



**POLISH RENEWABLE AUCTION-
DESIGN AND ANALYSIS OF THE
RESULTS**

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Renewable situation in Poland

- The 2020 renewable energy target for Poland is **15%**
 - Poland is struggling to reach its goal with a renewable share of **10.9%** in 2017
- In the electricity sector the **dominant renewable energy technology is onshore wind** (9% of the total electricity production in 2017)
 - Share of biomass was 3%, hydro and wind accounted for 1%-1% in the same year
- Before 2016 Poland operated a **green certificate system**, which was replaced by an **auction-based feed-in premium system**, to decrease the cost of support
 - The RES act was amended, twice before the first auction (in 2016) and once after every auction rounds (2017, 2018, 2019)
- A **new renewable auction** will be held in November - December 2019
 - Approximately 750 MW for power plants with less than 1 MW capacity (PV)
 - Approximately 2 GW for power plants with more than 1 MW capacity (Wind)

Auction design

- **Static, Pay as bid, FIP auctions with coexisting budget and volume limits**
- Auction baskets are separated based on three main category
 - **Technology** (Agricultural biogas; biomass and non-agricultural biogas; PV and wind; geothermal, hydro, biofuels and offshore wind)
 - **Size** (less than 1 MW capacity, more than 1 MW capacity)
 - **Type** (New power plants; power plants migrating from the green certificate system)
- Realisation times are differentiated by technology
 - **PV- 24 months, onshore wind - 33 months, offshore wind – 72 months**
- **3 round of auctions** were held, with altogether 18 baskets (2016,2017, 2018)
 - Very **high budgets** – aiming to help fulfilling RES target of Poland

Auction results (2018)

Technology	Number of winners	Auctioned energy (share to offered)	Assigned budget (share to offered)	Minimum price	Average price	Maximum price
PV and Wind, more than 1 MW	31 (all wind)	42 TWh (93.32%)	1.929 billion EUR (52.27%)	36.95 EUR/MWh	45.93 EUR/MWh	50.80 EUR/MWh
PV and Wind, less than 1 MW	552 (all PV)	16.07 TWh (50.86%)	674 million EUR (46.00%)	67.03 EUR/MWh	81.73 EUR/MWh	84.63 EUR/MWh

Conclusions based on Polish auction results

- **Drastic price differences** (~35 EUR/MWh) between large scale and small-scale auction support prices
 - Large-scale auction was **highly efficient and competitive** even in European terms
- Some of the goals of the Polish auction system are **contradicting**
 - Price efficiency & Supporting small power plants
- **RES legalisation is changing frequently** in Poland which makes the investment environment **unpredictable**
- **The auction design is too complex**
 - High number of auction types and baskets results in few number of bids for many auctions

**Thank you very much for your
attention!**

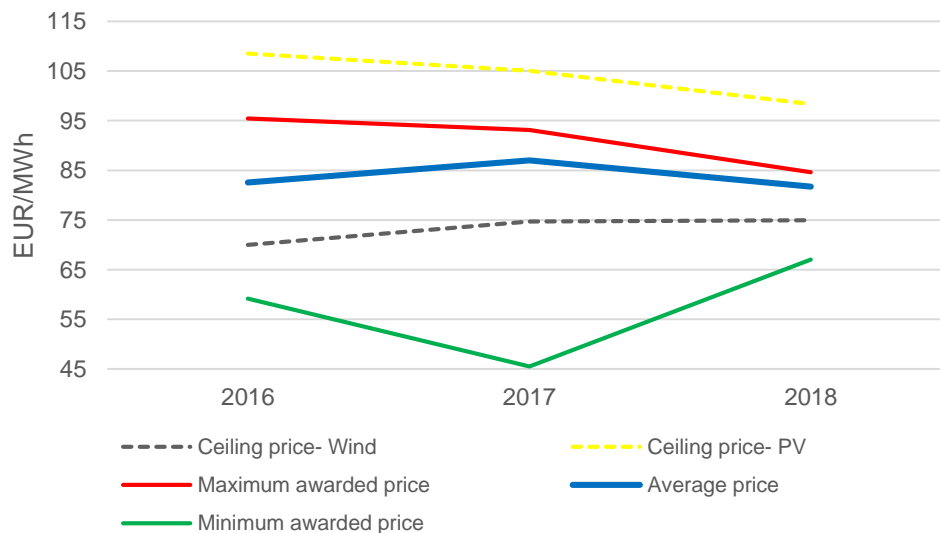
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Auction- New PV & Wind, less than 1 MW

	2016	2017	2018
Auctioned amount (TWh)	1.57	4.72	16.07
Available budget (million EUR)	319	509	6243
Number of submitted offers	152	472	N.A
Number of winning offers (share relative to submitted)	84 (55%)	352 (75%)	552 (N.A)
Share of awarded volume relative to offered volume	99.51%	99.91%	50.86%



- Auction volume and budget increased significantly between the rounds
 - The auction volume in the third round was very large even in the European context
 - As a result, only half of the planned volume was contracted
- Average prices were higher than European prices
 - Almost all winners are PV projects
- Average prices were relatively constant across the auction rounds
- Very low ceiling price for wind may have hindered competition between technologies
- The realisation rate for the 2016 auction was fair PV and very low for wind
 - PV: 55 completed out of 73
 - Wind: 1 completed out of 11

Auction – New, other technologies

Technology	Number of successful bids	Contracted volume (share of offered)	Minimum price	Average price	Maximum price
Biomass or non-agricultural biogas, more than 1 MW	1	0.97 TWh (1.70%)	93.65 EUR/MWh	93.65 EUR/MWh	93.65 EUR/MWh
Agricultural biogas, less than 1 MW	29	3.49 TWh (29.83%)	126.17 EUR/MWh	132.33 EUR/MWh	133.39 EUR/MWh
Hydro, Bioliquids, Geothermal, Offshore Wind more than 1 MW	5	0.82 TWh (15.19%)	98.03 EUR/MWh	108.72 EUR/MWh	112.38 EUR/MWh
Agricultural biogas more than 1 MW	3	0.72 TWh (20.51%)	116.13 EUR/MWh	118.28 EUR/MWh	121.05 EUR/MWh

- The categorization of the technologies is not evident
- Out of the 6 other technology auctions only the above 4 had accepted bids
- The number of participants and auctions volumes are very low, the latter never exceeds 30%
- Prices are close to the ceiling prices in most of the auctions

Auction – Existing power plants

Name	Technology	Offered volume	Auction Budget	Number of winning bids	Auctioned volume
2016 AZ/1	agricultural biogas, less than 1 MW	2.11 TWh	294 million EUR	6	0.82 TWh
2016 AZ/2	agricultural biogas at least 1 MW	2.31 TWh	319 million EUR	Unsuccessful auction	
2016 AZ/4	hydro, less than 1 MW	1.57 TWh	126 million EUR	49	0.42 TWh
2017 AZ/2	hydro, less than 1 MW	1.48 TWh	148 million EUR	44	0.31 TWh
2018 AZ/1	biomass and non-agricultural biogas, at least 1 MW	33.86 TWh	3.325 billion EUR	Unsuccessful auction	
2018 AZ/2	agricultural biogas, at least 1 MW	1.47 TWh	189 million EUR	Unsuccessful auction	
2018 AZ/3	geothermal, hydro, bioliquids, offshore wind, less than 1 MW	1.48 TWh	180 million EUR	Unsuccessful auction	
2018 AZ/4	agricultural biogas less than 1 MW	1.15 TWh	153 million EUR	Unsuccessful auction	
2018 AZ/5	biomass and non-agricultural biogas, less than 1 MW	0.92 TWh	120 million EUR	Unsuccessful auction	

- Out of the 9 auctions which targeted existing power plants only three had accepted bids
- In case of successful auctions the auctioned volume was below 50% of the offered volume
- Average prices for hydro were moderate (86 EUR/MWh), for biomass close to ceiling price (118 EUR/MWh).
- Except for hydro projects, the willingness to migrate to the FIP system was low