

# Empirical Analysis of the Impact of Auctions on the Supply Chain

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CSIC

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## Task 4.2. Empirical Analysis of the Impact of Auctions on the supply Chains

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**Objective:** To empirically analyse the effects of auction design on RES supply chains

To estimate the perceived relative impacts of auction and auction design elements on two aspects of **Market Concentration (MC)**: the **number** of firms and their **diversity** (that is, the impact on small actors), with respect to other factors influencing these aspects (context conditions), focusing on two stages of the value chain (developers and manufacturers).

- Perceived impact of different auction design elements on the  $n^o$  and diversity of firms.
- Perceived relative impact of auctions as compared to other contextual factors influencing the value chain on the number and diversity of firms.

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## Design elements

- Material prequalification requirements on projects.
- Material prequalification requirements on bidders.
- Financial prequalification requirements.
- Technology neutrality.
- Project size limitations (maximum/minimum).
- Schedule / high frequency
- Price-only auctions
- Uniform vs. PAB
- Remuneration type
- Realisation period.

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## Methodology (I)

- Structured interviews with key experts (stakeholders / actors) from the RES sectors of four countries. An Expert Elicitation-based approach.
- Focus on two stages (project developers and component manufacturers).
- Focus on four technologies (on-shore wind, off-shore wind, solar PV and CSP).
- Case studies:
  - Spain (onshore wind and PV): *CSIC*.
  - UK (offshore wind): *University of Exeter*.
  - Peru (onshore wind, PV): *Factor*.
  - South Africa (CSP, PV and on-shore wind): *CSIC and Factor*.

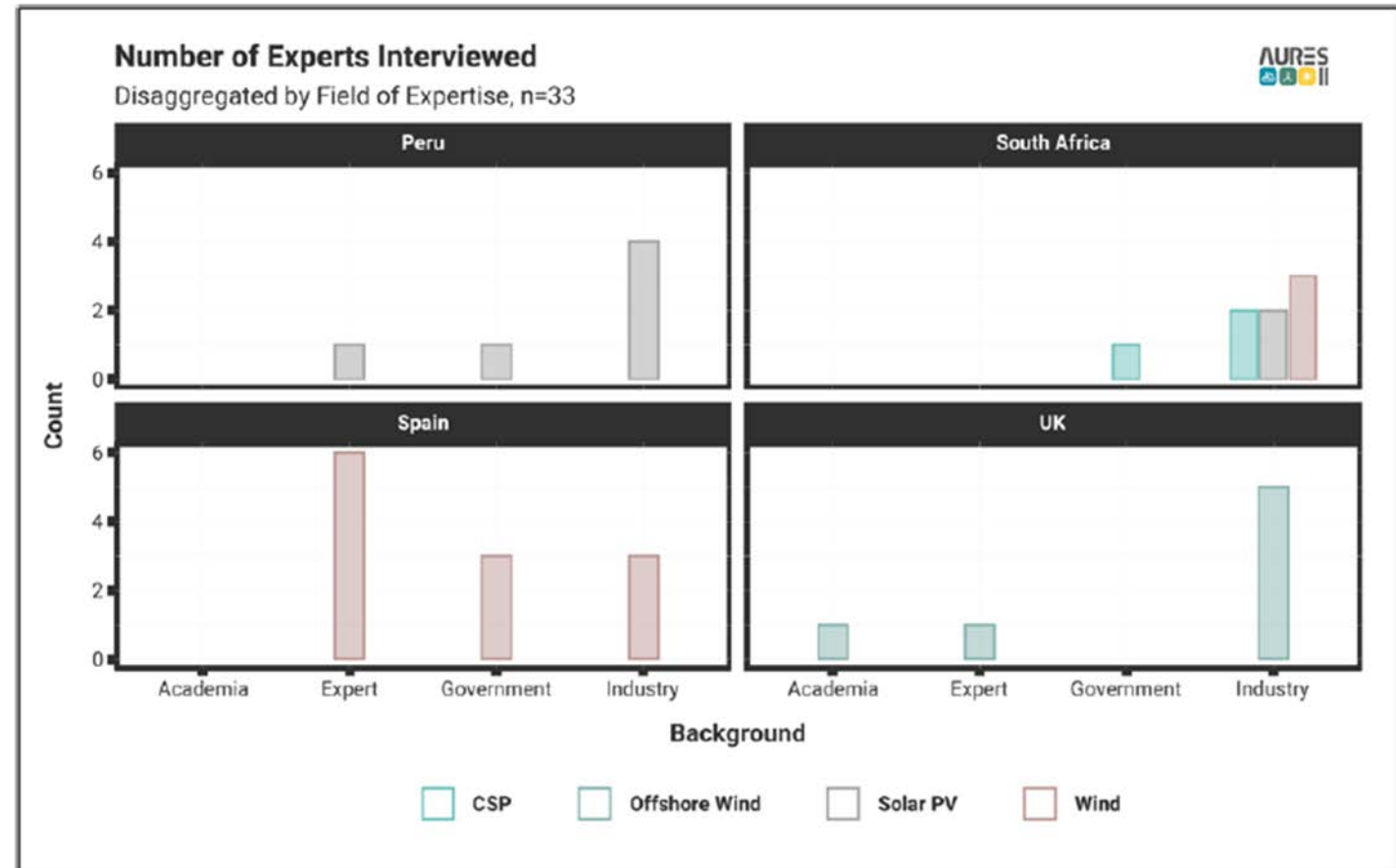




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## Methodology (III):

(33) Expert Interviews were completed during March – July 2020



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## Results and overall findings. Auction DEs.

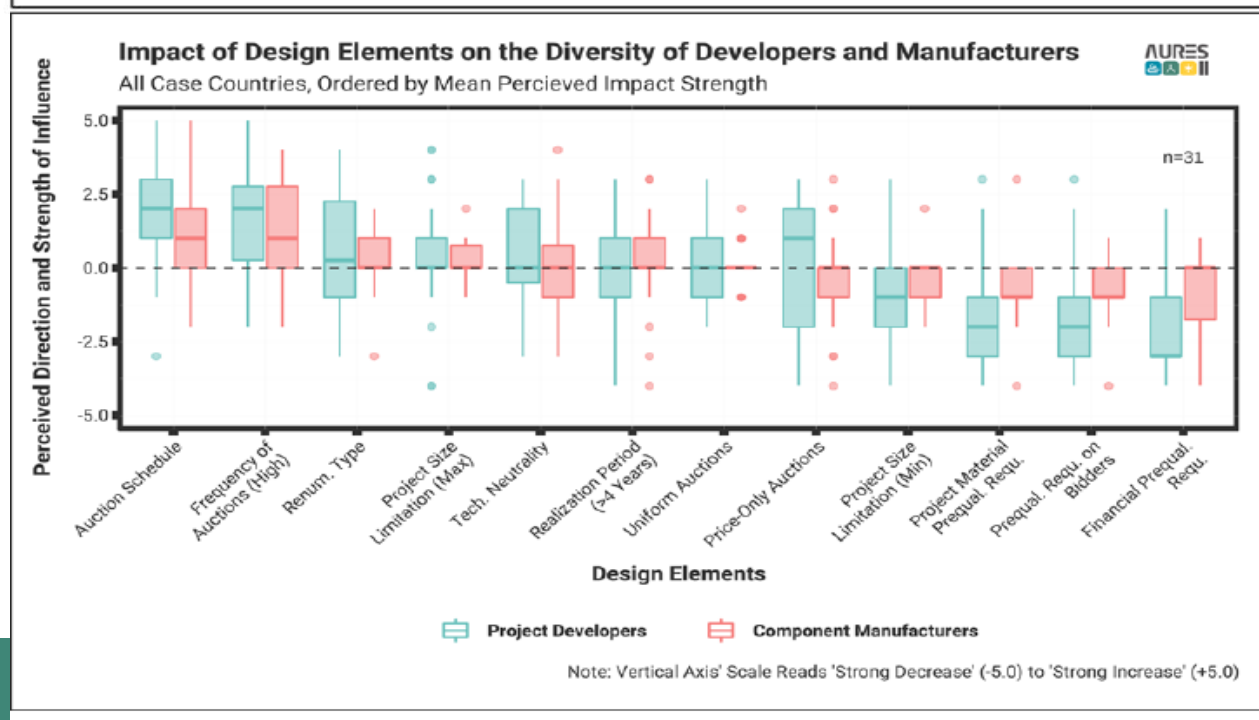
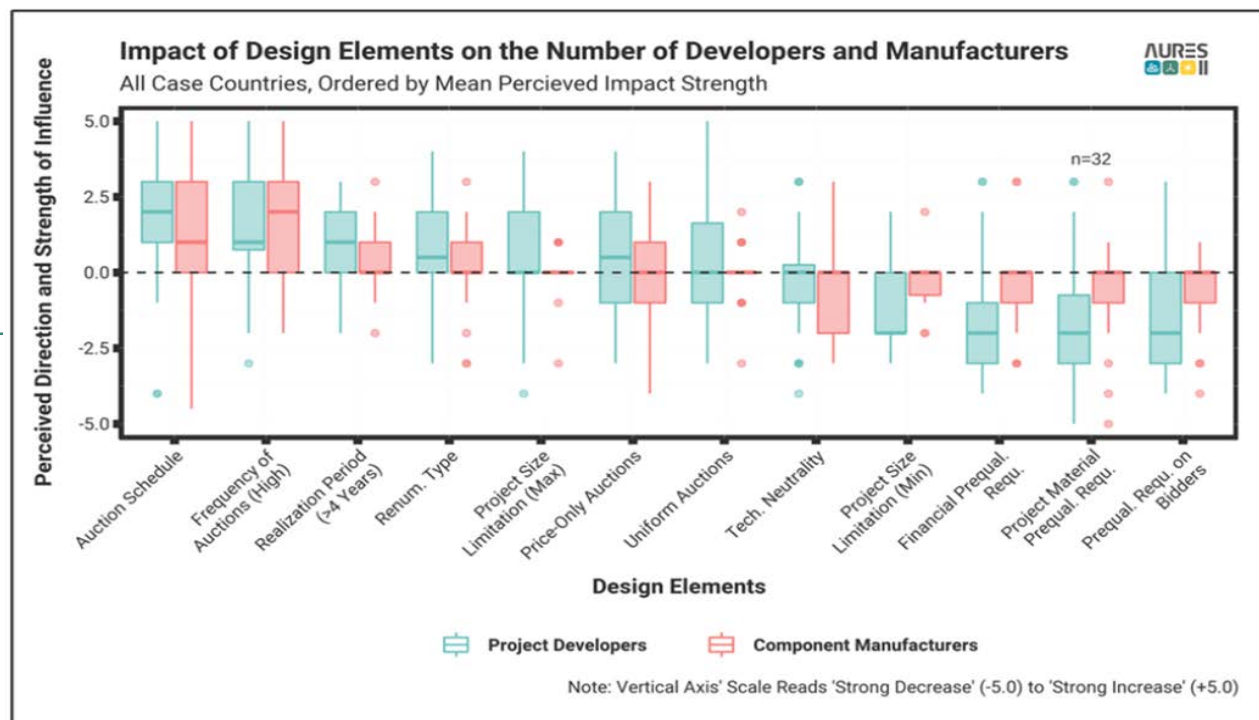
- Auctions and auction DEs have **a marked effect on the number and diversity of project developers and component manufacturers.**
- The expert elicitation process has established support for **the existence of impactful DEs that are expected to affect the number and diversity of project developers and component manufacturers.**
- Broadly speaking, **DEs tend to affect the value chains of the four considered countries in quite similar ways.**
- However, there are **substantial technology and country differences**, in line with our idea that the impact of auctions and auction DEs can be expected to be both RE technology-specific and country-specific.
- It is worthwhile underlining that **the DEs which tend to affect the n<sup>o</sup> and diversity of firms to a greater extent (i.e. the frequency of auction rounds, existence (or not) of a transparent schedule, and prequalification requirements), are the DEs that are most likely to get tangled up with non-auction policy areas.**

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## Results and overall findings

### Impact of DEs on the n<sup>o</sup> and diversity of firms

- **Some DEs appear to induce large impacts on the n<sup>o</sup> and diversity of firms, whereas others have a very modest influence.**
- The positive and negative impacts of specific DEs on the number and diversity of firms are perceived to be **more pronounced for project developers, than for component manufacturers.** The opposite is true for all kinds of prequalification requirements.



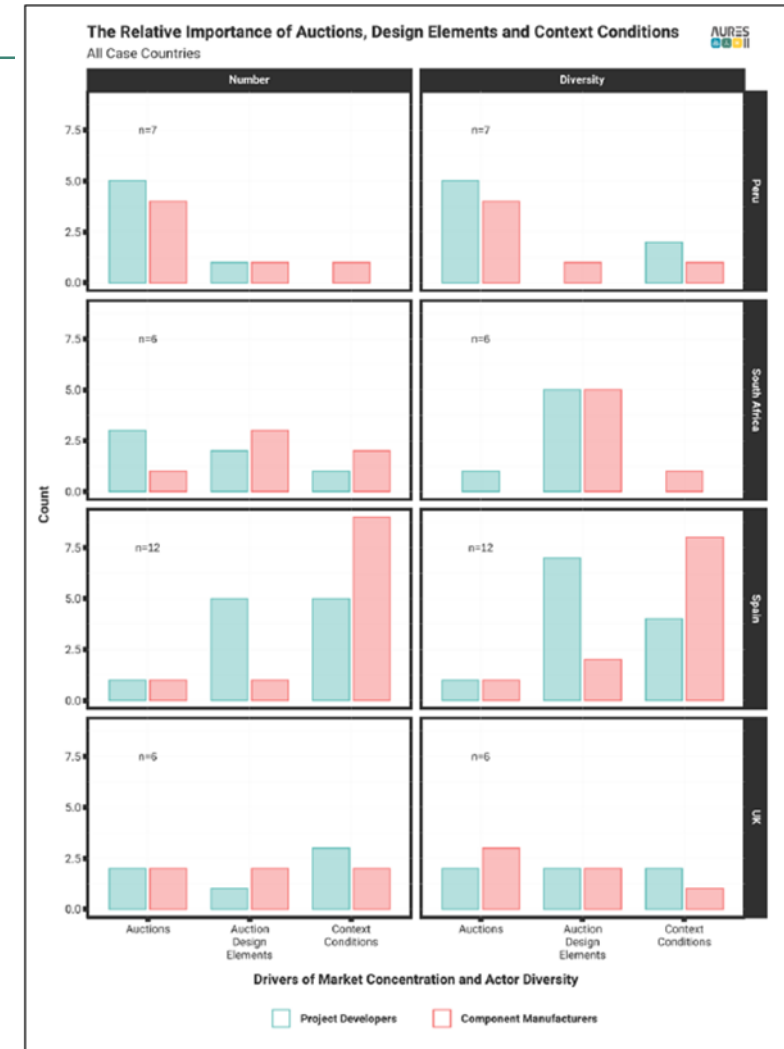


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## Results and overall findings (IV)

### The relative importance of auctions, design elements and context conditions

- Interviewed experts held **a range diverging views** as to whether auctions, auction DEs, or context conditions, are most important in terms of shaping the number and diversity of actors in the two value chain segments of interest
- The **perceived relative importance** of auctions, as compared to specific auction DEs and context conditions, **varies considerably between countries with respect to their impact on the n° and diversity of firms.**
- Confirms the assumption that **auctions themselves are by no means the major determinant of the n° 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.



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