

Effects of auctions on the RES sector

Executive Summary

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In the AURES II project, the effects of auctions on market concentration in the renewable energy sources (RES) value chain, energy communities and innovation have been analysed.

1. The impact of auctions and auction design elements on market concentration¹

Policy makers must make specific decisions and trade-offs related to the auction design elements (DEs). Auctions may favour certain types of actors over others, and this may increase market concentration (MC).² An empirical analysis of the following two topics has been carried out with case studies:

- The impacts of different DEs on MC in the project development and component manufacturing segments of the RE value chain.
- The relative impact of auctions (as compared to other factors influencing the value chain) on MC in those two segments of the value chain.

The main findings of this study can be summarised as follows:

- Auction DEs have a marked effect on the number and diversity of project developers and component manufacturers. The expert elicitation process has established support for the existence of impactful DEs that are expected to affect their number and diversity.

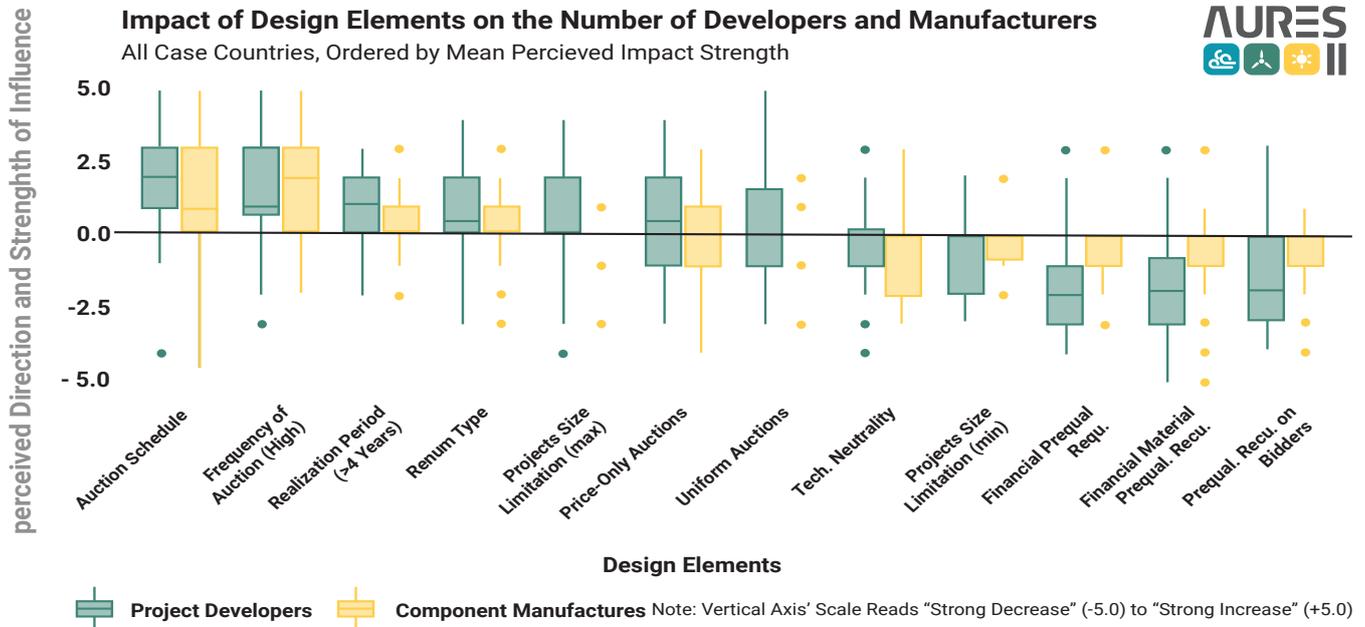
- Some DEs appear to induce large impacts on the number and diversity of firms, whereas others have a very modest influence. DEs which tend to affect the number and diversity of firms to a greater extent are the frequency of auction rounds, existence (or not) of a transparent schedule, and prequalification requirements.

- The impacts of specific DEs on the number and diversity of firms are perceived to be more pronounced for project developers than for component manufacturers.

- Auctions themselves are not the major determinant of the number and diversity of firms in the two considered stages of the value chain. Country-specific context (and other) factors will always also play a certain role in this regard.

¹ See del Río, P., Kiefer, C., Menzies, C., Marquardt, M., Fitch-Roy, O. and Woodman, B. (2020). Effects of auctions on RES value chains. Deliverable D4.2 of the EU-funded AURES II project. http://aures2project.eu/wp-content/uploads/2020/10/AURES_II_D4_1_effects_value_chain_upt.pdf

² MC is defined as the distribution of a given market among the participating companies. MC reflects both the number of firms within the market/sector (and/or participating in the auction) and the diversity of those firms (i.e. the degree of heterogeneity with respect to the size of those firms).



2. The impact of auctions on renewable energy communities³

An analysis of auctions and renewable energy communities has also been carried out in this WP. More specifically, two issues have been assessed: 1) how auctions discourage the creation or participation of renewable energy communities in auctions, 2) what auction design elements are available to prevent such discouragement. Different definitions of renewable energy communities are explored, specific challenges in RES auctions are systematically analysed and policy design options are evaluated with respect to their effects on community projects in or outside the auction.

It is concluded that: 1) Energy communities can take many forms and strive for different objectives; 2) Auction-related risks pose a strong challenge to energy community project developers due to their limited project portfolio and size; 3) Measures within the auction can facilitate participation but come at the compromise of market distortion; 4) Measures outside the auction interfere less with the auction but show limited impact against actor consolidation trend; 5) Exempting energy communities and coupling support to auction result can be a compromise, but should be done carefully.

3. The impact of auctions and auction design elements on technological innovation⁴

An analysis of the impact of auctions and auction design elements on technological innovation has been performed. Since the literature on the innovation effects of auctions is extremely scarce, an analytical framework on the mechanisms linking diffusion-driven technological innovation and auctions and their design elements has been provided. Therefore, an exploratory approach was followed. The perception of key stakeholders on the topic has been identified and some research proposals to be investigated in future research have been put forward. These research proposals are: 1) Auctions and auction design elements influence innovation through their indirect impact on manufacturers and technology developers. Different design elements in auctions have different impacts on innovation. 2) There are four main channels through which auctions and auction design elements affect technological innovation: (i) impact on private R&D through a greater profit margin. (ii) the expectation that there will be a market for the technology, (iii) impact on technology diffusion and (iv) impact on the competitive pressures faced by manufacturers. However, opposing effects are likely to occur. 3) Auctions will be one of the factors influencing innovation in RES technologies, but probably not the main one.

³ See Amazo, A., von Blücher, F., Lotz, B. and Jakob, M. (2020). Auctions and renewable energy communities. Deliverable D4.2 of the EU-funded AURES II project. Retrievable from: http://aures2project.eu/wp-content/uploads/2020/02/AURES_IL_D4_2_energy_communities.pdf

⁴ See del Río, P. and Kiefer, C. (2021). Analysing the effects of auctions on technological innovation. Deliverable D4.3 of the EU-funded AURES II project. Retrievable from: http://aures2project.eu/wp-content/uploads/2021/04/AURES_IL_D4_3_technological_innovation.pdf