AURES II – Auctions for Renewable Energy Support II

Final conference

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Can multi-technology auctions work?

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What are multi-technology auctions?

• In multi-technology auctions, more than one technology can be awarded in the same auction round:
  • Auctions for all decarbonization technologies: e.g. SDE++
  • Auctions for (almost) all renewable technologies: e.g. Hungarian renewable energy auctions
  • Technology-basket auctions: e.g. combined auctions for onshore wind and PV in Greece
  • Auctions for technology combinations: e.g. auctions for storage and generation in Germany

• Multi-technology auctions are never technology-neutral!
# Impacts of multi-technology auctions

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Impact of multi-technology auctions</th>
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<tbody>
<tr>
<td><strong>Static efficiency</strong></td>
<td>High as least cost technologies are awarded</td>
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<tr>
<td><strong>Dynamic efficiency</strong></td>
<td>Potentially low as only most mature technologies are awarded</td>
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<td><strong>Support costs</strong></td>
<td>Depending on technologies necessary for reaching auction volume</td>
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<td><strong>Planning certainty and supply chains</strong></td>
<td>Potentially low due to changes in awards per technology over time</td>
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<td><strong>Flexibility</strong></td>
<td>More options for reaching the auction volume can increase competition and flexibility</td>
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<td><strong>Auction design</strong></td>
<td>More complex in order to allow for specifics of all involved technologies</td>
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Technology bias in multi-technology auctions

- Auction design parameters influence relative competitiveness of technologies, e.g. longer realization time favors technologies with fast learning rates

- Model-based analysis shows:
  - type of support (type of premium) crucial for technology bias
  - impact of other design elements depends on type of support
  - marginal impact for timing of auctions
  - small impact for realization period and balancing cost responsibility
  - moderate to high impact for support period, integration of grid costs and environmental harm compensation

![Table 50](http://aures2project.eu/wp-content/uploads/2021/02/AURES_II_D8_2_bias_technology_neutral_auctions.pdf)

Source: Diallo, A., Kitzing, L. (2020): Technology bias in technology-neutral renewable energy auctions
Multi-technology auctions in the EU

- In principle required by Renewable Energy Directive and State Aid Guidelines but exceptions apply
- Numbers increasing
- Results:
  - Stop- and-go can be an issue
  - Dominant technologies can change over time
  - No clear effect on prices compared to single technology auctions
- As always: auction design needs to fit framework conditions and objectives

Multi-technology auctions can work if:

- MS define specific objectives and adapt design elements accordingly.
- Targeted technologies are comparable or auction design elements account for differences (e.g. realisation periods, level of financial prequalification).
- Multi-technology auctions are not competing with technology-specific auctions taking place at the same time.
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