Case Study: RES-E Auctions in Spain

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The “umbrella” regulation

- Four pieces of legislation 2013-2014.
- RES-E plants would receive the market price plus a “specific complementary remuneration” (remuneration for the investment, Rinv)
- Rinv: a payment per kW that allows installations to recover those investment costs which cannot be recovered by the sales of electricity in the market.
- Each installation receives the market price plus the Rinv of the plant type taking into account that a “reasonable profitability level” cannot be exceeded.
Three RES-E auctions

• January 2016
  - 700 MW
  - technology-specific (wind, biomass)

• May 2017
  - 3000 MW
  - technology-neutral

• July 2017
  - 5037 MW
  - multi-technology (wind, solar PV)
What is auctioned? What is offered by bidders?

- Product auctioned: capacity with a right to receive the specific retributive regime.
- Bidders offer a discount (%) on the initial investment of the RSP.
- SP: Standard plant; RSP: Reference standard plant.
- The RSP and its retributive parameters are defined.
- The resulting values of the retributive parameters of each SP are obtained from the retributive parameters of the RSP and the auction result.

\[ R_{inv\ SP} = R_{inv\ RSP} - m(rsp) \times \text{reduction bidded}. \]
What is auctioned? What is offered by bidders?

Rinv SP = Rinv RSP 2019 * reduction bided

UNITARY OVERCOST = Rinv SP / Nº hours RSP

% reduction

1st auction

Demand

Unitary overcost (€/MWh)

2nd and 3rd auctions

Demand

Marginal system overcost

kW

kW
Common design elements

- Volume auctioned (MW)
- Investment-based remuneration.
- Multi-item, static auctions.
- Uniform pricing.
- Confiscation of economic guarantees.
- No pre-defined schedule.
### Outcome

- Capacity awarded (MW).

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<th></th>
<th>1st</th>
<th>2nd</th>
<th>3rd</th>
<th>TOTAL</th>
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<tbody>
<tr>
<td>Wind</td>
<td>500</td>
<td>2980</td>
<td>1128</td>
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<tr>
<td>PV</td>
<td>0</td>
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<td>Other</td>
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<tr>
<td>TOTAL</td>
<td>700</td>
<td>3000</td>
<td>5037</td>
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- Zero Rinv