Explaining recent renewable energy auction results in Europe

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Low bids in recent renewables auctions in Europe have made the news

**Offshore Wind Farms Offer Subsidy-Free Power for First Time**

By Tino Andresen
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- EnBW, Dong bid to build projects in Germany with no support
- Record low price for power is below prevailing market rate

Source: Bloomberg 2017

**Europe, Once the Bastion of Feed-In Tariffs, Now Leads the World in Solar Auctions**

We’re entering the era of solar tenders, according to GTM’s Solar Demand Monitor.

MIKE MUNSELL | JULY 18, 2017

Source: Greentech Media 2017
This presentation will take a closer look at the auction outcomes in different European countries.

A word of caution: Auction prices dominate the news but comparing auction outcomes of different countries risks comparing apples to oranges.

We will give further insights in the auction outcomes for PV, wind onshore and wind offshore, based on AURES case studies and recent updates.
The solar PV auction outcomes in France, Germany & the Netherlands
Overall auction outcomes for solar PV have decreased substantially

- Support period: 20 years in FR and DE, 15 years in NL
Continuous price decline for solar PV in France and Germany

Overall price decline of 46-53%

Reasons for price reductions:

• Technology cost reductions
• Competitive pressure forces bidders to reduce margins
• Improvement of French rooftop auction design after 2012
• Eligibility of greenfield sites in German auctions (2017 onwards)
Fluctuating PV prices in the technology-neutral Dutch scheme

Main reasons for price fluctuation:

- Level of competition for PV – very high in 2012 & 2015, low in 2014 & 2017
- Availability of cheaper technology options
- Available support budget (auction volume)

Support period: 20 years in FR and DE, 15 years in NL

Source: Ecofys based on AURES case studies, DFBE, BNetzA and Staatscourant
The onshore wind auction outcomes in Italy, Germany & the Netherlands
Onshore wind results by auction date…

Support period: 25 years in IT, 20 years in DE, 15 years in NL and UK

Source: Ecofys based on AURES case studies and Staatscourant
...look different from onshore wind results by realisation deadline

Support period: 25 years in IT, 20 years in DE, 15 years in NL and UK

Source: Ecofys based on AURES case studies and Staatscourant
Reasons for the higher prices in NL

Effects of the technology neutral auction:

- In 2012-2013, wind had to compete against other cheap sources → lower prices
- With increasing support budget, wind onshore has faced hardly any competition since 2014 → all bidders bid close to their ceiling price
- The NL government has reduced the ceiling prices for onshore wind, but they remain higher than auction outcomes in other countries

Shorter support period than other countries (15 years)
Reasons for the low prices in DE

 Preferential rule for community energy projects:
• Low qualification requirements (no permit required)
• Long realization period (54 months)
• Low penalties

Combination of these factors has led to low bids but increased risk of non-realisation

Preferential conditions will be removed in 2018
The offshore wind auction outcome in Denmark, UK, the Netherlands & Germany
Technology innovation and high competition have led to decreasing offshore prices.

Auction outcomes for offshore wind in Europe

Support period: up to 20 years in DK, 15 years in UK, 15 years in NL, 20 years in DE

* 2012 real prices corrected for inflation

Source: own representation based on Kitzing and Wenndring 2016, Prognos & Fichtner 2017
Zero-support bids were awarded in DE for projects to be commissioned by 2024/2025

Source: own representation based on Kitzing and Wenndring 2016, Prognos & Fichtner 2017

* 2012 real prices corrected for inflation
Securing market share and opt-out option incentivized aggressive bidding in DE

- Auctions act as a door keeper to the grid and the electricity market

- Winning in the auction is the only way to become eligible for grid connection and access the electricity market

- Opt-out option: Award as an option for the future because final investment decision not required before the early 2020s (penalty until financial close only 30 €/kW)
Explaining the price difference btw. DE and UK

1. **Structure of the support payment**
   - **UK CFD**: If the market price is above the auction price, the operator pays the difference. \(\rightarrow\) *Bidding for fixed price*
   - **DE sliding FIP = asymmetric CFD**: If the market price is above the auction price, the operator keeps the difference. \(\rightarrow\) *Bidding for minimum price*

2. **Costs for development and grid connection:**
   - **UK**: grid connection paid by developer (\(\sim 11\) GBP\textsubscript{2011}/MWh)
   - **DE**: grid connection paid by TSO

3. **Commissioning date:**
   - **UK**: commissioning date is 2022/23, **DE**: commissioning date is 2024/25 (of zero-support projects awarded)

4. **Funding period:**
   - **UK**: 15 years, **DE**: 20 years
Member States allocate responsibilities for site development differently

- The model in the UK is "decentralized":
  - Costs of site development, permits, grid connection, etc. are borne by the developers

- In DE (from 2021), NL, and DK there is a centralized approach
  - Government agencies and/or TSO are responsible for several stages of site development & grid connection

Source: Ecofys
Lessons learnt
Lessons learnt from European auction results

• Competition in auctions contributed to a decrease in prices for all technologies. Securing market access further incentivized aggressive bidding for offshore. Questions about future viability and realization.

• In case of limited competition (mainly for low cost options in technology neutral auctions), auction prices increased despite falling technology costs

• Consider differences in support framework (e.g. market premium and connection responsibility) and auction design (e.g. penalties and delivery periods) when comparing prices
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