

AURES II – Auctions for Renewable Energy Support II

AURES II online workshop on the impact of auctions on the
renewable energy sector

Virtual Workshop, 25 January 2021

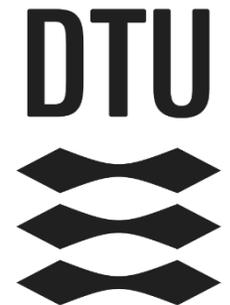
AURES II – an overview



AURES II – Auctions for Renewable Energy Support II

- Supported through Horizon2020 framework
- November 2018 – October 2021
- Coordination: Fraunhofer ISI, Germany
- Consortium: 11 institutions from 6 EU Member States + UK

AURES II – 11 institutions from 7 European countries



AURES II has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 817619

AURES II – our objectives



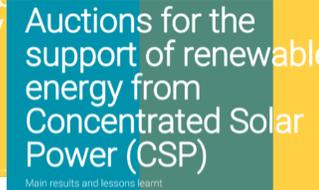
Generate and communicate new insights on the applicability, performance, and effects of **specific auction designs**

Provide **tailor-made policy support** for different types of auction applications

Facilitate **knowledge exchange** between stakeholders

AURES II – inform the discussion on renewable energy auctions

- 16 country case studies
- AURES II Auction Database
- Policy Briefs
- Reports on current topics
- Research papers
- Stakeholder workshops
- Country case cooperation



Year	Country	Technology	Capacity (MW)	Price (€/MWh)	Notes
2014	Germany	Wind	1000	100	...
2015	Germany	Wind	1000	100	...
2016	Germany	Wind	1000	100	...
2017	Germany	Wind	1000	100	...
2018	Germany	Wind	1000	100	...
2019	Germany	Wind	1000	100	...
2020	Germany	Wind	1000	100	...
2021	Germany	Wind	1000	100	...
2022	Germany	Wind	1000	100	...



Today's agenda



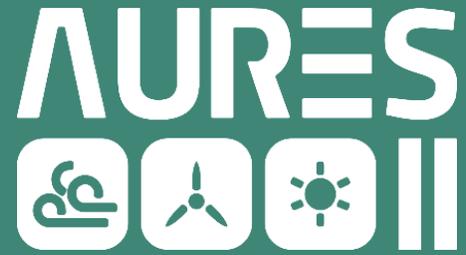
Time	Title	Speaker	Institution
10:00-10:05	Welcome	Vasilios Anatolitis /Pablo del Río	AURES II project coordinator Fraunhofer ISI / CSIC
10:05-10:15	Auctions and renewable energy communities	Ana Amazo	Guidehouse/Navigant
10:15-10:25	Empirical Analysis of the Impact of Auctions on the supply chains	Craig Menzies	Factor
10:25-10:50	Impact of auctions on technological innovation	Pablo del Río	CSIC
10:50-11:30	Discussion, Q&As	Pablo del Río	CSIC

Organizational issues



- Workshop will be recorded and published, but without the Q&A sessions
- If you have any questions (or want to provide feedback), you have two options:
 - Click on the “raise your hand” button in the software
 - **Type your questions in the question box**
- Content-related questions will be answered after each presentation, broader questions in the dedicated discussion session

➔ Looking forward to a fruitful and lively discussion!



Auctions and renewable energy communities

Findings of the AURES II project

Online Seminar, January 25, 2021

#1 Energy communities can take many forms and strive for different objectives

No widely accepted definition

- Core elements identified, but do not apply to all energy community actors:
 - Local proximity
 - Local (financial) ownership vs. participation in project development
 - Focus on community benefits

Definitions are important in targeting measures to energy communities

- Definitions can reduce the potential for non-intended use, but implementation is challenging: compliance evaluation can be cumbersome
- Broader definitions can be alternative to defining specific actors/business models for community actors
 - If targeting specific business models is the right fit, an option is to support outside the auction

Actor-based (“business model”)

Community involvement criteria (independent of actor/business model)

Germany’s citizen energy companies in wind auctions (in 2017)

France’s bonus for participatory funding

#2 Auction-related risks pose a strong challenge to energy community project developers due to their limited project portfolio and size



- For RECs: **Risks are higher than for non-community actors** due to higher level of effort required to cope with challenges, which inter alia depends on:
 - Expertise of REC (new to the market / one-time actor vs. experienced actor)
 - Activity of REC in project lifecycle (development, operation, ownership)
 - Level of cooperation with professional project developers and/or financiers
- However,
 - this only applies if RECs are involved in project development and participate in auction.

Before the auction		After the auction
Pre-development 	Auction date 	Construction 
<p>Financial risk: challenge to directly fund or acquire financing for project development</p>	<p>Risk of not being awarded: challenge to spread impact of sunk costs</p>	<p>Penalty risk: challenge to spread impact of financial penalty in case of construction delay or project failure</p>
<p>Financial risk: challenge to directly pay or acquire financing for bid bond</p>	<p>New-bidder risk: challenge in dealing with formal mistakes</p>	
	<p>Price risk: challenge to calculate bid level</p>	

#3 Measures within the auction can facilitate participation but come at the compromise of market distortion



	Measures inside the auction		
	Other conditions for participation	Bonus or quota	Different pricing rule
Country example	Preferential auction rules in Germany	Citizen participation bonus in France	Uniform pricing rule in Germany
Financial risk			
Allocation risk	✓	✓	
Price risk			✓
New-bidder risk			
Non-compliance risk	✓		
Non-realization risk			

Challenges

Measures can have **adverse effects on auction outcomes**

Preferential auction rules in Germany → auctioning of projects in different development stages increases non-realization risk

Bonus or quota → auction price level higher

#4 Measures outside the auction interfere less with the auction but show limited impact against actor consolidation trend



	Measures outside the auction	
	Financing for project pre-development	"Market building" measures (open to all bidders)
Country example	Guarantee Fund in Denmark	Several countries introducing auctions
Financial risk	✓	
Allocation risk	✓	
Price risk		
New-bidder risk		✓
Non-compliance risk		
Non-realization risk		

Challenge

Limited effectiveness in reversing a trend towards overall actor consolidation

Guarantee Fund in Denmark

Community energy projects have not yet participated in past auction rounds (Caveat: limited experience due to few rounds)

Similar measures promoting community energy actors → "option-to-purchase" and "value-loss" scheme

#5 Exempting energy communities and coupling support to auction result can be a compromise, but should be done carefully



Exemptions from auction is at odds with overall transition to auction-based support schemes

→ “Accession mechanism” (granting access to the auction outcome) lowers risks of participating and winning an auction and increases compatibility with auction outcome

Spain: accession mechanism with quota, first-come, first-served allocation (in discussion)

Country examples

Greece: Since 2019, admin. tariff for solar projects: average of past 3 rounds * 1.05 (multiplied by 1.1 for energy community projects).

Finding an appropriate legal definition for RECs to qualify for the exemption is a challenge

Considerations

Project-based definitions (size) provide incentive to develop small projects, instead of larger, more cost-effective projects

Five things to remember

#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.



Opening of community turbine – Fintry, Scotland (Source: Peter Skabara – Community Energy)

Thank you

The report was prepared under the AURES II project funded by the EU Research Program Horizon 2020.

Download the report here:

[http://aures2project.eu/wp-content/uploads/2020/02/AURES II D4 2 energy communities.pdf](http://aures2project.eu/wp-content/uploads/2020/02/AURES_II_D4_2_energy_communities.pdf)

Ana Amazo – Guidehouse (formerly Navigant/Ecofys)

A decorative horizontal bar at the bottom of the slide, divided into three colored segments: teal on the left, green in the middle, and yellow on the right.



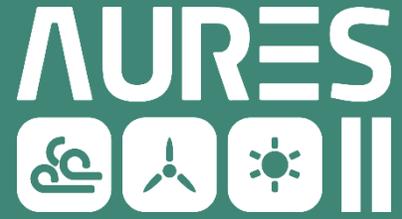
Ana Amazo
Guidehouse (formerly Navigant/Ecofys)
ana.amazo@guidehouse.com

AURES II

Website: <http://aures2project.eu/>
LinkedIn: AURES II
Twitter: @auctions4res
Newsletter: <http://eepurl.com/gd42zz>



AURES II has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 817619



Empirical Analysis of the Impact of Auctions on the Supply Chain

Craig Menzies

FACTOR

AURES II – Work Package 4 workshop
25 January 2021



AURES II has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 817619

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



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^0 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.

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



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.

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

Methodology (I)

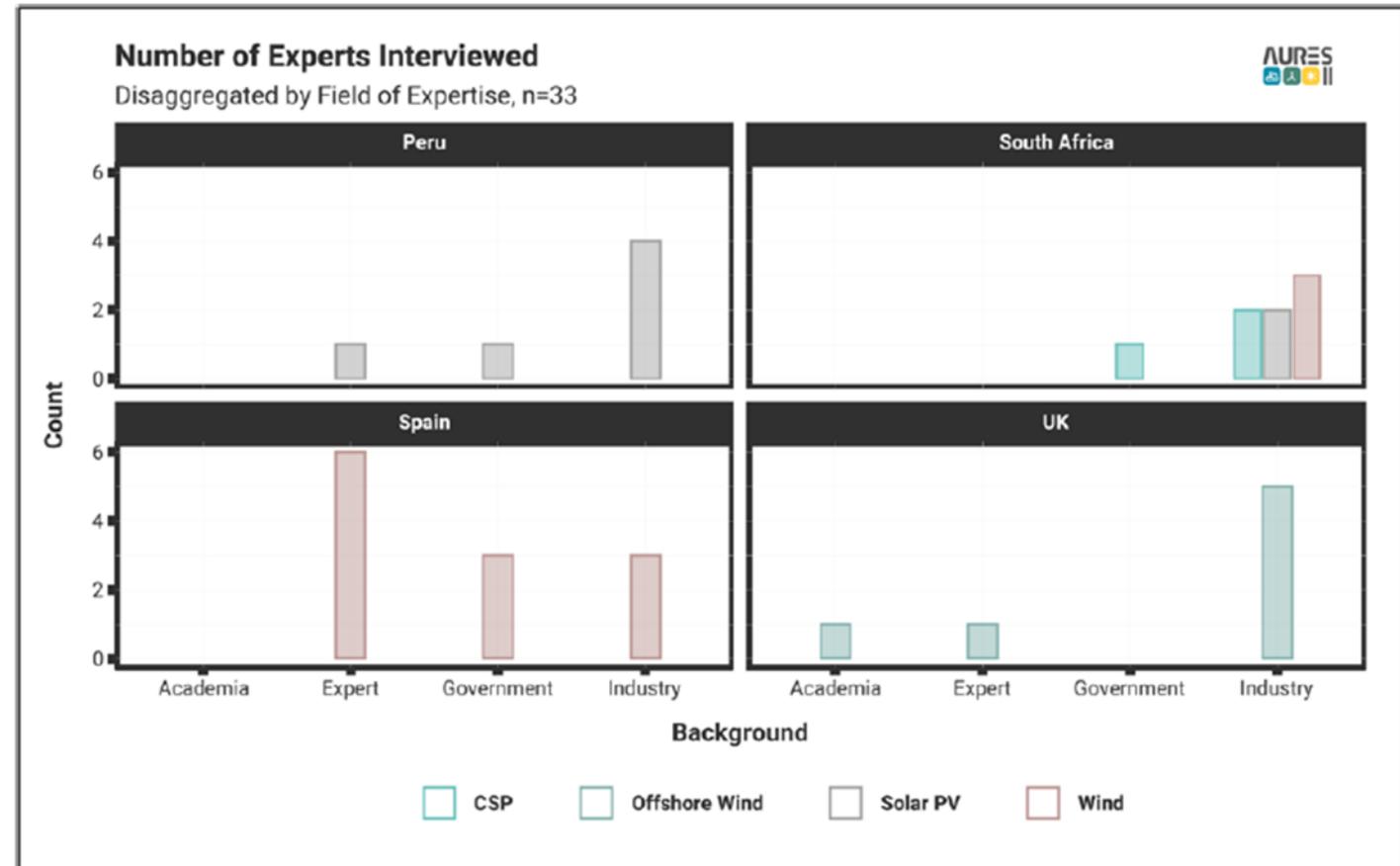
- Structured interviews with key experts (stakeholders / actors) from the RES sectors of four countries. An Expert Elicitation-based approach.
- Focus on two stages (project developers and component manufacturers).
- Focus on four technologies (on-shore wind, off-shore wind, solar PV and CSP).
- Case 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*.



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

Methodology (III):

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



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



Results and overall findings. Auction DEs.

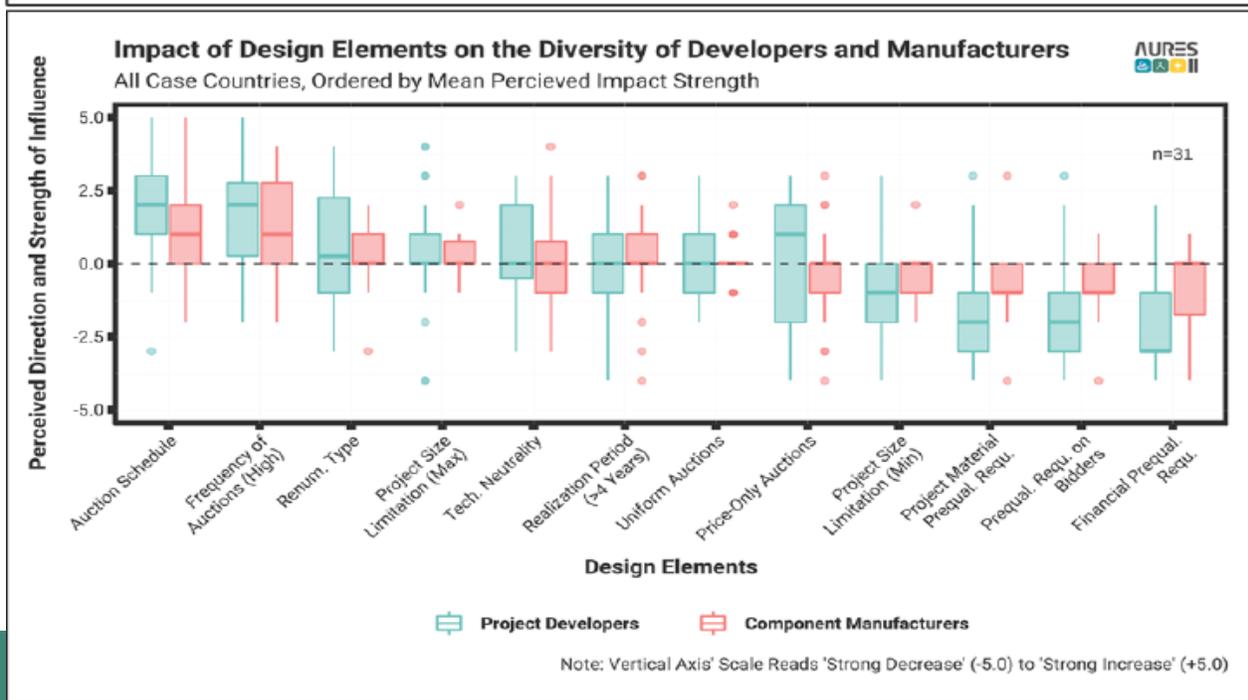
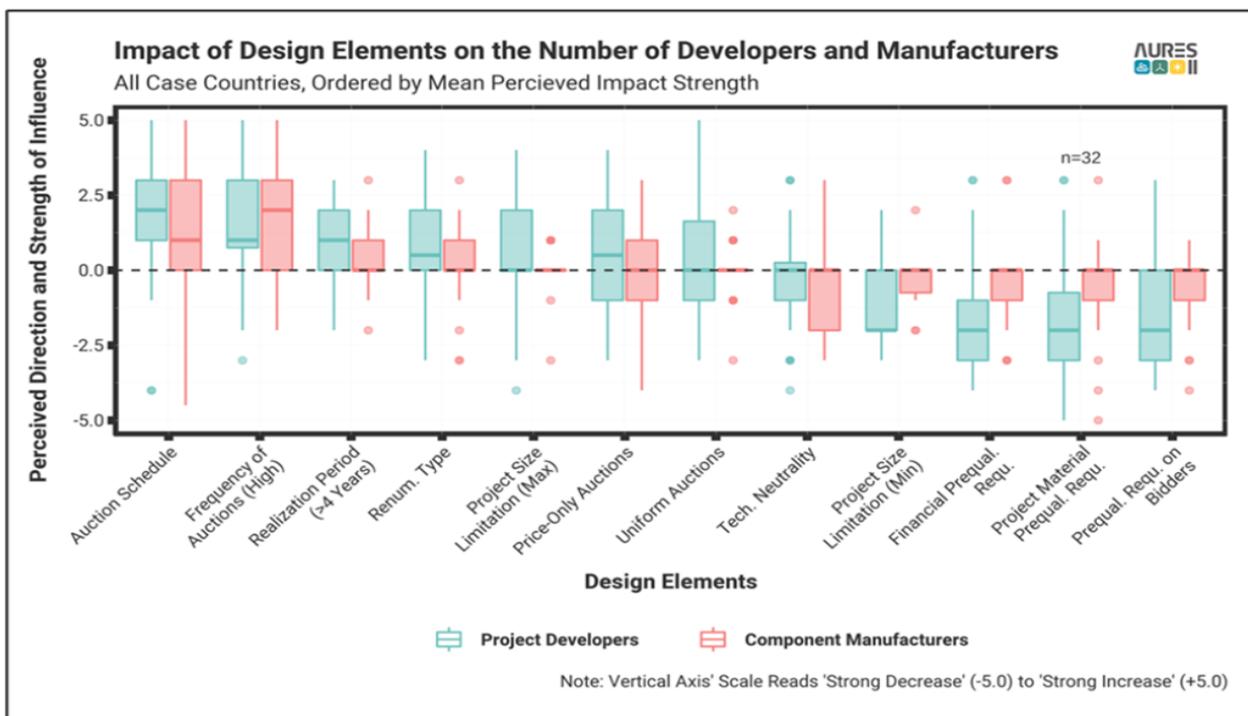
- Auctions and auction DEs have a marked effect on the number and diversity of project developers and component manufacturers.
- The expert elicitation process has established support for the existence of impactful DEs that are expected to affect the number and diversity of project developers and component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

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

Results and overall findings

Impact of DEs on the n^o and diversity of firms

- Some DEs appear to induce large impacts on the n^o 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.

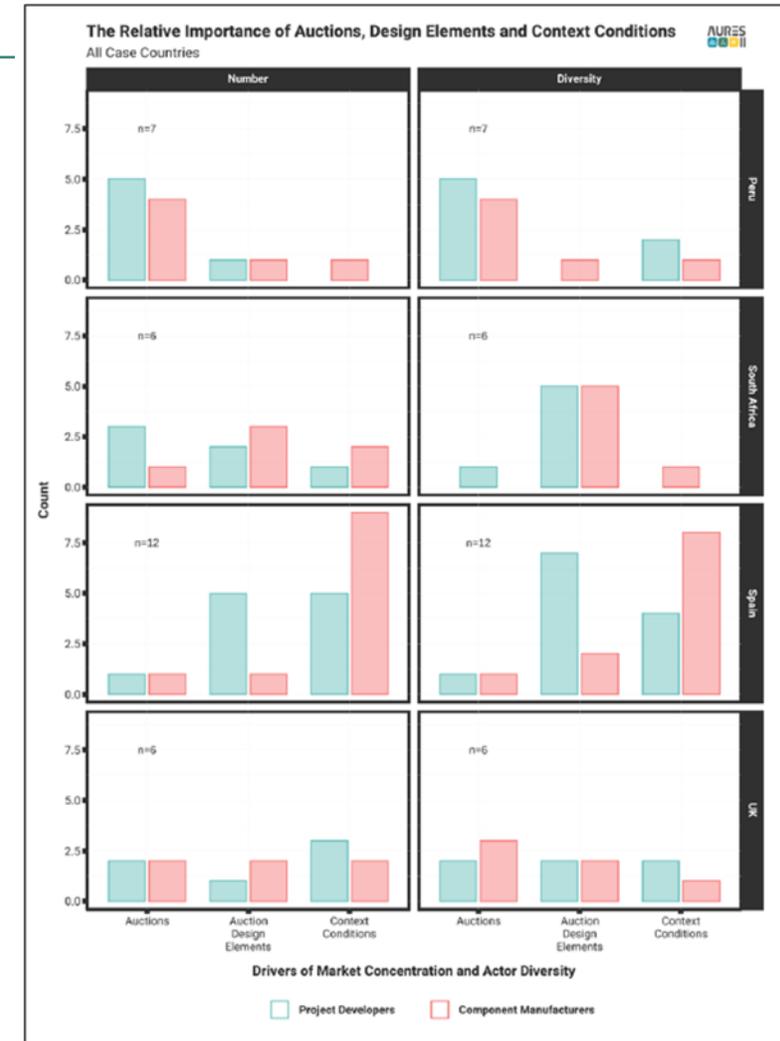


Task 4.2. Empirical Analysis of the Impact of Auctions on the supply Chains

Results and overall findings (IV)

The relative importance of auctions, design elements and context conditions

- Interviewed experts held a range of 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^o and diversity of firms.
- Confirms the assumption that auctions themselves are by no means the major determinant of the n^o 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.





Craig Menzies

FACTOR

cmenzies@iamfactor.com

AURES II

Website: <http://aures2project.eu/>

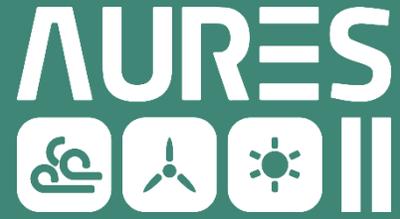
LinkedIn: AURES II

Twitter: @auctions4res

Newsletter: <http://eepurl.com/gd42zz>



AURES II has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 817619



The impact of auctions on technological innovation

Pablo del Río

CSIC

AURES II – Work Package 4 workshop
25 January 2021



AURES II has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 817619

INDEX



Objective

1. Introduction
2. Auction design elements
3. The sources of RET innovation and feedbacks from diffusion
- 4 . The innovation effects of renewable energy deployment policies: a literature review
5. Relating RES auctions and innovation effects on RETs
6. Methodology.
7. Results of the case study
8. Conclusions

1. Introduction

Task 4.3: Impact of auctions on technological innovation

Objective

- Impact of auctions on technological innovation
- Impact of auctions design elements on technological innovation.

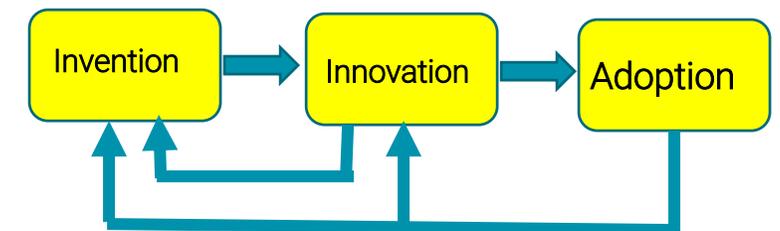
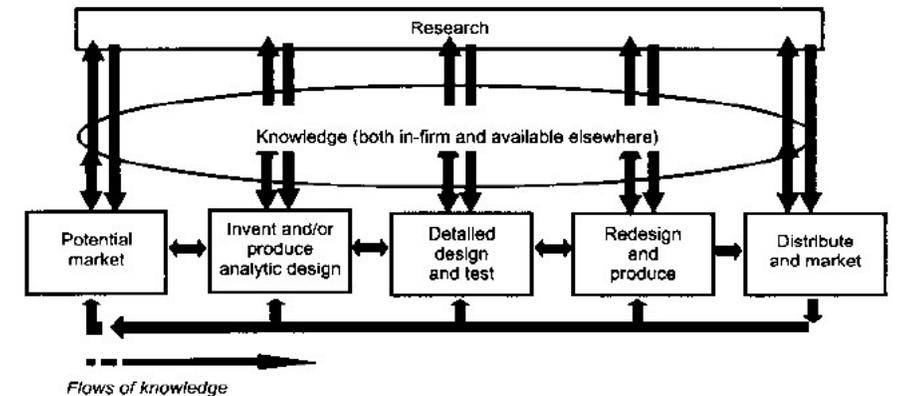
AIM: to provide a comprehensive **analytical framework** and **some propositions** on the links between auctions and technological innovation (an exploratory study).

1. Introduction

- **Starting point:**

- Innovation in general and, more specifically, innovation in renewable energy technologies (RETs) will be a critical component of the energy transition (IEA 2020).
- Three main stages: invention, innovation and diffusion.
 - The linear model vs. the chain-linked model.
- Supply-push vs demand-pull instruments.
- Demand-pull instruments to support the diffusion (deployment) of technologies, such as auctions or administratively-set support, may have an impact on previous stages of the technological change process.
 - Auctions can have an indirect impact on innovation in RETs through their effects on the diffusion of these technologies.

Chain-Link Model of Innovation, Kline, 1986



Innovation: an invention with an economic value which is ready to be adopted by the market.

1. Introduction

Motivation: The research gap.

- The lack of research on the topic, existence of data availability problems and the qualitative character of this issue.
- Exploratory analysis: Based on literature reviews and exchanging views with stakeholders on the main aspects (variables, relationships between variables and causal links).

2. Design elements

Volume	Generation, capacity or budget
	Disclosure (vs. non-disclosure)
Schedule (vs. non-schedule)	
Frequency: high (vs. low)	
Diversity	Technology-neutral (vs. technology-specific)
	Geographically-neutral (vs. geographically-specific)
	Actor-neutral (vs. actor-specific)
	Size-neutral (vs. maximum size)
	Size-neutral (vs. minimum size)
Prequalification (stringency)	Material prequalifications on projects
	Material prequalifications on project developers
	Financial prequalifications
Seller concentration rules (vs. their absence)	
Local content rules: local industry (vs. their absence)	
Local content rules: local employment (vs. their absence)	
Information provision	
Remuneration type: generation (vs. capacity)	
Remuneration type (FIT, fixed FIP, sliding FIP)	
Selection criteria: price-only (vs. multicriteria).	
Auction format: multi-item (vs. single-item).	
Auction type: static (vs. dynamic)	
Pricing rule: PAB (vs. uniform)	
Ceiling prices	Existence (vs. absence)
	Disclosure (vs. non-disclosure)
Realisation period (vs. absence)	
Minimum participation conditions (vs. their absence)	

3. The sources of innovation in RETs: impacts from diffusion.

Innovation mechanisms from diffusion:

- Learning effects
- Market creation.**
- Private R&D investments: reinvestment of profits.**
- Competitive pressure.**
- Knowledge spillovers.

In turn, these mechanisms are triggered by **policy factors**:

- policy framework conditions,
- specific instruments (deployment support + RD&D support)
- Specific deployment instruments (auctions...)
- design elements in those instruments.

...as well as **non-policy factors**...

4. The innovation effects of renewable energy deployment policies: a literature review.



(I) The literature on the innovation effects of deployment support.

- 28 papers. Quantitative/qualitative.
- Low level of granularity
 - The empirical analyses are too broad and usually do not descend to the level of the effects of different types of deployment instruments.
 - R&D support vs. deployment support / Price-based and quantity-based deployment instruments.
- Few analysis on auctions (theoretical/qualitative)
- The influence of different design elements is only addressed in a few contributions (but not with respect to auctions) in the theoretical literature, and it is absent in the empirical one.
- Very limited results: price-based instruments generate more innovation effects than quantity-based ones. Mature vs. less mature technologies.

4. The innovation effects of renewable energy deployment policies: a literature review.



(II) The literature on technological innovation systems (TIS).

- 59 papers.
- Only a few references on the influence of auctions on market creation in the TIS literature, which is deemed a negative one.
 - a consequence of an instrument for which deployment is capped.
 - the result of greater transaction costs for entrepreneurs and delays
 - or technology-neutral auctions discouraging the award for less mature technologies
- The functioning of auctions in the policy mix has not been the focus of research in the TIS literature, and should be investigated in the future. Therefore, those negative effects should be regarded as preliminary and taken with caution.

5. Relating RES auctions and innovation effects on RETs.



- Linking the innovation literature and auctions: **mechanisms on the influence of auctions on innovation.**
- Impact of **auctions** on technological innovation (vs. administratively-set remuneration and no support).
- Impact of different auction **design elements** on technological innovation (vs. alternatives).
- Impact of **other factors** on technological innovation and relative importance of auctions in this regard.

← INVESTORS (developers) →

← MANUFACTURERS →

Policy framework conditions (targets + stability)

Other factors

AUCTIONS and auction design elements

Factors influencing project investors:

1) Risks

2) Incentive to:

Maximise revenue
Δ AEP

Minimise costs
Δ CAPEX
Δ OPEX

> competition

< profit margins

< market creation

> Willingness to invest in R&D

< ability to invest in R&D

> Willingness / ability to invest in R&D

Private R&D investments (manufacturers)

LBD**

Total knowledge stock

Domestic public R&D

knowledge Stock abroad

TECHNOLOGICAL INNOVATION*

* New and improved products and processes
** learning by doing



5. Relating RES auctions and innovation effects on RETs.

The innovation effects of auctions vs. administratively-set support

Innovation mechanisms		General assessment
Learning effects		<
Willingness and ability of equipment manufacturers to invest in R&D	Profit margins	<
	Market creation	<
	Competitive pressure	>
Total		?

5. Relating RES auctions and innovation effects on RETs.

The innovation effects of different auction design elements.

Design elements		Learning effects	Profit margins	Market creation	Competitive pressure	Expected impact on innovation	
Category	Alternatives					Net (positive) impact	Expected degree of impact
Volume	Generation, capacity or budget	GEN and CAP (+), BUD (-)	=	CAP (++) , GEN (+), BUD (-)	=	Capacity (generation)	Small
	Disclosure (vs. non-disclosure)	+	Slightly -	+	Slightly -	Disclosure	Small
Schedule (vs. non-schedule)		++	=	++	?	Schedule	High
Diversity	Technology-neutral (vs. technology-specific)	+ (more mature) -(less mature)	+ (more mature) -(less mature)	+ (more mature) -(less mature)	+	Neutral (more mature) Specific (less mature)	High
	Geographically-neutral (vs. geographically-specific)	=	?	=	+	Neutral	Small
	Actor-neutral (vs. actor-specific)	=	? (depends on the specific design)	=	? (depends on the specific design)	? (depends on the specific design)	Small
	Size-neutral (vs. maximum size)	Slightly -	-	Slightly -	+	?	Small
Prequalification (stringency)	Material prequalifications on projects (vs. non-stringent)	+	-	+	-	?	Medium
	Material prequalifications on project developers (vs. non-stringent)	+	-	+	-	?	Medium
	Financial prequalifications (vs. non-stringent)	+	-	+	-	?	Medium

5. Relating RES auctions and innovation effects on RETs.

The innovation effects of different auction design elements.

Design elements		Learning effects	Profit margins	Market creation	Competitive pressure	Expected impact on innovation	
Category	Alternatives					Net (positive) impact	Expected degree of impact
Seller concentration rules (vs. their absence)		?	-	+	+	?	Small
Local content rules: local industry (vs. their absence)*		=	+	?	-	?	Medium
Local content rules: local employment (vs. their absence)		-	=	=	=	?	Small
Information provision		Slightly +	+	+	+	Information provision	Small
Remuneration type: generation (vs. capacity)		=	=	+	=	Generation-based remuneration	Medium
Remuneration type (FITs, fixed FIPs, sliding FIPs)		1. FIT; 2. Sliding FIPs; 3. Fixed FIP	?	1. FIT; 2. Sliding FIPs; 3. Fixed FIP	1. Fixed FIP 2. Sliding FIPs; 3. FIT	?	Medium
Selection criteria: price-only (vs. multicriteria).		=	+	+	+	Price-only	Medium
Auction format: multi-item (vs. single-item).		=	=	+	=	Depends on technology	Small
Auction type: static (vs. dynamic)		-	-	-	+	Dynamic?	Small
Pricing rule: PAB (vs. uniform)		?	?	?	?	?	Small
Ceiling prices	Existence (vs. absence)**	=	=	=	=	?	Small
	Disclosure (vs. non-disclosure)	=	=	=	=	?	Small
Realisation period with an appropriate length (vs. their absence or too long)		+	=	+	=	Realisation period (set with an appropriate length)	Small
Frequency: high (vs. low)		=	=	+	=	High frequency	Small
Minimum participation conditions (vs. their absence)		=	?	=	+	Minimum levels of participation	Small

5. Relating RES auctions and innovation effects on RETs.

Research proposals:

- Auctions and auction design elements influence innovation through their indirect impact on manufacturers and technology developers.
- Four main channels:
 - (i) impact on private R&D through a greater profit margin.
 - (ii) the expectation that there will be a market for the technology (i.e., where manufacturers and technology developers can sell their technology),
 - (iii) impact on technology diffusion and
 - (iv) impact on the competitive pressures faced by manufacturers and technology developers to reduce costs or increase revenues.
- Opposing effects (market creation/profit margins vs. competition effects).
- Auctions will be one of the factors influencing innovation in RETs, but probably not the main one. Many other non-policy and policy factors influence innovation (technology-push policies, international competition in a globalised sector).
- Different design elements in auctions have different impacts on innovation. Some design elements discourage them, others encourage them and yet others do not have any impact.

6. Methodology

- The purpose of the empirical analysis is to confirm the set of research proposals on the mechanisms linking auctions and innovation in RETs and the relative importance of other (non-auction) factors in driving innovation.
- Qualitative case study research.
- Focus on R&D (instead of patents) and the micro-level (instead of the macro-level).
- Expert consultation.
- Time focus of the analysis

6. Methodology.

- A questionnaire to main experts knowledgeable of the link between auctions and innovation in RETs on their perception of the topic and the relationships between the different variables.
- 19 experts completed the questionnaire and sent them back to the authors between Nov. and Dec. 2020.
- A wide array of different experts were contacted: technology platforms (2 experts), different Spanish renewable energy associations (5), project developers (3), academic experts (6), a think tank, a non-academic expert and one manufacturer.
- The questionnaire focused on either RETs in general (8 completed questionnaires) or specific technologies (3 for wind, 3 for PV, 4 for CSP and 1 for biomass).

6. Methodology.

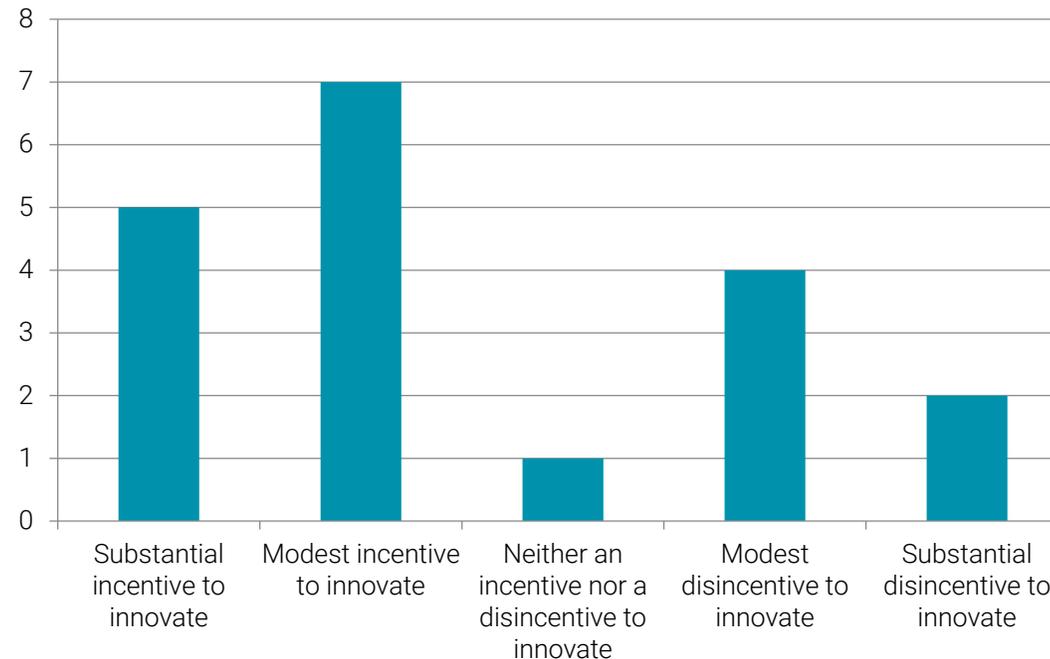
Five blocks of the questionnaire:

- Block 0. Confidentiality clause, objective and definition of technological innovation.
- Block 1: Comparative influence of auctions with respect to other policy options.
- Block 2. Influence of auctions on the deployment-related drivers of innovation.
- Block 3. Impact of different design elements.
- Block 4. Influence of different factors on technological innovation in RETs.

7. Results of the case study.

- Block 1: Comparative influence of auctions with respect to other policy options.

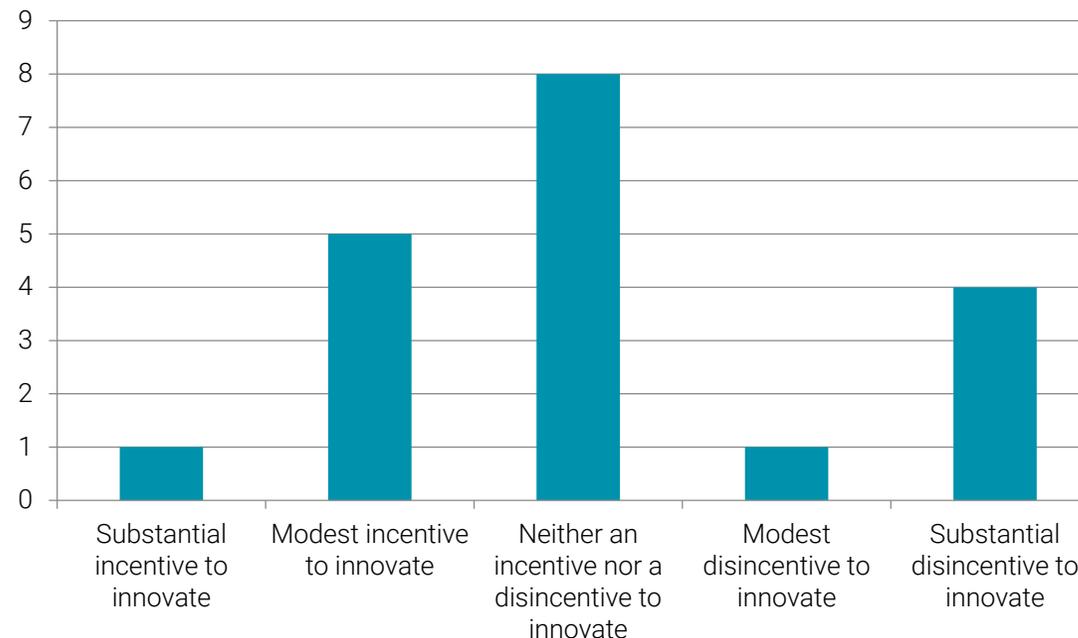
The impact of RES auctions on technological innovation in RETs in Spain with respect to ASR.



7. Results of the case study.

- Block 1: Comparative influence of auctions with respect to other policy options.

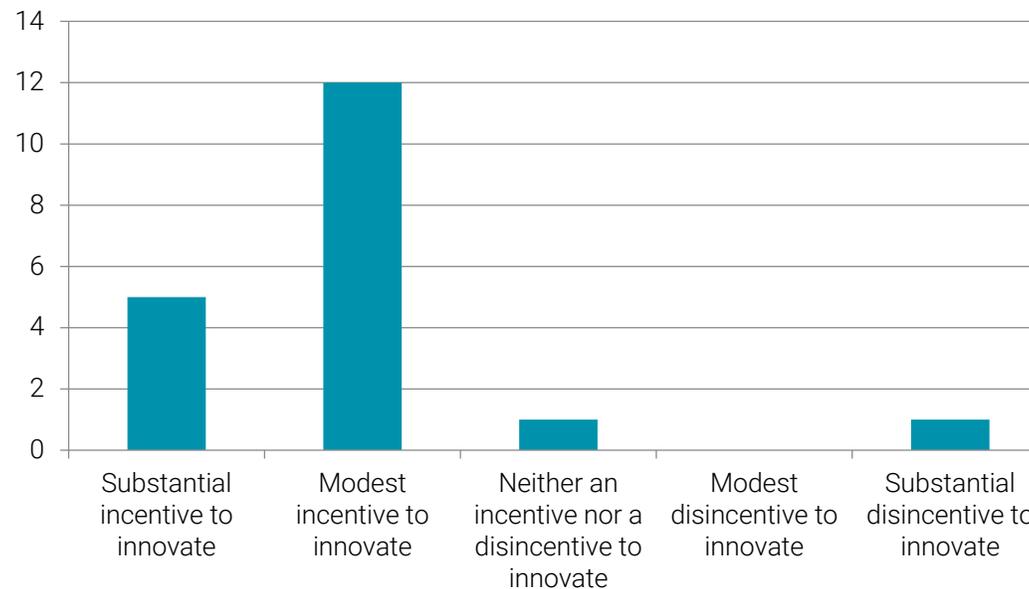
The impact of past RES auctions in Spain on technological innovation in RETs in Spain (with respect to ASR).



7. Results of the case study.

- Block 1: Comparative influence of auctions with respect to other policy options.

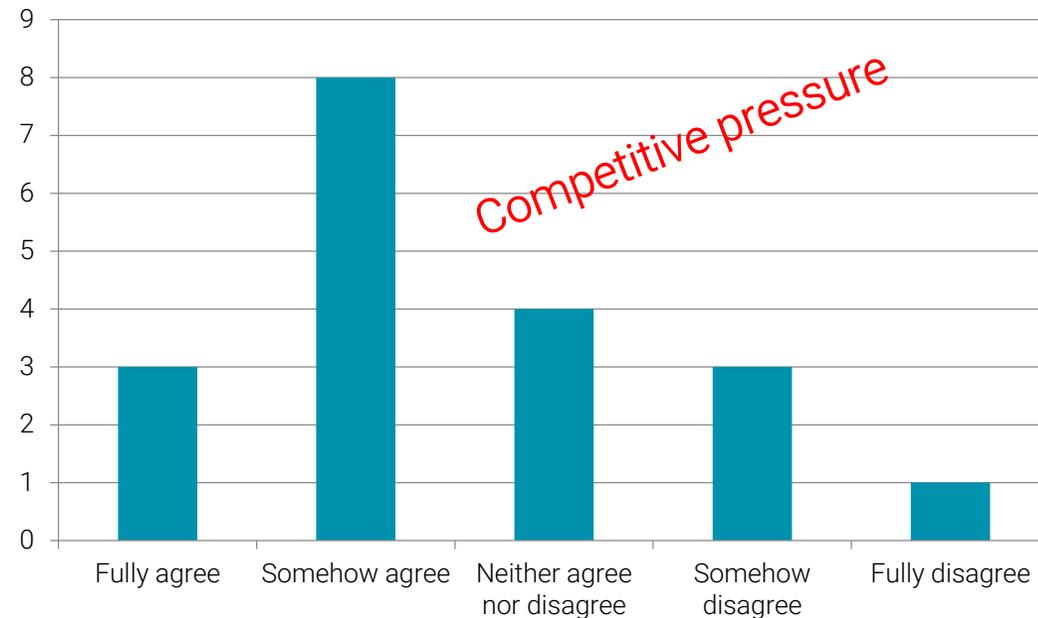
Expected impact of RES auctions on technological innovation in RETs in Spain in the future with respect to the absence of support.



7. Results of the case study.

- Block 2. Influence of auctions on the deployment-related drivers of innovation.

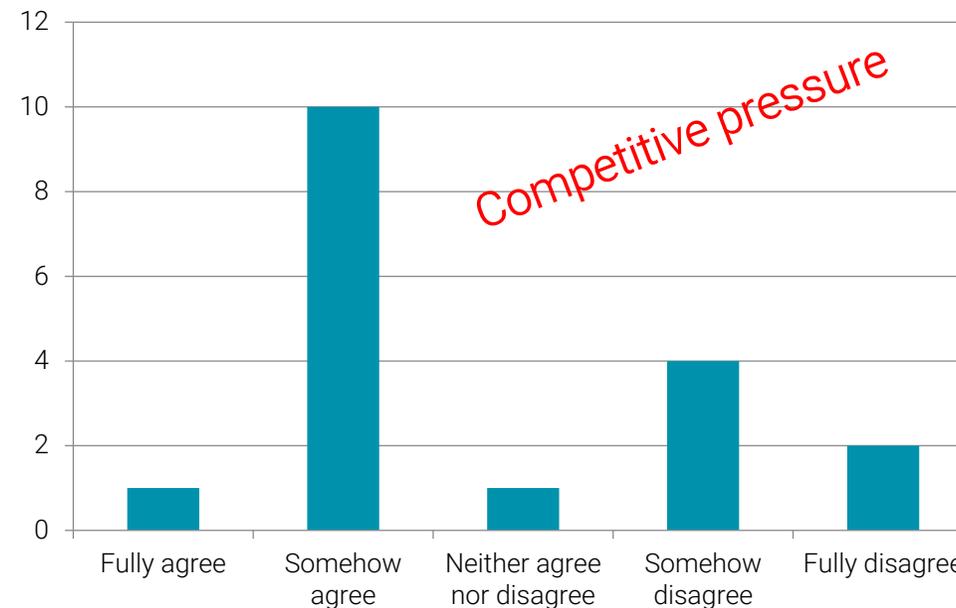
The influence of auctions on the “competitive pressure” deployment-related driver of innovation (with respect to ASR).



7. Results of the case study.

- Block 2. Influence of auctions on the deployment-related drivers of innovation.

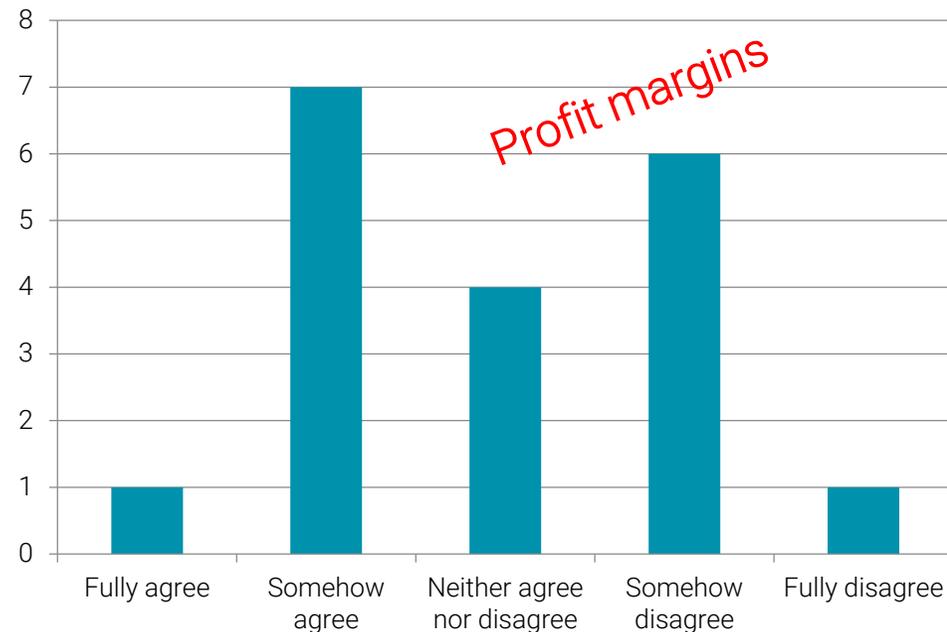
The influence of auctions on the “competitive pressure” deployment-related driver of innovation (with respect to the absence of support).



7. Results of the case study.

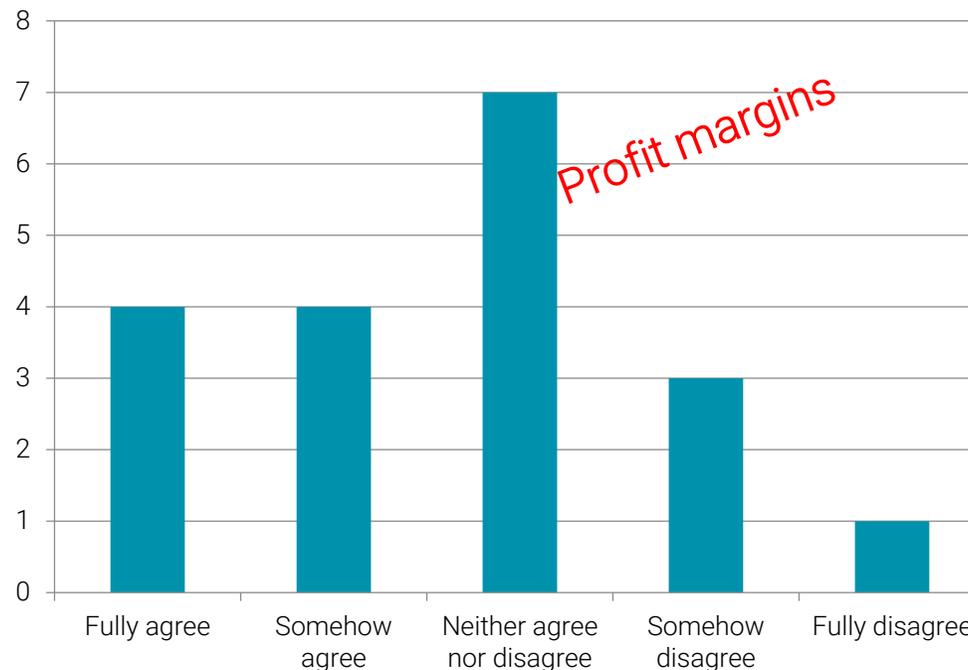
- Block 2. Influence of auctions on the deployment-related drivers of innovation.

The influence of auctions on the “profit margins” deployment-related driver of innovation (with respect to ASR).



7. Results of the case study.

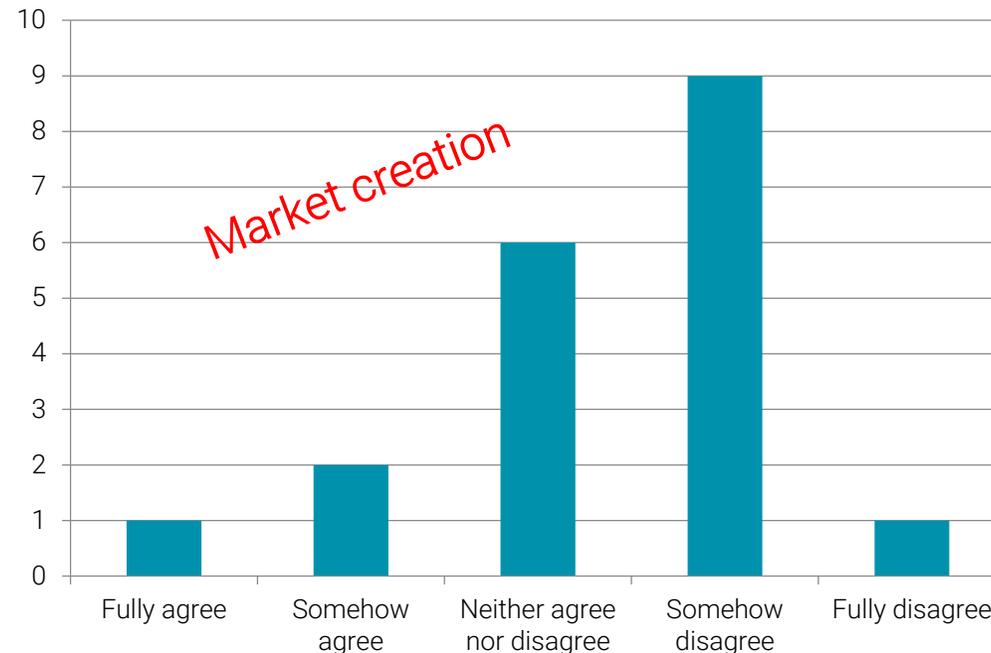
- Block 2. Influence of auctions on the deployment-related drivers of innovation. The influence of auctions on the “profit margins” deployment-related driver of innovation (with respect to the absence of support).



7. Results of the case study.

- Block 2. Influence of auctions on the deployment-related drivers of innovation.

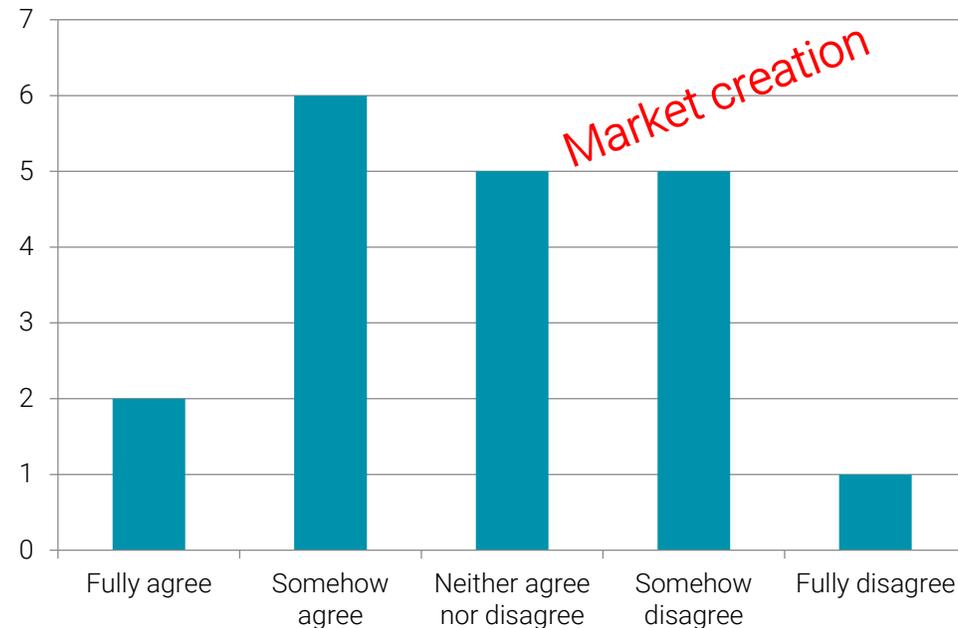
The influence of auctions on the “market creation” deployment-related driver of innovation (with respect to ASR).



7. Results of the case study.

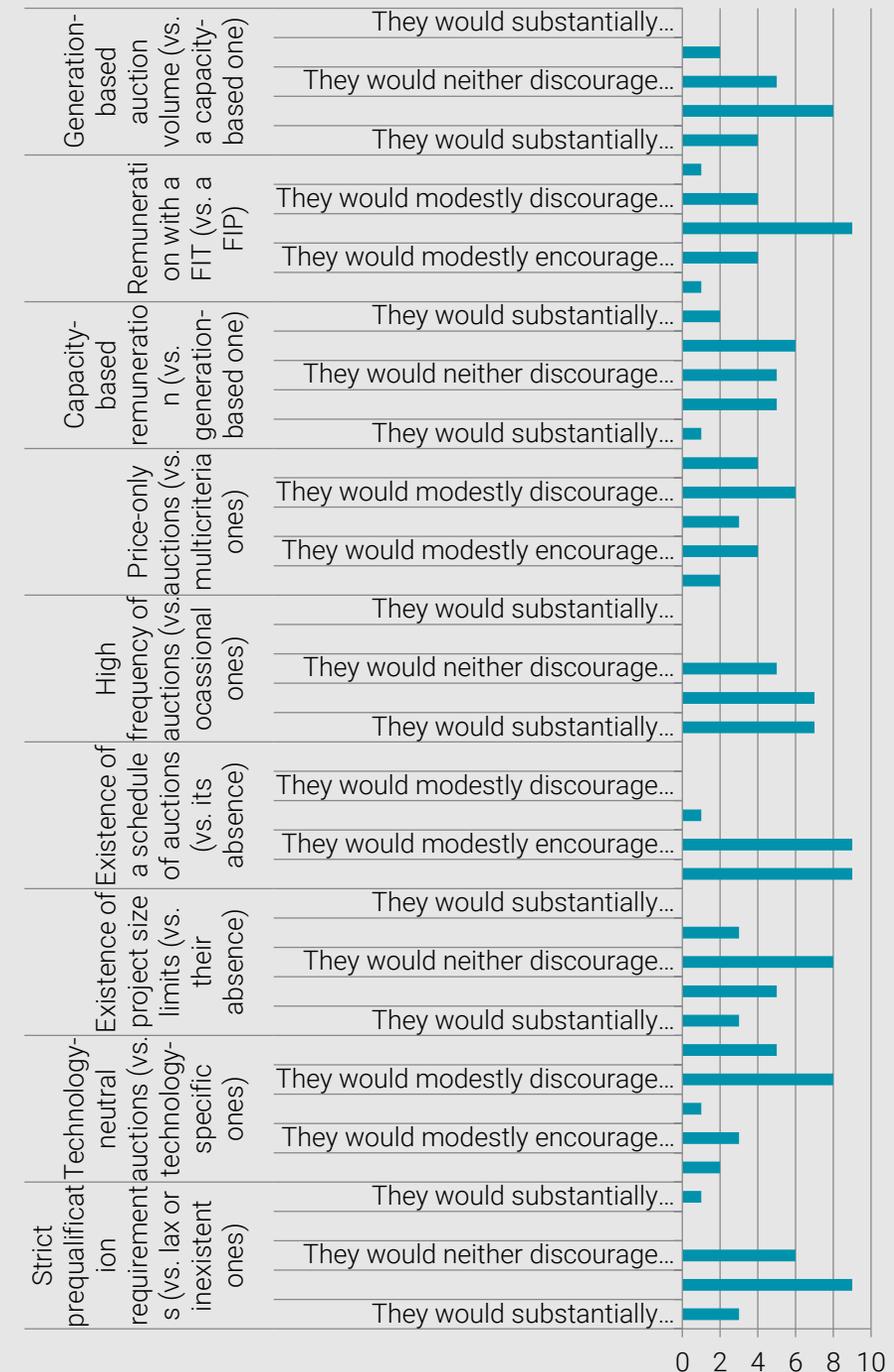
- Block 2. Influence of auctions on the deployment-related drivers of innovation.

The influence of auctions on the “market creation” deployment-related driver of innovation (with respect to the absence of support).



7. Results of the case study.

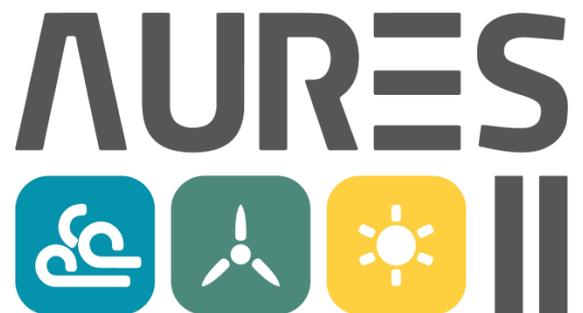
- Block 3. Impact of different design elements.
Overall, the most influential design elements on technological innovation:
 - the stringency of prequalification requirements,
 - technological neutrality,
 - a schedule of auctions,
 - highly frequent auctions



8. Conclusions

- The literature on the innovation effects of auctions is extremely tiny.
- An analytical framework on the mechanisms linking diffusion-driven technological innovation and auctions and their design elements has been provided.
- The perception of key stakeholders on the topic has been identified
- Some research proposals to be investigated in future research have been put forward.
- Substantial methodological challenges in future in-depth empirical analyses on this topic.

Thank You



Pablo del Río, CSIC

AURES II

Website: <http://aures2project.eu/>
LinkedIn: AURES II
Twitter: @auctions4res
Newsletter: <http://eepurl.com/gd42zz>



AURES has received funds for the years 2018-2021 from the European Union's Horizon 2020 research and innovation programme under grant agreement no. 817629