plan drawn up by the European Network of Transmission System Operators established by EC Regulation 714/2009”.

## 2. Contents of the 10-year programme

In accordance with Article L. 321-6, the 10-year programme is divided into two main sections, a 10-year plan and a 3-year plan.

In the case of the 10-year plan, as in the previous year, the main transmission infrastructures mentioned in Article L. 321-6 of the French Energy Code include the installations for the 400 kV network, and all the interconnection links with neighbouring countries, as well as the 225 kV installations that are likely to cause structural changes to the supply of a consumption area when commissioned. All the investments in this section amount to a total of some €10 billion over 10 years.

Two significant changes were made to the 2012 10-year programme compared with the previous version: a planning timeframe that extends to 2030 was introduced for trunk lines, and four contrasting supply and demand scenarios were factored in the long-term network review.

These changes are consistent with those planned for the next version of the TYNDP, which will also include an assessment of the transmission network’s development requirements for the period until 2030, while taking four supply and demand scenarios into account.

In the case of the three-year section, the projects represent a total amount of around €3 billion, and are set out in the same way as in the first version of the 10-year programme, i.e. depending on their primary end-purpose. The list is comprehensive where projects relating to market integration and electricity quality are concerned. Where projects relating to security of supply and the safety of the system are concerned, only the more significant projects are detailed, given the large number of projects involved. A threshold of €3 million has been selected for including these projects. In the case of connection projects, only projects that have been made public and that are expected to be commissioned within the next three years are included.

## 3. Summary of the public consultation process

In accordance with the provisions of Article L. 321-6 of the French Energy Code, the CRE conducted a public consultation process between 10 April and 13 May 2013, to which six players replied. The CRE summarises below the most significant comments made by the market players regarding the 10-year programme.

First, most of the market players saw progress in terms of RTE’s consultation process and efforts to answer their questions compared with the previous year.

One of the issues that still raises many questions is that of interconnection capacities:

- in fact, one market player said that he would like RTE to carry out a sensitivity analysis of the available interconnection capacities<sup>1</sup> to the supply and demand scenarios;

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<sup>1</sup> The available interconnection capacity corresponds to the maximum transmission capacity achievable, given the flows on the networks and the operating safety rules.

- another market player would also like RTE to include an assessment of interconnections requirements that depends not only on the supply and demand scenarios in France, but also on international supply and demand scenarios;
- another market player observed that the information provided regarding the interconnection projects featured in the 10-year programme was less substantial than in the TYNDP, and believed that an alignment was required.

Concerning the scope of the plan, one player would like the 10-year programme to be extended to the 63-90 kV network's long-term development requirements.

Lastly, one market player believed that the only scenario that should be taken into account was the "new mix" scenario, although he considered the assumptions underlying this scenario to be relatively unsatisfactory. In fact, this player believed that the development potential for renewable energy (except for marine energy) and the potential for reduction in electricity consumption were inadequate.

## 4. The CRE's assessment

The CRE sets out its full assessment below, while notably taking the market players' comments into account. The CRE believes that the programme drawn up by RTE complies with the market's requirements, and takes note of the improvements that have been made to this version.

However, the CRE notes that a number of points could be improved in the next version of the 10-year programme.

### **4.1. Monitoring the changes between successive versions**

In the case of the second edition of the 10-year programme, RTE has included a follow-up on any changes to the projects compared with the previous version in the document forwarded to the CRE.

The 10-year section of the 10-year programme includes seven new projects compared with the 2011 version, the most important of which are two new interconnections with Germany and Ireland, the "Grand Est" (Great Eastern Region) project, the restructuring of the Alsace network, and two network security projects in the Provence-Alpes-Côte d'Azur and Brittany regions. Furthermore, 15 projects included in the previous version of the 10-year programme have seen their commission date deferred. Lastly, three projects have been abandoned following a review of consumption and generation assumptions.

In the three-year section of the 10-year programme, 36 projects have been deferred compared with the previous version, and three have been abandoned. Two projects were abandoned after RTE customers withdrew their projects, while RTE adopted a different stance where the third project was concerned.

RTE provided the reasons for the delays and for abandoning the projects in the 2012 10-year programme. The CRE has assessed the reasons for the delays or for abandoning projects, and considers that the explanations provided by RTE are satisfactory.

### **4.2. Inclusion of the CRE's comments on the previous version**

In its Deliberation of 19 July 2012 regarding the review of the 10-year development programme for the RTE electricity transmission network, the CRE made several requests that were aimed at improving the document delivered by RTE.

The changes made to the 2012 version of the 10-year programme enabled most of the CRE's requests to be met.

Only one of the CRE's requests was not met in the 2012 version of the 10-year programme. This was the request to explain the procedures for including information about Regional Climate, Air and Energy Plans (hereinafter SRCAEs, and S3REnRs [Regional Renewable Energy Network Connection Plans]) in future

versions of the 10-year plan. RTE points out that as the SRCAEs are running behind schedule, they will be included in future versions of the 10-year programme as and when they are approved by Departmental Prefects.

Furthermore, the answers that RTE provided to two of the requests made by the CRE could still be improved.

Indeed, the CRE had asked RTE to explain the projects selection process, as well as the range of assumptions used for this purpose. RTE replied to this request by including a description of the consumption and generation scenarios in 2030, which were drawn from the "Bilan Prévisionnel 2012" (the 2012 forecasts for supply and demand in France), in the 10-year programme, together with a summary overview of the changes in electricity flows and of the needs of reinforcements of the transmission network at this time horizon. However, the format for setting out the network modelling work makes understanding the connection between the scenarios in 2030 and the project selection process hard to understand, as developed in more detail in paragraph 4.3.

The CRE had also asked RTE to present a level of information that was consistent with that of the TYNDP where projects relating to the development of interconnection capacities were concerned, and to specify the results of the economic studies, in particular. In answer to this request, RTE referred readers to the TYNDP in the 2012 10-year programme. It would be appropriate for RTE to include an appendix describing the methodology used to assess the social welfare resulting from the increase in trading capacity in future versions of the 10-year programme, together with the most recent results of the case studies published by ENTSO-E.

#### **4.3. Assessment of investment requirements**

To draw up its 10-year programme, RTE relies on the generation and consumption assumptions drawn from the 2012 "Bilan Prévisionnel", as required by Article L. 321-6 of the French Energy Code. The procedures for drawing up RTE's forecasts are determined by Articles L. 141-1 *et seq.* of the French Energy Code, as well as by Decree 2006-1170.

To reply to the CRE's request, as expressed in the latter's Deliberation of 19 July 2012 regarding the review of the 10-year electricity transmission network development programme, RTE included an overview of the generation and consumption assumptions in 2030 for the four scenarios under consideration in the 2012 version; conversely, no details were provided for the scenarios relating to the time horizon 2020.

To make the issues easier for market players to understand, the CRE therefore set out the generation and demand scenarios selected for the various time horizons, as well as a summary of the scenarios considered for 2030 in its public consultation of April 2013.

As a reminder, the main changes to the median scenario for the year 2020 involve a fall in forecast consumption, while the most important change in the generation mix concerns the shutdown of the Fessenheim power plant. Some projects may be directly linked to the assumed changes in generation capacity, like the restructuring of the Alsace network following the decision to shut down the Fessenheim power plant.

The simulated flows for the year 2030 in the various scenarios set out in the 10-year programme enable the network constraints that may appear within this timeframe to be identified. The CRE nonetheless notes the difficulty in establishing a link between the results of these simulations for the year 2030 and the list of the projects selected in the 10-year plan. The clarity of the assessment of investment requirements would therefore be improved if a greater distinction was made between the time horizons for presenting the assumptions and results, and if the consequences of changes to the assumptions on the project selection process were established more clearly.

Furthermore, in the case of renewable energy, RTE indicates that the first Regional Climate, Air and Energy Plans were approved by the Government authorities in late June 2012. However, the resulting Regional Renewable Energy Network Connection Plans (S3REnRs) were only approved in late 2012. This means that RTE did not take those plans into account in the 2012 version of the 10-year programme. The CRE is

nonetheless insisting on a timetable for the inclusion of the S3REnRs into the 10-year programme being published in the next version.

Lastly, where interconnections were concerned, two levels of interconnection capacity requirements were selected for the year 2030. The interconnection capacity requirement amounts to 28 GW for the “high consumption” and “new mix” scenarios, and to 21 GW for the other two scenarios. However, RTE primarily describes this 7 GW difference between scenarios in a qualitative manner. For the “high consumption” scenario, RTE expects a strong increase in exchanges between France and Spain and with the United Kingdom, and an even more significant increase for the “new mix” scenario. However, this qualitative information does not enable the 7 GW difference between the various scenarios to be explained. The CRE thus considers that the method for determining interconnection capacities in accordance with supply and demand scenarios both in France and abroad should be more detailed. The sensitivity of interconnection requirements to the supply and demand scenarios under consideration should also be specified for each border.

The CRE observes that the descriptive assumptions for neighbouring countries are identical in the four scenarios. In the long term, it would be appropriate to consider descriptive assumptions for neighbouring countries that vary depending on the scenarios, in a way that is consistent with the future TYNDP work.

#### **4.4. Consistency with the TYNDP in terms of investments and the level of information**

In the absence of a new version of the TYNDP for the current year, and to the extent that the 2011 10-year programme was consistent with the 2012 TYNDP, the assessment of the differences between the 2012 10-year programme and the 2012 TYNDP is identical to the assessment of the changes in the 10-year programme between the 2011 and 2012 versions. As mentioned previously in Section 4.1, these differences do not give rise to any particular attention points where the CRE is concerned.

In addition, the CRE has also performed a comparison analysis of the generation and consumption assumptions used for the 10-year plan, and those used both for the forward-looking assessment of the equilibrium of the electricity system at the European level (*System Outlook and Adequacy Forecast*, hereinafter SO&AF), and for the preparation of the TYNDP. Specifically, the CRE focused on comparing the scenarios in the SO&AF and the 2012 forecasts for the period until 2030.

ENTSO-E sets out two detailed scenarios (known as Vision 1 and Vision 3) in 2030. These scenarios have been drawn up according to a bottom-up approach, which consists in aggregating all the national scenarios<sup>2</sup>. The French generation and demand assumptions included in the two SO&AF scenarios should be compared with the “low growth” and “new mix” scenarios in the 10-year programme.

Comparing the assumptions for consumption and for installed generation assets results in a few differences for peak consumption (1.7 GW for the “new mix” scenario) and for thermal capacity (8 GW for the “new mix” scenario). In the case of consumption, the difference is explained by the fact that peak demand corresponds to the hourly average of instantaneous peak load in the simulations, while the forecasts publish the maximum instantaneous value for the year. The difference observed for thermal capacity between the SO&AF and the forecasts is explained by a classification difference. In the forecast report, capacities of load management are included in thermal capacity, while they are accounted for separately in the SO&AF.

In the case of the available interconnection capacity, the levels shown in the SO&AF correspond to the capacity that is simultaneously available for export and import, while the 10-year programme shows the level of installed capacity. However, the level of installed capacity shown in the 10-year programme is consistent with the available capacity levels shown in the SO&AF. The CRE nonetheless suggests that the next version of the 10-year programme should specify both the installed border interconnection capacities and the capacities that are simultaneously available for each border.

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<sup>2</sup> ENTSO-E is also planning on including two other scenarios for the period until 2030 for the next TYNDP publication year. These scenarios will be based on a “top-down” approach, i.e. they will be drawn up on the basis of market studies. ENTSO-E plans to publish these studies in the next version.

## 5. The CRE's recommendations

Where the next version of the 10-year programme is concerned, the CRE recommends that RTE:

- differentiates more clearly between the various time horizons, both in terms of scenarios and of the overview of the network constraints and selected projects;
- sets out the impact of changes to the assumptions on the selected projects for each time horizon in a clearer manner;
- includes an appendix setting out the method for assessing the social welfare used for the TYNDP, and including the latest results of the economic studies published by ENTSO-E for projects involving France;
- provides a clearer explanation for the method used to determine interconnection capacities and specifies the sensitivity of these capacity levels to assumptions for consumption and installed capacity in France and abroad;
- includes a timetable for incorporating the S3REnRs into the 10-year programme;
- specifies the consequences of the timetable delays that may exist between the 10-year programme and the TYNDP, in terms of consistency.

## 6. The CRE's decision on the 10-year programme

The CRE considers that the 10-year network development plan covers the investment requirements, and is consistent with the 2012 TYNDP overall. The few differences with the TYNDP observed in terms of projects are explained by updates to supply and demand assumptions, given both reports' different publication dates.

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For the French Energy Regulation Commission  
The President,

Philippe de Ladoucette