Délibération

Paris, 20 November 2009

Conclusions of the French Energy Regulatory Commission (CRE) on the spike in electricity prices on 19 October 2009

On Monday 19 October, electricity prices on the French spot market reached a baseload price of 612.80€/MWH and a peak price of 1146.60€/MWH. The hourly quotes hit 3000€/MWH over four hours, from 8am to 12pm. These hourly peaks exceed the levels reached during the peaks of October and November 2007, when the maximum rate of 2500€/MWH was recorded on 12 November 2007. These prices were set as part of day-ahead exchange operations on the morning of Sunday 18 October.

During these four hours, offers to sell power did not cover bid volumes, the shortfall of hourly volumes registering an average of almost 1000 MW after the TLC trilateral coupling process. The technical ceiling of 3000 €/MWH was therefore applied for these hours, in accordance with EPEX Spot Auction trading regulations. An identical ceiling is also used to fix prices on the three trilateral coupling (TLC) *spot* markets (France, Belgium and the Netherlands), and on the German and Swiss markets.

The CRE launched an investigation into the factors explaining these prices. In particular, it analysed the trading sequence on the EPEX Spot Auction market that led to these prices being fixed and the fundamentals of the French electricity system that condition market traders' actions.

The initial conclusions of the CRE's investigation are based on the declarations and information received from various market players, in particular EPEX Spot, EDF and its subsidiary EDF Trading, and the French electricity industry association, UFE.

Trading sequence

The German and Swiss spot markets are now managed by EPEX Spot under agreements between Powernext and EEX (German energy exchange). As standard procedure, prices are established on the French spot market at 11am, preceded by the Swiss market at 10.30am and followed by the German market at 12pm. This sequence is also governed by the operational rules of the trilateral coupling between France, Belgium and the Netherlands, which provide for decoupling of the three markets in cases where TLC results cannot be published before 11.45am. It is also subject to VPP gate closure times and the German auction at midday.

On Sunday 18 October, a test conducted by EPEX operators shows that Swiss pricing reached a peak for Hour 8 (7-8am). Epex spot informed its participants following the procedure for these circumstances (second auction or RFQ[1]) at 10.45am. The results of the procedure led to the Swiss results being published at 11am.

[1] Request for quotes.

A test conducted on the French market at 10.59am shows an imbalance between bids to buy power, exceeding offers to sell power, for several hours of the day (event known as curtailment). However, as the test was being conducted, several participants had not yet sent their orders to Epex Spot. The delayed pricing on the Swiss market caused various participants to submit their orders for the French market after 11am.

EPEX closed the order book for French pricing and received the potential capacity exchange as part of TLC a few minutes after 11am. EPEX traders were then informed of the results at 11.13am, indicating continued imbalance between offers to sell and bids from 8am to 12pm, although to a lesser extent compared to the test conducted at 10.59am. This is due, in particular, to import flows from Belgium and the Netherlands of 700 MW obtained as part of TLC.

EPEX internal procedures in force on 18 October provide for the launch of a second auction under certain circumstances, including i) a situation of curtailment, imbalance between purchases and sales or out-of-scale prices based on a representative order book and ii) at 11.05am at the latest, in compliance with the procedure for TLC operations. On the basis of results at 11.13am, the decision was made to validate the results obtained for the pricing of the French market. Epex spot justifies its decision not to trigger a second auction after the 10.59am test or following the 11.13am results due to the combination of these two requirements.

Operational decisions made by EPEX following this price peak

On 22 October, Epex Spot announced the following measures for application on 23 October:

- Acceleration of the second auction (RFQ) procedure on the Swiss auction, enabling results to be published at 10.55am,

- Implementation of a test on the French market before 11.03am, leading to a second auction (RFQ) before 11.05 if necessary, even if the order book is not considered representative and if large orders remain unplaced. This test must be conducted at 11.05am at the latest.

Interconnection flows

The mechanisms approved by the CRE to manage electricity interconnections were successful. Import flows during the price peak hours were particularly high and limited the shortfall of sales offers on the French spot market, strengthening the securtiy of supply in France. Over these hours, an average of 7200 MW was imported, almost bordering the total import capacity ceiling for all interconnections (around 9000 MW). For German, Belgian and British interconnections, 100% was used and 82-91% of the Swiss interconnection was used depending on the hour.

For the Spanish interconnection, imported capacity could not be used due to maintenance.

As regards the Italian interconnection, the 900 MW import capacity available the day before was hardly used during the four hours of price peaks. D-1 nominations in the opposite direction of the price differential (between 45 MW and 310 MW) were also observed. The low level of responsiveness on this interconnection is mainly due to the organisation of the Italian market; in particular as the Italian spot market closes very much ahead of other European markets (9am, D-1).

Consumption and available production capacity

October consumption peaked on the 19th reaching 69.2 GW due to temperatures below the seasonal average. By way of comparison, consumption peaked the previous Monday at 59.8 GW.

Available production capacity on 19 October came to 73.6 GW[2].

The difference between consumption and available capacity was 4.4 GW, a sharp drop compared to the average estimated difference of 11 GW[3] for the month of October.

At 8pm, transmission system operator RTE estimated the level of available margins at less than 3.8 GW, while a threshold of 3.7 GW is required to ensure network stability within an acceptable risk. The system requires this level of margin to deal with production contingencies and consumption varying from projected figures. Considering this data, the system's stability is not threatened beyond the level of risk deemed acceptable, yet it demonstrates the electricity system's restricted room for manoeuvre when faced with a peak in consumption.

Available nuclear power

On Monday 19 October, available nuclear power reached 44.6 GW. This figure corresponds to a level of scheduled and planned outages of almost 18 GW over the day. On average, outages (scheduled and unplanned) represent approximately 18.4 GW for October 2009, a 19.6% increase compared to 2008. In comparison to the installed capacity of nuclear power (63GW), outages recorded on 19 October represent over 27%.

Forecast production availability and consumption

In the week prior to Monday 19 October, forecast production availability and consumption were revised considerably on two occasions.

In terms of consumption, the provisional data published by RTE reports projected consumption on Friday 16 October, just before the weekend, at 65.9 GW for Monday 19 October at 9.30am (the morning peak time). On 18 October, the data is revised, estimating 68.9 GW, a 3000 MW increase.

Production availability is estimated at 77.8 GW on 16 October for Monday 19 October. This data remains unchanged when published again on Saturday 17 October, following an internal computer glitch at EDF preventing the transmission of updated projections (more information on the procedure on the UFE website). The figure is updated and dropped to 73.7 GW on the morning of Sunday 18 October (Sunday's projection for the next day). Between Friday and Sunday morning, estimates of available production are significantly revised, representing a 4100 MW drop in the projections.

[2] Data provided to the CRE by the UFE, data published as part of the transparency approach presenting missing data for Coal+gas power.

[3] This estimate is based on data available on the RTE website for October 2009. Days for which some or all information is unavailable have not been taken into account.

Over the weekend prior to 19 October, several unplanned outages affected various power plants. Some of the data was used in the availability figures published on the Sunday morning and partly explain the difference in the Monday forecasts published on the Friday and the Sunday.

- 46.4 GW to 44.6 GW, i.e. a 1800 MW drop in nuclear availability forecasts,

- 11.5 GW to 10.3 GW for peak hydropower capacity, i.e. a 1200 MW drop. This is for the most part due to an outage at the Grand-Maison hydropower plant that occurred early on the Sunday morning and was repaired at the end of the day.

In total, between the Friday and the Sunday morning, total revisions for consumption (increased) and available capacity (decreased) reach the considerable figure of 7100 MW. These revisions may have significantly changed participants' anticipations and actions on the markets on the Sunday morning.

Operational decisions made by EDF

EDF optimises its production and manages its market activity by using a "1% risk" criterion. This criterion is used for EDF's portfolio to assess the margin required to reduce to 1% the company's risk of having to resort to extremely costly or one-off means to ensure balanced supply and demand within its scope of responsibility.

As part of this risk mitigation approach, EDF covered itself with purchases on the wholesale market as early as Friday and then on Sunday morning, on the Swiss exchange in particular. These operational decisions were based on the aggregated information available as part of 'transparency' press release data on the Sunday morning and on internal knowledge of availability and unplanned outages affecting production capacity. Consequently, extremely low levels of EDF available capacity were put up for sale, particularly for the Monday morning peak. These capacities for sale were restored at the end of the day on Sunday when the Grand-Maison plant was repaired.

The CRE's initial conclusions

The CRE considers that the extreme pressure on production fundamentals and on the forecast balance between supply and demand the day before the 19 October led to the price peak recorded the following day.

Against the backdrop of limited production availability particularly due to scheduled or unplanned outages in nuclear power production, this pressure is a result of two factors combined:

- Consumption forecasts for Monday 19 October revised from Friday to Sunday (+3000 MW) and consumption peaking on 19 October,

- Available production capacity forecasts for 19 October revised from Friday to Sunday (-4100 MW), mainly due to unplanned outages of nuclear power and down time at the Grand-Maison hydropower plant on the Sunday morning. The plant resumed production at the end of the day on 18 October.

The considerable difference between consumption and available capacity forecasts made from Friday to Sunday for Monday 19 October together had a significantly high impact, of over 7000 MW. In the specific case of EDF Trading, this led to bids on the markets in accordance with its internal risk management criteria and to less available capacity on sale on the French market on the morning of Sunday 18 October.

Consequently, the CRE has asked EDF to take necessary steps to improve the currently insufficient reliability of provisional data on its production capacities. It also requests that the UFE improve provisional data transparency and in this respect stresses the importance of publishing information on unplanned plant outages.

As regards EPEX, market participants have criticised the electricity exchange operator for not having triggered a second auction likely to have encouraged additional sale offers when levels of such offers were insufficient. EPEX has justified its decision to members, putting forward its internal procedures and the specific context of operations on the morning of Sunday 18 October as grounds. The CRE believes that it is difficult to ascertain with hindsight whether a second auction could have resolved the imbalance recorded between offers to buy and offers to sell. The CRE duly notes that the new procedure in application since 23 October sets the deadline for second auctions at 11.05am. The CRE recommends that EPEX work with its members and TLC partners to study measures that may make this obligation more flexible where necessary.