



2017 – Power prices up and renewable costs down

2017 is coming to an end. After many years with falling power prices, we have finally seen some price recovery in the Continental markets. Due to some trouble with French nuclear plants, there have also been some price spikes not seen for a very long time, almost like shadows from the past that market participants only vaguely remember. At the same time, costs for renewables continue to fall, moving many technologies closer and closer to market parity. The overall energy transition will continue, creating new challenges and opportunities for existing and new market participants. We are looking forward to also helping our clients in 2018 to address these challenges and opportunities.

Increasing coal prices have pushed European power prices up

Continental power prices have showed a welcomed increase in 2017. The German power price averages 35 EUR/MWh year-to-date, up from 30 EUR/MWh in 2016. This is the first time since 2011 that the German power price shows a year-on-year increase. The price increase is mainly driven by a higher coal price.

Uncertainty in the French power market persists after French nuclear safety authority, ASN, this summer asked EDF to review all manufacturing files from the Areva-owned Creusot factory, in relation to EDF's 58 French reactors. EDF must submit the findings two months ahead of planned restart of each plant. There have been several delays in the restart of reactors following maintenance and the review ordered by the nuclear watchdog.

The UK power price shows an average of 51.5 EUR/MWh year-to-date. Price developments have been affected by the nuclear challenges in France, as well as increasing coal prices through imports from continental Europe. Friday April 21st was a watershed moment for the UK, as it was the first day since the World's first centralised public coal-fired generator opened in 1882 at Holborn Viaduct in London, that the country met its electricity demand without using coal-fired power generation.

In Spain, very dry conditions throughout 2017 have led to increased power prices. Hydropower usually makes up 12% of the production mix, but is down to 9% in 2017. Spanish reservoirs are at a 20-year low. Spanish power prices average 52.5 EUR/MWh year-to-date.

In short, prices in Europe have somewhat recovered (see also Figure 1), driven by higher coal prices and availability issues for French nuclear capacities. In addition, the forward markets seem to price in some extra winter price premium in the next year, betting on some capacity issues in French power plants.

Figure 1 European power prices (EUR/MWh)





The cost of renewable energy continues to fall and will change the market dynamics

The observed power prices should not blur the fact that the cost of renewable energy continues to fall, moving renewables closer and closer to market parity. An illustration of the cost decline is shown in Figure 2.

Driven by vast global investments, the costs of wind and PV continue to slide down the learning curve and are changing the global energy market radically. In addition, falling capital costs (or the lack of alternative investments) contribute to falling levelized costs of energy (LCoE).

The cheapest new power generation is no longer fossil-fuelled, but based on renewable energy. For Europe's part, wind power is probably the cheapest in the North while PV is cheapest in the South. The demand for flexibility and energy storage options increases, which also places new demands on the transmission system.

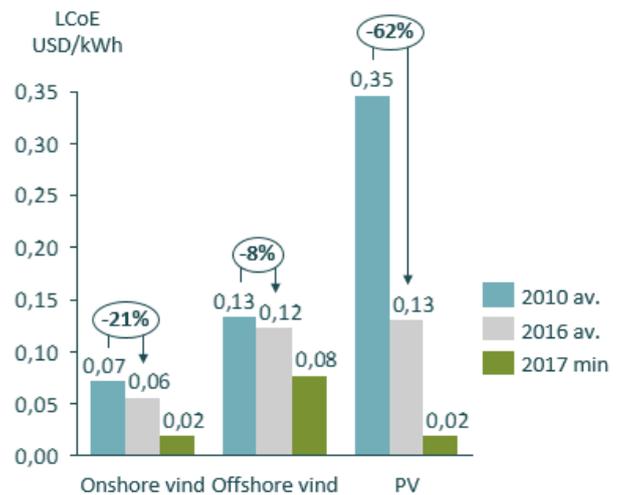
The cost decrease seen in Germany, where auctions for renewables subsidies were introduced in 2017, is significant. Even in the short time between February and October, the average subsidy requested by solar fell from 6.8 ct/kWh to 4.9 ct/kWh (-25%), and wind subsidies fell from 5.71 ct/kWh to 3.82 ct/kWh (-33%). Offshore auctions were the biggest surprise, with most of the capacity asking for no feed-in-tariff at all.

However, it should be noted that, with all auctions, there is a small caveat: the winners of the auctions have some years to install the renewable generator. For example, in the case of the offshore auctions, the connection date is 2025, and it is fair to assume that the winners of the auction are somewhat betting on rising whole-sale market prices.

Around the world, we see a similar fall in RES costs. The most recent record announced is a PV plant in Mexico asking for 17.7 \$/MWh. Admittedly, such low prices can currently only be achieved if the investments are considered largely risk-free. But the numbers are impressive nonetheless.

Similarly, we see a fall in storage costs. The installation of a 100 MW battery in Australia has been among the headlines. At the same time, many end-consumers combine their PV systems with local storage. While it is not economical to do energy arbitrage with Li-Ion based storage on whole-sale prices, it is becoming feasible to do so on retail-prices where an additional income stream stems from avoided taxes and tariffs.

Figure 2 Cost development (LCoE) for various technologies



2010/2016 av. is the average cost globally. «2017 min» is the lowest bid in auctions in 2017. Note that this minimum applies to projects coming in 2020 (onshore wind and PV in Mexico) and in 2022 (offshore wind UK)

The Energiewende will continue

Even though spot prices have somewhat recovered, there is no reason to believe that the energy transition has slowed down.

Coal phase-out is high on the agenda in many countries. And despite the political uncertainty in Germany, where the government negotiations are still ongoing, the Energiewende will continue, even without the Greens being part of a government coalition after the so-called Jamaica coalition failed to materialize.

Potential carbon price floors, discussed in France and elsewhere, can accelerate the transition even further by adding some further price lift to prices in the short- to medium-term.

We at THEMA are looking forward to helping our clients also in 2018 in identifying opportunities and challenges that this transition implies, and in understanding and predicting market developments. Although we do not have a crystal ball, one thing is certain: 2018 will be another exciting year for the power sector.

We wish you, your colleagues and families a merry Christmas and a happy new year! See you all in 2018.