# The Future of the Electricity System: European Ambitions & French Perspectives

## *[Conference Brief]*

*On 4 July 2017, Ifri Center for Energy hosted a high-level conference on the future of the French and EU electricity systems. The event gathered key experts from businesses, associations, think-tanks and public institutions to reflect on the ongoing transition within the French and EU electricity systems, as well as discuss the relevance of the Clean Energy Package (CEP) and reform of the EU carbon market (ETS).*

Keynote Address

**Vincent Thouvenin**, Director for European Affairs at RTE, held the keynote and presented the major challenges and opportunities for the French transmission grid operator, in a context of decarbonisation, decentralization and digitalization. These changes are well under way, with for example six 500 MW off-shore wind projects to be connected to RTE's network in the coming years. The decentralization process is no longer a marginal trend either, leading to less withdrawal from the grid but increasing injection. Likewise, cross-border electricity flows become more volatile, requiring a more flexible operation of the transmission grid. Finally, the amount of available data to be compiled by RTE should increase tenfold in the next ten years and digitalization is now placed at the heart of RTE's industrial strategy. RTE is committed to moving forward with these various changes, while fulfilling its general interest mission and ensuring the coordination between the local, national and EU scales. As a key member of ENTSO-E, RTE has been long engaged in the EU debates and welcomes the ambitious objectives enshrined in the CEP. To achieve effective results, it remains crucial to build on existing initiatives, such as the regional security coordination initiatives, and also fully implement the EU network codes. Bureaucratic approaches should be avoided when it comes to governance frameworks, and it is equally important not to introduce unnecessary rigidities for the management of demand response, the use of congestion rents or the operation of flexibility tools. Finally, the new context will require an in-depth discussion on the interactions between wholesale and retail markets and the roles of TSOs and DSOs.

Session 1: Building the 21st century European electricity system, the French approach, chaired by Olivier Appert, Senior advisor for Ifri Center for Energy

**Mario Pain**, Deputy-Director for Energy within the French Ministry for the Ecological Transition, started with a reminder of the core mission of the electricity systems: supplying consumers with electricity at a reasonable price, while preserving both the environment and social cohesion. The French energy transition process is framed by the 2015 Law and pursues ambitious targets, including a 40% share for Renewable Energy Sources (RES) in total electricity production by 2030. Renewables are to play a key role in the future of the electricity system and costs have been significantly reduced, although support schemes are still necessary. These subsidies mean higher electricity prices for the

consumer and raise questions of public acceptability and market design. France remains opposed to technologically-neutral calls for tenders, because citizens have a right to say in the choice of the solutions developed and because industrial and land planning issues have to be taken into account. Likewise, financing renewable projects in neighbouring countries with national taxpayers' money raises concerns in terms of public acceptability. In France, the nuclear fleet should be reduced from 75 to 50% of the electricity production but it will remain a key pillar of the electricity system in the long-term, with open questions around the replacement of aging reactors, including on remuneration schemes. Today's market design needs to be made more flexible to accommodate the needs for smart grids, storage and demand-response, while ensuring that security of supply is guaranteed. Capacity markets are a first step in enabling short-term investments in new capacities, but long-term contracts may still be needed to trigger larger investments in the future.

**Domitille Bonnefoi**, Director of Networks within the French Energy Regulator (CRE), stressed the high speed of the ongoing transition, requiring all players, including the regulator, to keep up and anticipate the new trends. Describing the different ways in which CRE is promoting an innovative grid, Ms Bonnefoi mentioned the platform for sharing experiences around smart grids initiatives, provisions in transmission tariff regulations (R&D budget and yearly approval process for demonstrators), a new report on data management by grid operators, and also the organisation of a forum on self-consumption. CRE has always played a decisive role in the different projects favouring the integration of electricity markets, in particular at the regional level, and it is proactive in adapting the national regulation to the EU framework. Considering that the CEP is a step forward in the construction of the internal energy market, CRE published thirteen position papers on the EC proposals covering aspects related to governance, network and market. CRE expressed notably its support for strengthening the coordinating role of ACER, suggesting that some topics do not need unanimous approval by all regulators, but also stressed the need to reinforce the power of the Board of Regulators in the internal governance of the Agency.

**Antoine Guillou**, Networks and Market Adviser within the French electricity trade association (UFE), explained that the ambition of the French electricity industry was to be at the forefront of the innovation process, developing solutions for all dimensions of the energy transition (renewables, digitalization and energy efficiency) and also strengthening electrification trends in the European economy. An orderly and cost-effective transition requires a stable investment framework, which should include a strong EU ETS price signal, appropriate EU rules for capacity mechanisms and the possibility to launch calls for tenders for specific RES. Focusing on the ways demand response can be valued, different approaches tailored to national circumstances should be allowed as long as they remain compatible with the internal market rules. With regards to harmonization, pragmatism should prevail and "quick wins" should be given the priority, in particular over the full harmonization of balancing models or transfers of operational responsibility at the EU level. Finally, the EU framework should encourage innovation on the electricity grid, while also ensuring that the principles of non-discrimination, unbundling and cost-reflective charges are respected.

The functioning of the EU ETS system was the first topic discussed during the **Q&A session**. The panel acknowledged that there was no easy solution, because agreeing on a minimum carbon price at the EU level was extremely difficult whereas introducing national measures would only lead to carbon leakage. One way forward could be a regional price floor but the feasibility of such initiative has to be further explored. With regards to business models in a context of zero marginal cost power production, most speakers stressed that the CEP included a wide range of measures to improve the functioning of the energy market but would not provide a final answer to the long term investment challenge. Coming back to the harmonization of capacity mechanisms, it was stressed that an EU

approach was not compatible with Member States bearing the responsibility of security of supply vis-à-vis national consumers. Self-consumption was also briefly discussed, with all speakers calling for a robust approach to respond to the new societal needs while sending the relevant price signals and avoiding cross-subsidies between different types of customers.

Special Address

Between the two sessions, **Florian Ermacora**, Head of the Internal Energy Market Unit at DG Energy, presented the EC strategy for adapting the EU electricity market design to the decarbonization agenda. The overall objective of the CEP is to reduce emissions at least cost for the EU customers, with a clear focus on energy efficiency efforts but also an EU-wide approach for the further deployment of RES through competitive tendering. Focusing on market design issues, Mr Ermacora suggested that renewables should be able to compete in the energy and system services markets, while consumers should be incentivized to take a more active role through dynamic pricing, demand response schemes and decentralized production opportunities. There is also a need to create a level-playing field for both renewables and conventional sources, which requires adapting the priority dispatch principle. While the need for capacity mechanisms should not be denied, a thorough assessment of the adequacy situation should be conducted and should not be restricted to the national borders. System operators are already cooperating at the regional and EU levels, mostly on a voluntary basis, and the Commission's intention is to bring this structured cooperation into the legislation. The objective is to adopt the legislation by the end of this year, or beginning of 2018.

Session 2: Top-down harmonisation: additional rigidity or real enabler? Chaired by Sonia Van Renssen, Freelance Climate, Energy and Environment Journalist, Brussels Correspondent for Energy Post

**Laurent Schmitt**, Secretary General of ENTSO-E, highlighted that the EU push for renewables was strongly impacting the electricity sector and requiring a new thinking on how to manage flexibility in the system, and in particular how to couple the power, gas and mobility sectors. The CEP should facilitate the 4$^{th}$ industrial revolution and help create a digital, data centric electricity system, while promoting the electrification of transport and the engagement of prosumers. As for the new market strategy for RES, priorities should include the phase out of the priority dispatch, the exposure of "mature" RES to the market, the introduction of balancing responsibilities and the use of market-based support schemes for these sources and the shift toward a coordinated support at the regional and EU levels. Network codes are a key vehicle in integrating markets and systems, in optimising the use of capacity and increasing transparency and integrity at the EU scale. Important milestones are about to be reached, including the establishment of a common balancing platform and the full implementation of day-ahead coupling. In addition, new issues are progressively being introduced in ENTSO-E's agenda, including the integration of wholesale and retail markets, the valuation of demand response, DSO-TSO cooperation and cybersecurity.

**Michel Cruciani**, Associate Research Fellow at the Ifri Center for Energy, presented the main findings of his latest study on the new EU landscape for renewables by 2030. The three binding targets for 2030 – on emissions, renewables and energy efficiency – require not only new governance frameworks but also a close look at the possible interactions between these targets. For example, a slight increase in the energy efficiency target (from 27 to 30%) implies a much lower $CO_2$ price and a higher cost for renewables support schemes. The CEP gives a central role to the wholesale electricity market, but financial support for renewables will still be necessary. Much uncertainty remains because this support will be framed by the DG COMP future guidelines on state aids. The simulations of the PRIMES model show that RES will rise significantly by 2030, with wind and solar exceeding

conventional capacity. However, there will be strong discrepancies between countries in terms of renewables deployment, with most capacity being developed in the Western part of the EU. Mr Cruciani also highlighted that service-oriented activities would be stimulated by the new Package. Additional measures should be introduced with regards to the promotion of the EU industry, a fair distribution of job creation in Europe and the retraining of workers from conventional sectors.

**Emmanuel Tuchscherer**, Director for European Affairs at ENGIE, focused on the possible lack of consistency between the CEP and the ETS reform. On the one hand, the two policy initiatives follow the same objectives; they promote market integration, energy efficiency, emissions reduction and also research & innovation. On the other hand, they seem to overlap; various studies show that increased renewables and energy efficiency targets lead to a weakened carbon price. The current functioning of the EU carbon market is also not in line with the ambition of the Paris agreement. Investment in new low carbon capacities requires long-term certainty on climate policy, but the ETS does not provide such long-term price signal. In this context, improving the synergies between the energy and climate policies should be a priority for the EU. It requires fixing the ETS with remedial measures and avoiding mixing policies, for example by rejecting the introduction of the 550g CO2/kWh emissions performance standard for capacity mechanism since it does not lead to emissions reductions while it could jeopardize security of supply. The EU ETS governance framework should also be reviewed, to take into account potential policy overlaps or additional national measures. Another possible solution is that a coalition of Member States introduces a regional price floor to make sure the carbon price is actually strengthened before the ETS signal can take over.

**Frauke Thies**, Executive Director of Smart Energy Demand Coaliton, stressed the need for more flexibility in the electricity system, physically but also economically. The goal of the CEP is to facilitate the shift toward a system where supply and demand are increasingly interacting, by favouring dynamic pricing through the use of smart meters and the removal of regulated prices. At the moment, this kind of implicit and short-term demand side flexibility is possible in Estonia and Finland only. The other way of engaging flexibility from more decentralized sources is the so-called explicit demand side flexibility, which implies opening the markets to all solutions. France has been one of the pioneering countries in removing the barriers for participation by all actors and the CEP is also pushing in this direction. Unlocking flexibility can save billions and the investment case is often more favourable on the demand side. However, depressed market price signals, as well as flat taxes and levies at the consumer side can hamper the business case. On the issue of network charges and self-consumption, capacity-based tariffs alone incentivize prosumers to minimise their connection with the system and rather use flexibility only for their own self-optimisation, rather than encouraging them to feed flexibility into the system. Finally, where they are introduced, capacity mechanisms should be well-designed to avoid flattening wholesale prices further, and also include all flexibility sources.

Coming back to the issue of regional cooperation during the **Q&A session**, L. Schmitt clarified that the initial concept of “ROCs” was not fit for purpose because it was not taking into account the fundamental role of TSOs in terms of managing security supply from a country perspective. More needs to be done with regards to capacity management at interconnections but a step by step approach, building on existing structures, is preferable. With regards to inequalities, M. Cruciani, suggested that the East-West divide was mainly due to differences in costs of capital and that EU funding could be considered to fill in the gap. With regards to ETS functioning, E. Tuchscherer added that a robust reform was the preferred option but the current EU negotiations were not heading in this direction. In this context, the intergovernmental path could be the way forward and the carbon price floor would be conceived as a temporary measure only.

## Closing Statement

**Thor-Sten Vertmann**, Head of Energy Section at the Estonian EU representation, explained that the role of Estonia would be to lead and facilitate the discussions on the EU legislative proposals, focusing on the schedule but mostly on tangible results and quality of the process. With regards to the management of wholesale markets, national differences are here to stay and full EU harmonization would not be a realistic objective. The regional scale should be given the priority, to at least avoid the disturbance of wholesale markets between neighbours. The cross-border disturbances are much less evident on retail markets but the EU initiatives should promote the empowerment of consumers, in particular considering the length of pay-back periods. Given the sensitivity of governance issues, a step-by-step approach should also be favoured by the Estonian Presidency.