AURES PROJECT

Interactive policy tool
Lessons learnt and best practices on implementing auctions in Europe & beyond

Silvana Tiedemann

ECOFYS
A Navigant Company

Overview

- Auction tools of the AURES‘ project

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- Auction tools of the AURES‘ project
- The auction design process in context

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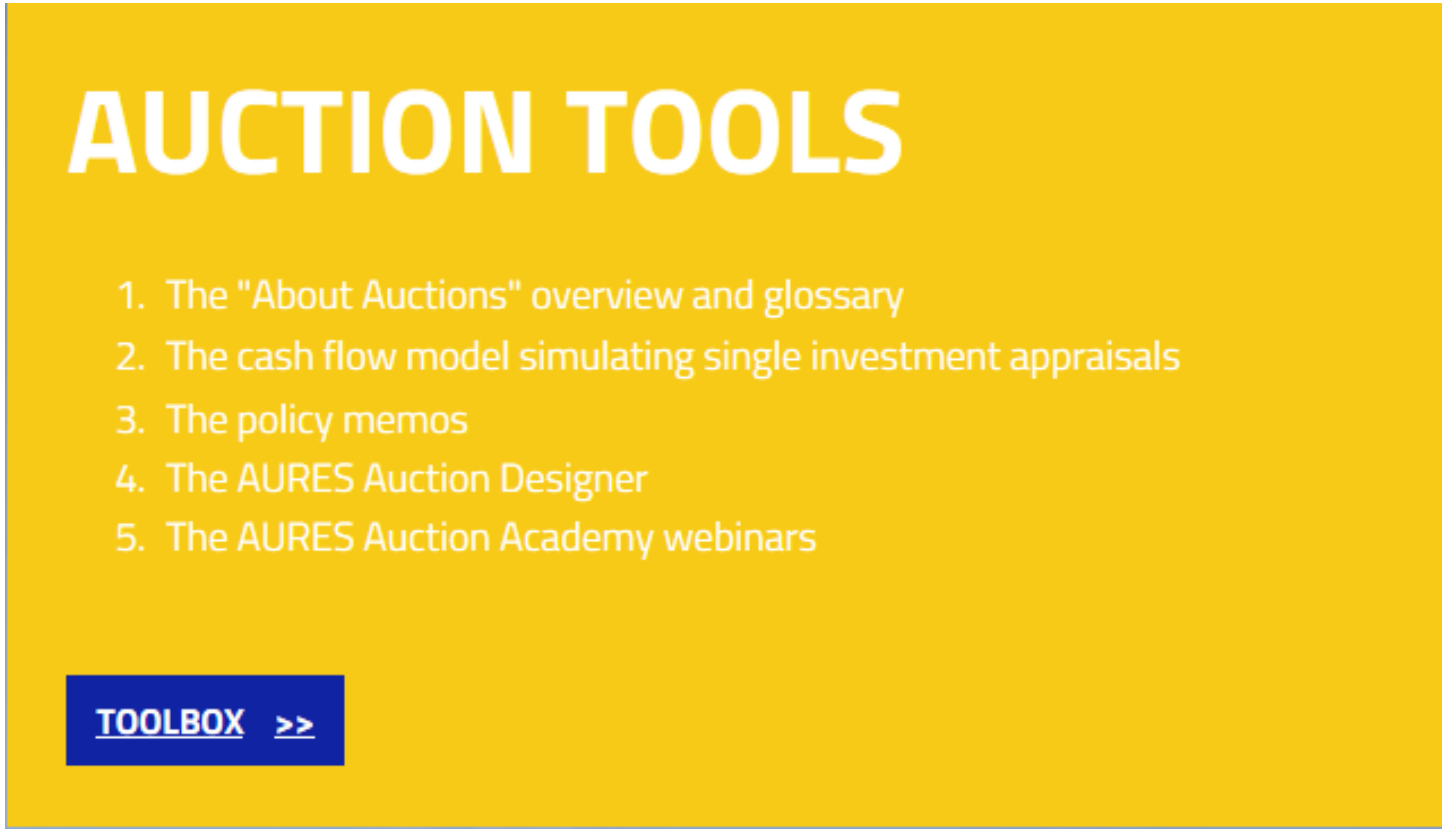
- **Auction tools of the AURES‘ project**
- The auction design process in context

Auction tools

http://auresproject.eu/



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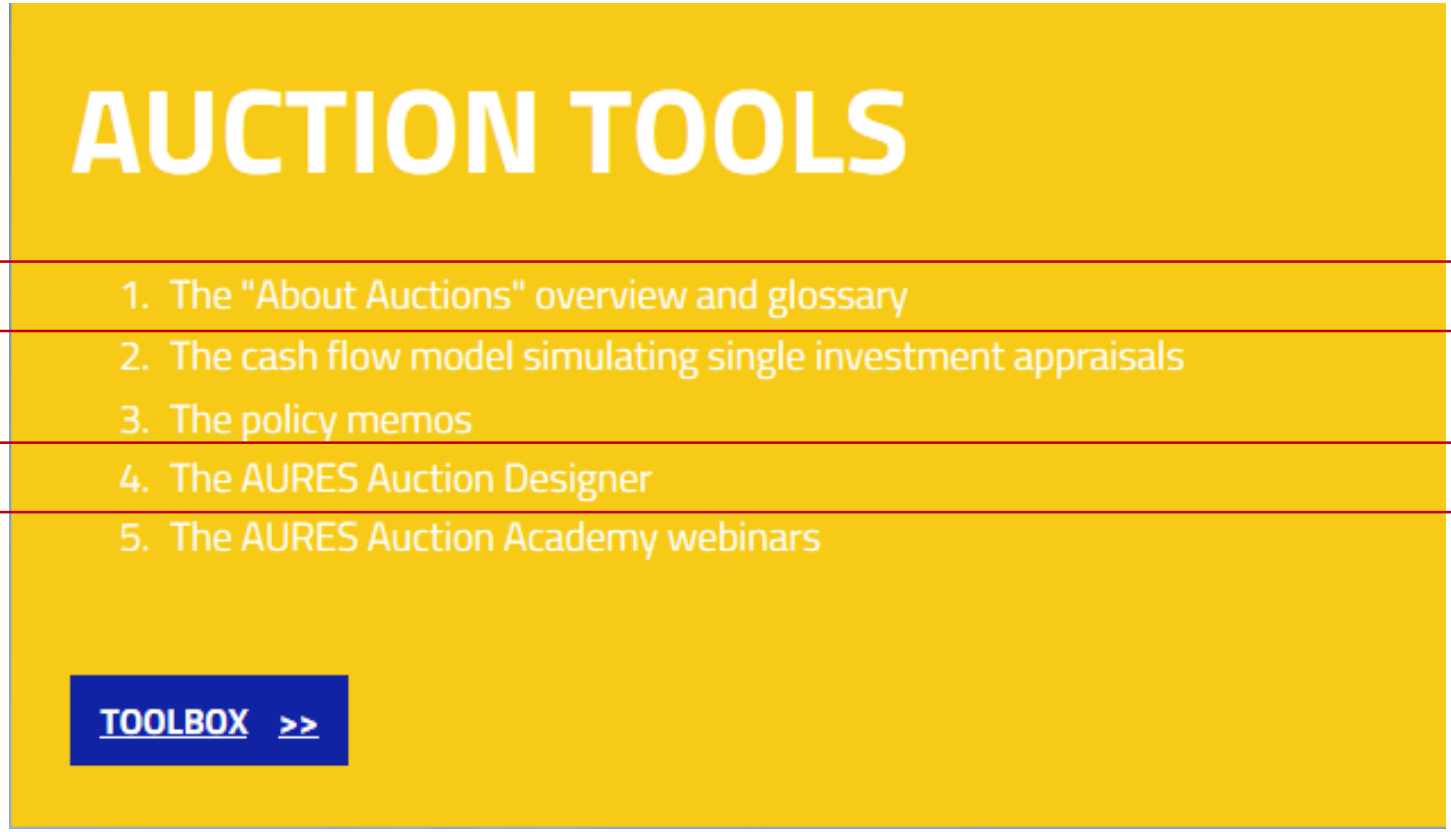

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„About Auctions“ Overview & Glossary

Auction Design Elements

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Auction Design Elements

Auction Criteria

Auction Scope

Auction format

Pricing rules

Remuneration

Other Design elements

„About Auctions“ Overview & Glossary

Auction Design Elements

Auction Criteria: price, actor diversity, geographical distribution, domestic industry development, system integration, technical specifications

Auction Scope: auction volume, periodicity, target achievement safeguards

Auction format: static, dynamic, hybrid

Pricing rules: first-price and second-price, uniform-pricing and pay-as-bid, English and Dutch, ascending- and descending-clock

Remuneration: duration of contract, FIT, fixed FIP, sliding FIP, investment grant

Other Design elements: ceiling prices (reservation prices), material pre-qualifications, financial pre-qualifications, additional penalties, bidder restrictions

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Related concepts, challenges, and effects

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Related concepts, challenges, and effects

Administrative costs, allocative efficiency

Bid bonds, bidding strategy

Clearing price

Deadlines and grace periods, dynamic efficiency

Economies of scale

Implicit collusion, incentive compatibility

Local content

Multi-project bidders

NIMBY

Static efficiency, strategic supply reduction, sunk costs

Transaction costs

Underbidding

Winner’s curse

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AURES auction designer

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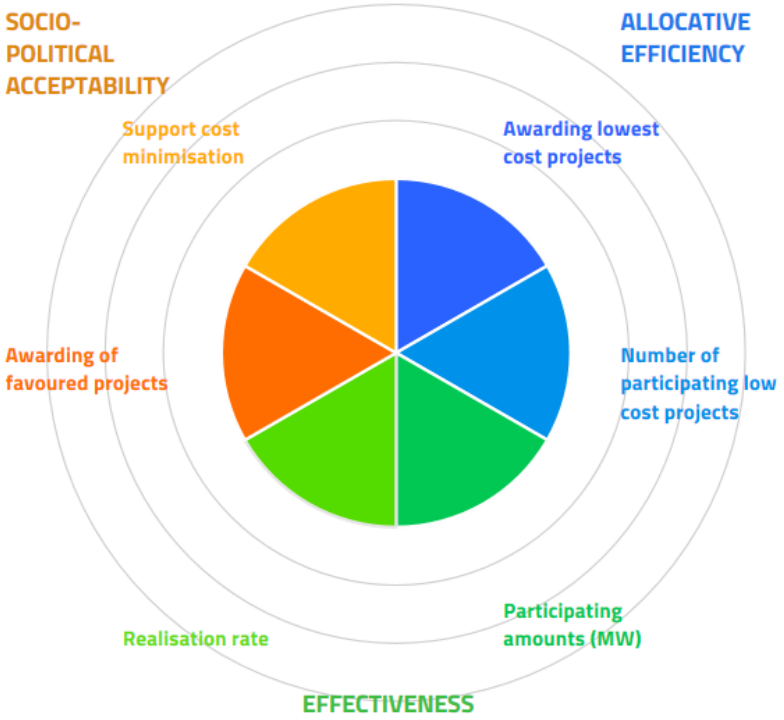

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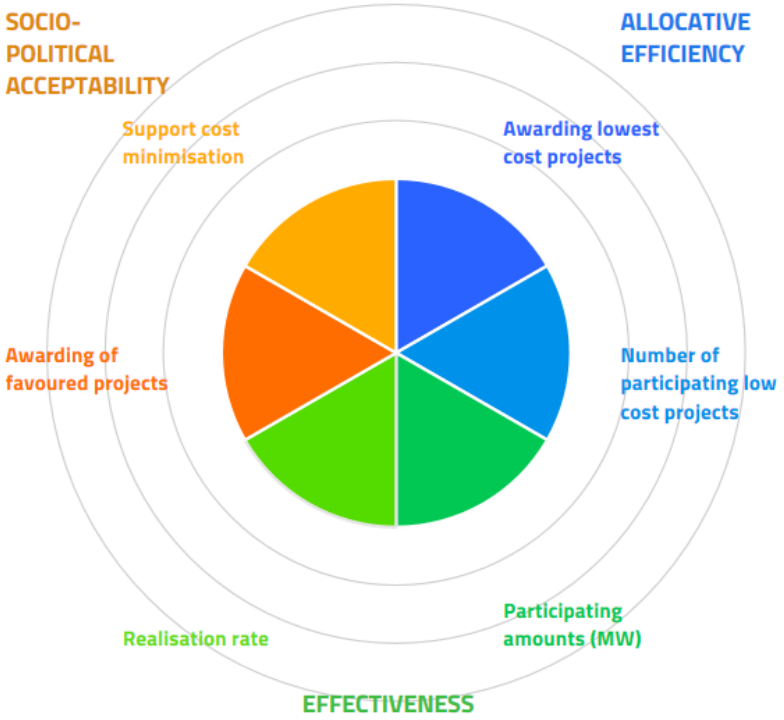
- Free online tool for policy makers designed by Fraunhofer ISI



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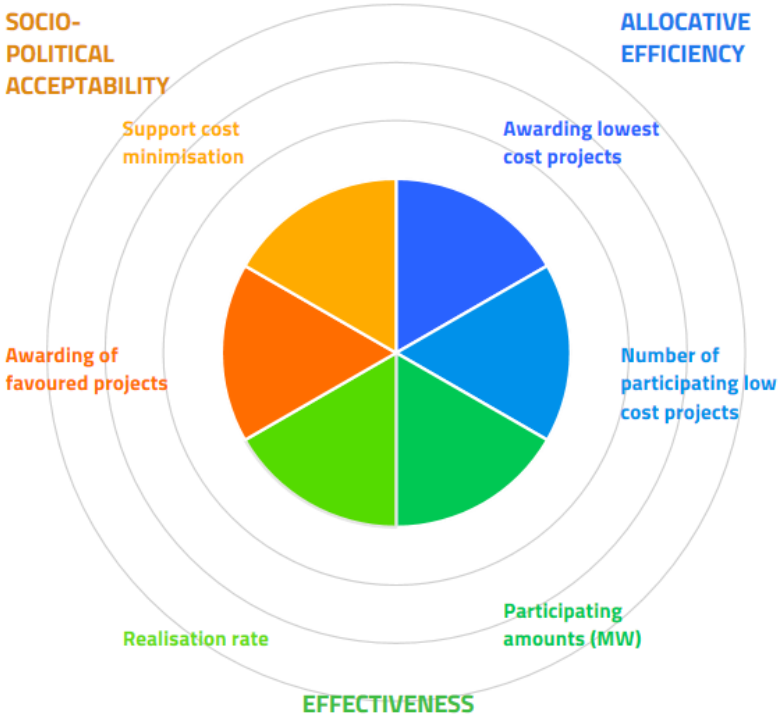

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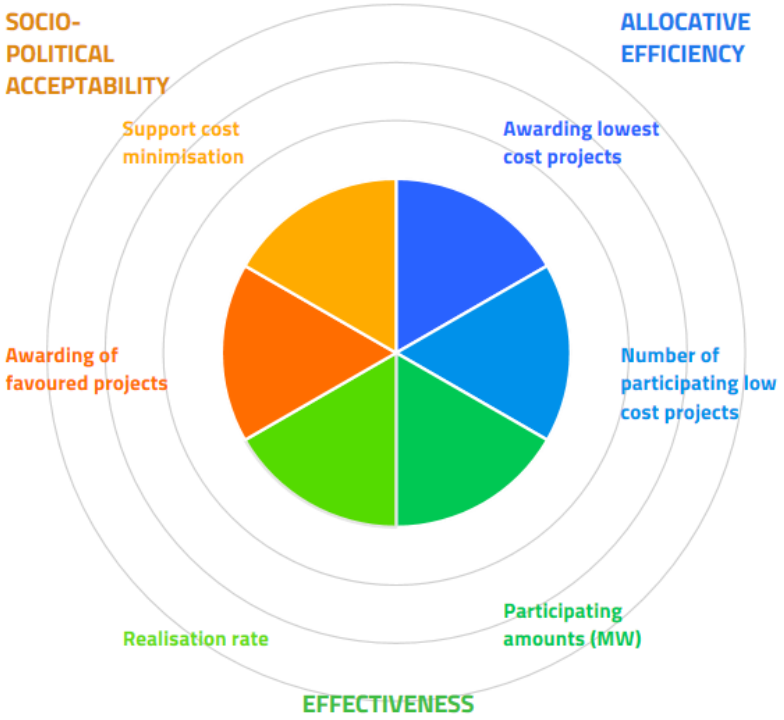
- Introduces you to the most important questions of auction design
- Tailors AURES‘ lessons learnt to your usage case



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SUMMARY: COUNTRY: N/A TECHNOLOGY: N/A SUPPLY/DEMAND RATIO: N/A FORMAT: N/A TYPE: N/A PRICING RULE: N/A PAYMENT: N/A SHOW ALL

Design your renewable electricity auction

Are you a policy maker interested in allocating support for renewable energy installations via auctions? Do you want to understand which are the most common auctions for renewable energy support? Do you need to know more about which auction design has which effects on auction performance?

The **AURES Auction Designer** is a free online tool developed by the AURES project. It takes you through the most important questions which need to be answered by anyone trying to set up a successful renewable energy auction. The tool is interactive. Feel free to skip between the questions, try out different options, and play around with different design elements to observe their effects.

However, keep in mind that you will obtain the most useful feedback if you enter realistic answers. Therefore, if you want to prepare your data first, download our info sheet with background information and a list of the questions you will be asked when going through the tool.

Choose a country

Select

Continue

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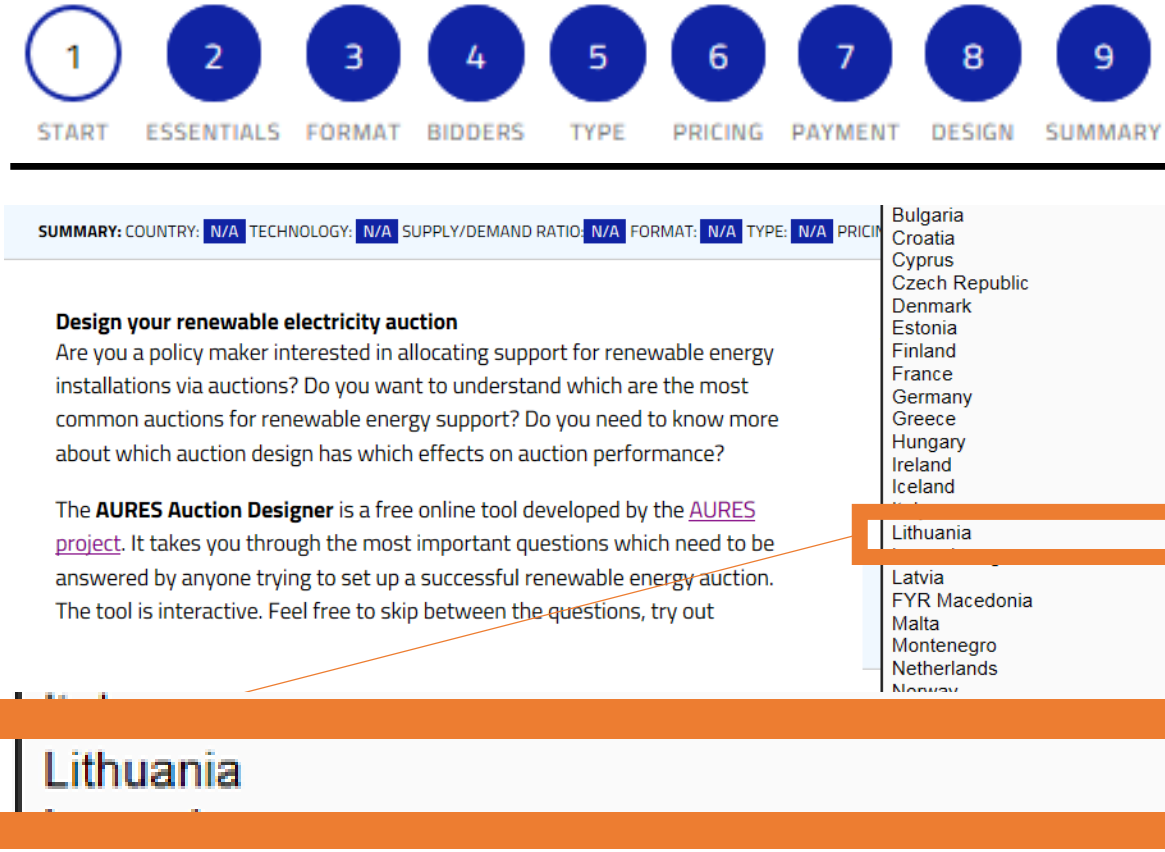

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1 START | 2 ESSENTIALS | 3 FORMAT | 4 BIDDERS | 5 TYPE | 6 PRICING | 7 PAYMENT | 8 DESIGN | 9 SUMMARY

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	Total	Biogas	Biomass	Geo-thermal	Hydro (large)	Hydro (small)	PV	CSP	Tide/Wav	Onshore wind	Offshore wind
Installed capacity 2014 [MW] ?	576	78	26	0	90	27	69	0	-	288	0
NREAP planned capacity 2020 [MW] ?	874,8	62	162	0	100,8	40	10	0	0	500	0

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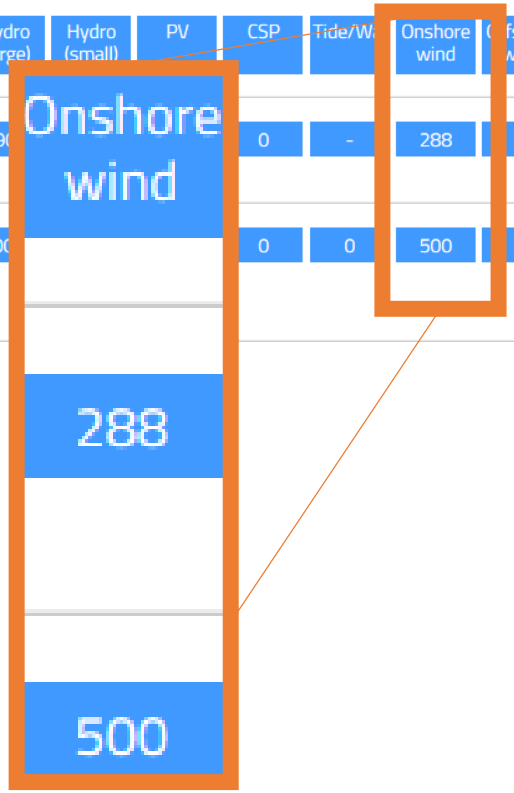

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	Multiple technology	Biogas (> 1 MW)	Biomass (> 1 MW)	Geo-thermal (> 1 MW)	Hydro (> 10 MW)	Hydro (> 1 MW)	PV (> 1 MW)	CSP (> 1 MW)	Tide/Wav (> 1 MW)	Onshore (> 1 MW)	Offshore (> 1 MW)	Small plants (< 1 MW)
Select a technology for which you want to explore auction designs ?	○	○	○	○	○	○	○	○	○	◉	○	○

Deployment target [MW] in the next 5 years ?	300
Number of auctions during the next 5 years ?	5
Volume per auction [MW] ? 🕮 Read more	70
Expected market potential per auction [MW] ?	80

Return to START

Continue to FORMAT

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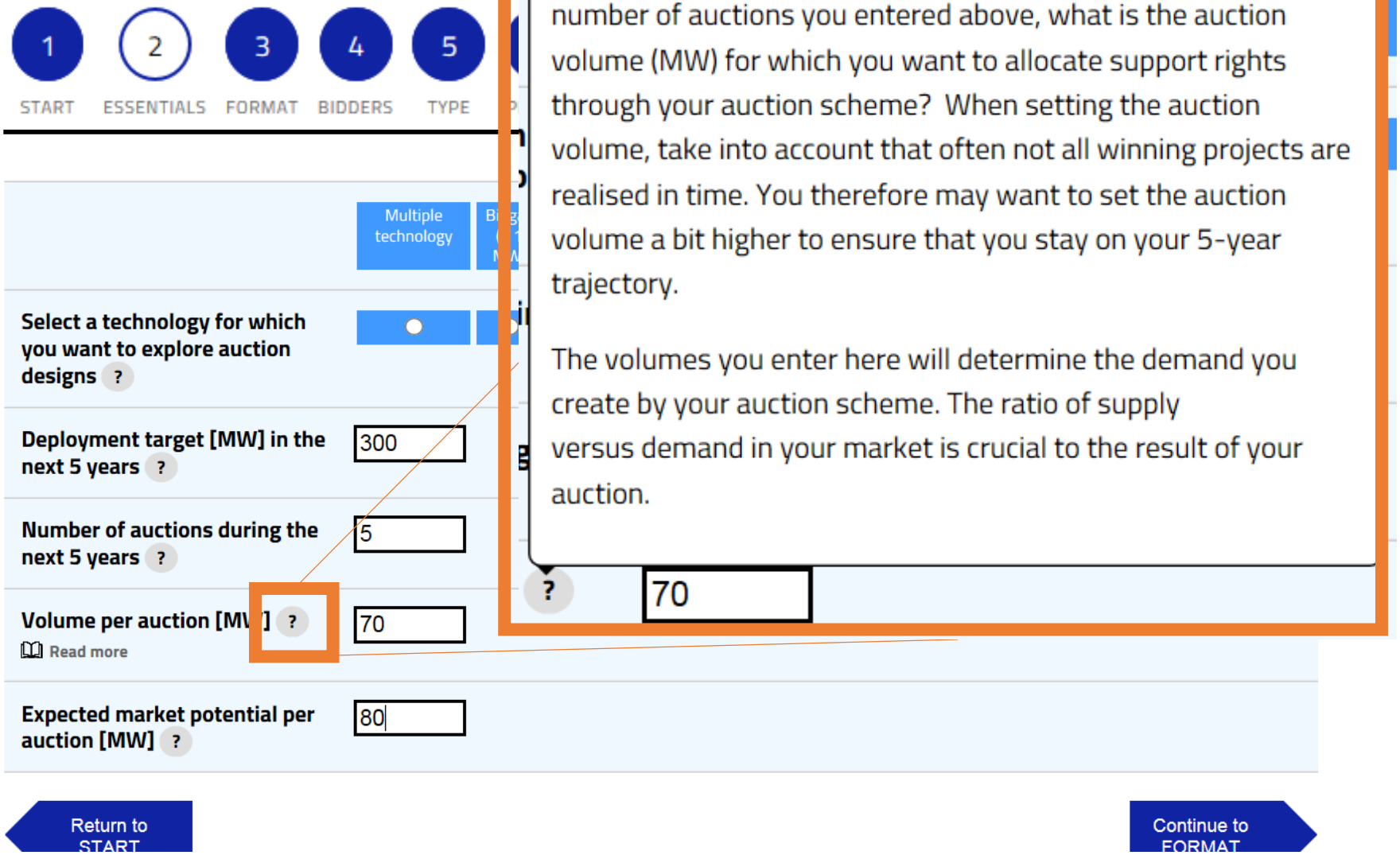

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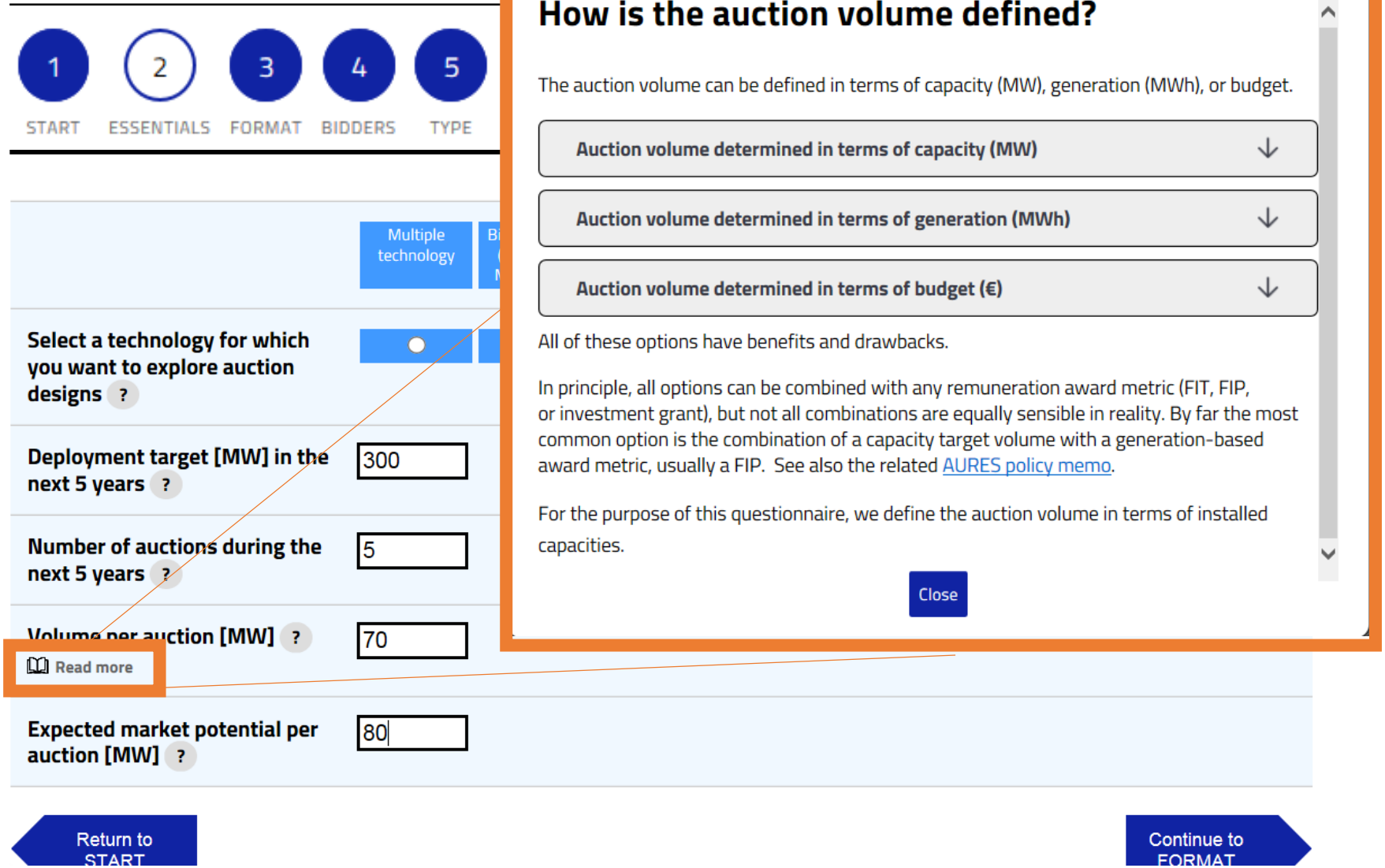

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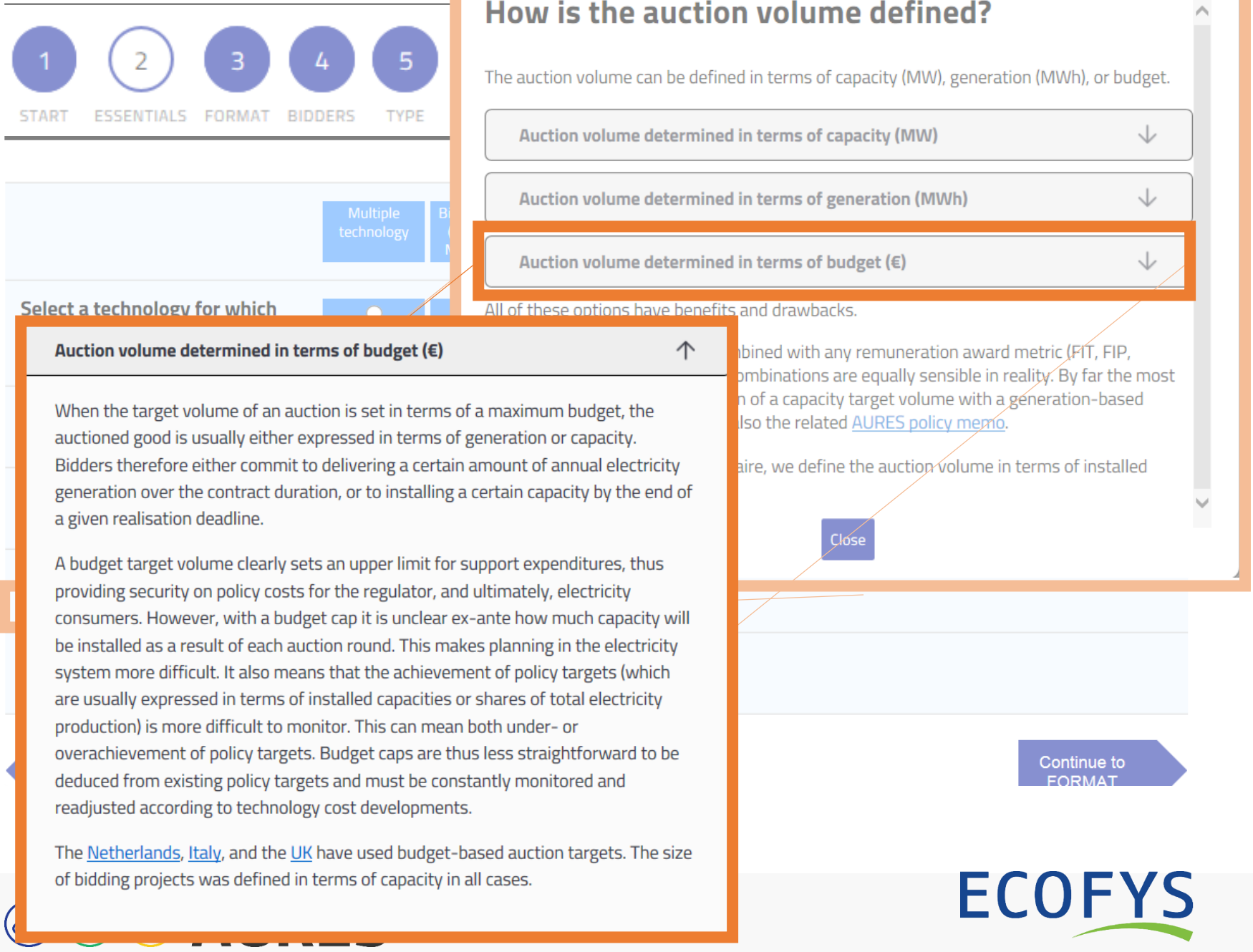

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1
2
3
4
5
START
ESSENTIALS
FORMAT
BIDDERS
TYPE
How is the auction volume defined?
budget.
Multiple technology
Select a technology for which
Auction volume determined in terms of budget (€)
When the target volume of an auction is set in terms of a ma
auctioned good is usually either expressed in terms of genera
Bidders therefore either commit to delivering a certain amou
generation over the contract duration, or to installing a certa
a given realisation deadline.
A budget target volume clearly sets an upper limit for suppor
providing security on policy costs for the regulator, and ultim
consumers. However, with a budget cap it is unclear ex-ante
be installed as a result of each auction round. This makes pla
system more difficult. It also means that the achievement of
are usually expressed in terms of installed capacities or share
production) is more difficult to monitor. This can mean both u
overachievement of policy targets. Budget caps are thus less
deducted from existing policy targets and must be constantly
readjusted according to technology cost developments.
The Netherlands, Italy, and the UK have used budget-bas
was defined in terms of capacity in all cases.
Report D4.1-NL, March 2016
Auctions for Renewable Energy Support in the Netherlands: Instruments and lessons learnt
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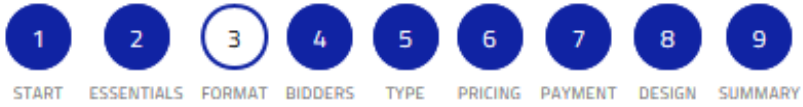

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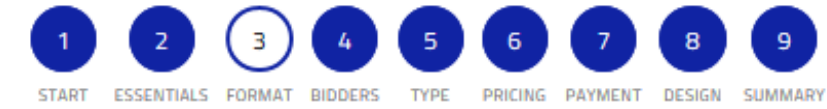

SUMMARY: COUNTRY: LITHUANIA TECHNOLOGY: ONSHORE WIND SUPPLY/DEMAND RATIO: 1.1:1 FORMAT: MULTIPLE-ITEM TYPE: N/A PRICING RULE: N/A PAYMENT: N/A SHOW ALL

Multi-technology auctions

Which auction format works best for which technology?

Two basic types of auctions are regularly applied to allocate support for renewable energy installations: **Single-item auctions** and **multiple-item auctions**.

More on single- versus multiple-item auctions ↓

You chose technology-specific auctions for Onshore Wind. For this technology, several projects are usually required to fulfil the target. Lead times for project development tend to be relatively short, and a large number of potential projects may be in the project pipeline at any given time.

Project sites are usually available in areas with grid infrastructure. **Multiple-item auctions are likely to be a suitable choice in this case**.

Technology-specific multiple-item auctions are being or have been used in Germany, France, Denmark, Portugal, Italy, and South Africa.

Select your preferred auction format

- ○ Single-item
- ◉ Multiple-item

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Why do you need to know this?

The characteristics of your bidders and your auctioneer are important, for example when choosing between static and dynamic auction types. In addition, the better you know your bidders, the more reliable your estimate on competition levels will be, and the better you can foresee possible problems with auction performance. You can then address such issues with appropriate design measures.

Expected number of bidders ?

- ○ Less than 5
- ◉ Between 5 and 50
- ○ More than 50

Do bidders (project developers) have good cost information on their projects? ?

No

Is there a risk of implicit collusion? ?

No

Can the auctioneer handle a complex auction mechanism? ?

No

Return to FORMAT

Continue to TYPE

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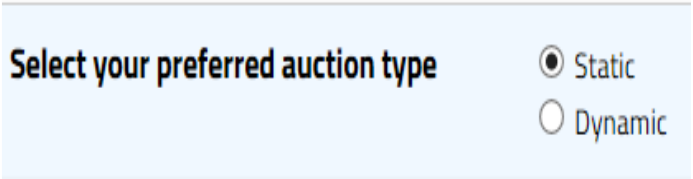
Type, pricing, payment



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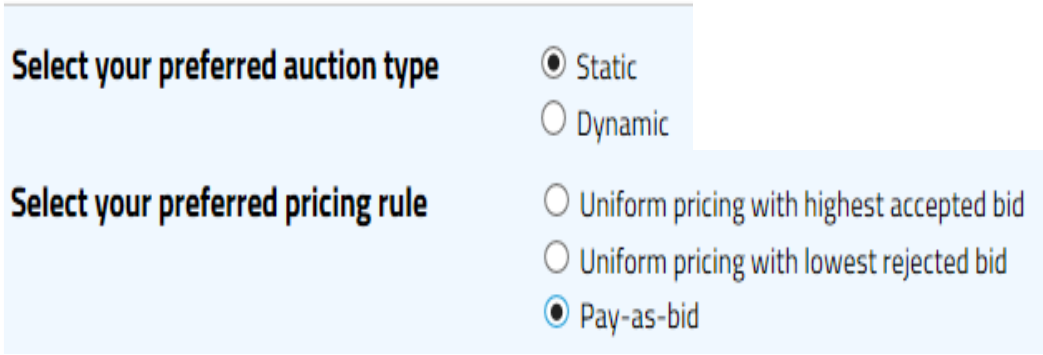

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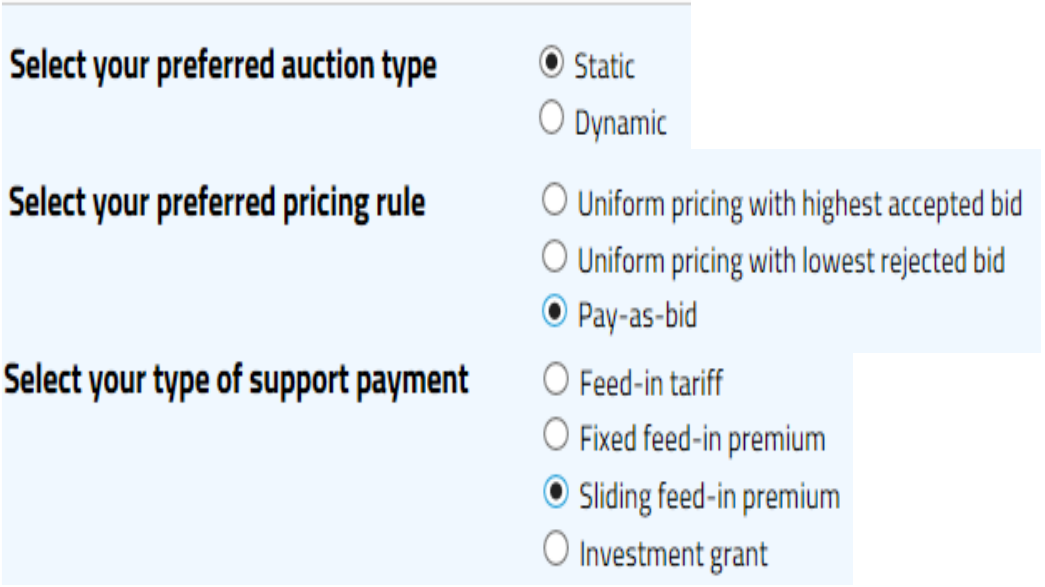

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Design elements

Vary the design elements below to observe their effect on auction performance.

Ceiling prices Read more
none — ambitious

Material Prequalifications Read more
lenient — strict

Financial Prequalifications Read more
lenient — strict

Penalties Read more
lenient — strict

Bidder restrictions Read more
loose — tight

Secondary objectives

Which criteria, apart from prices, are important to you in your auction?

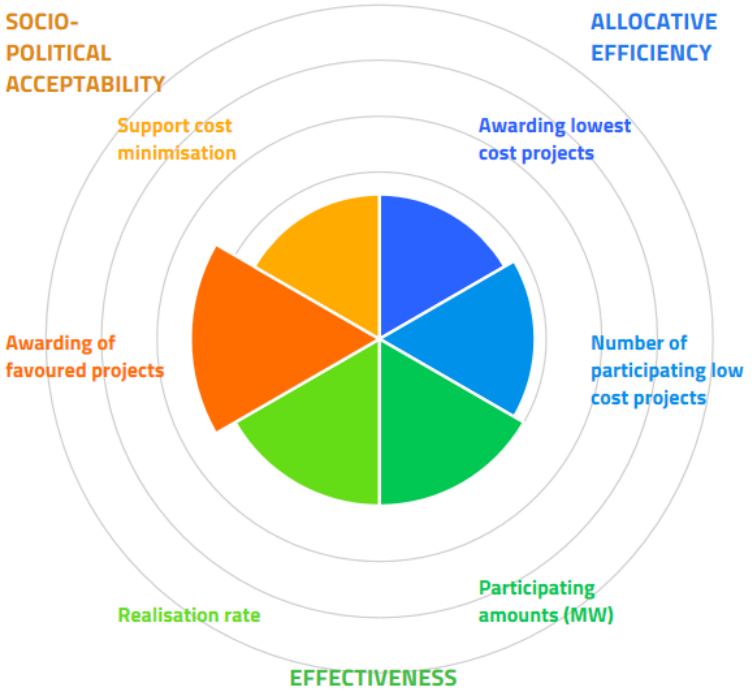
Actor Diversity Read more
No

Geographical distribution Read more
Contingents for certain location types c

Domestic industry development Read more
Pre-qualification criterion regarding job

System integration Read more
No

Technical specifications Read more
No



Read explanation for dimensions in chart

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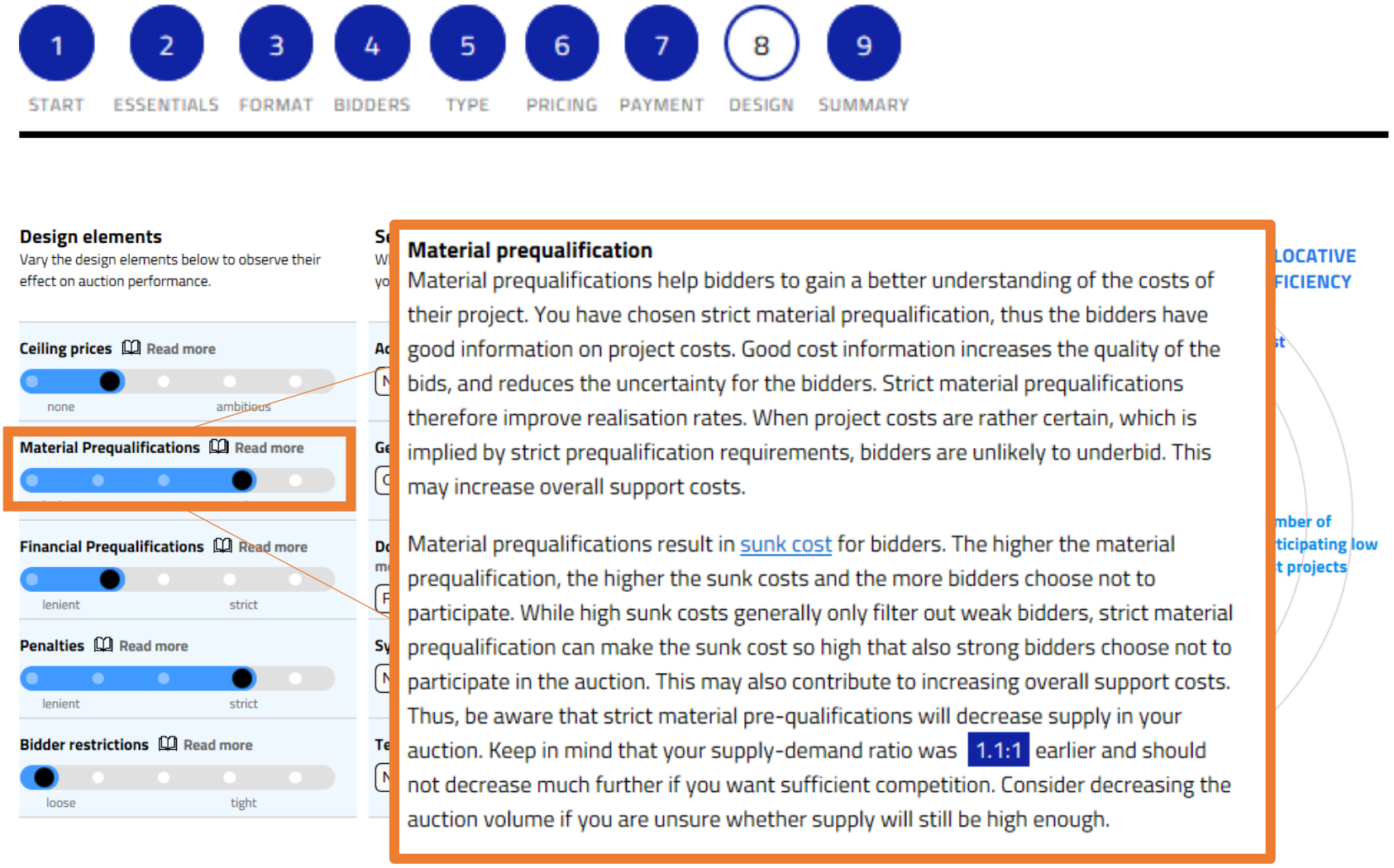

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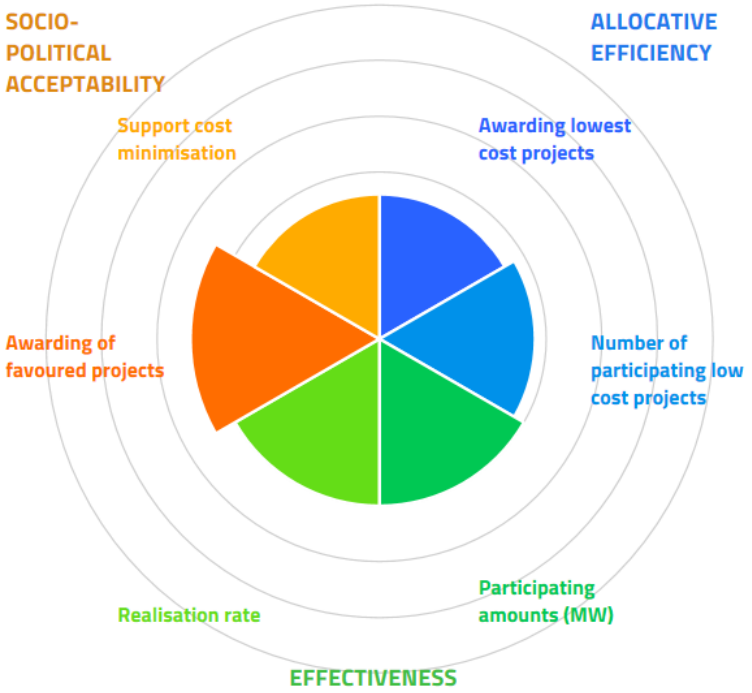

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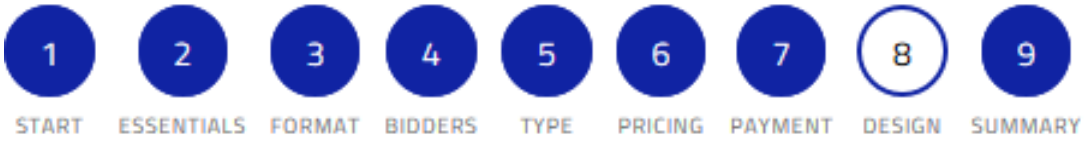

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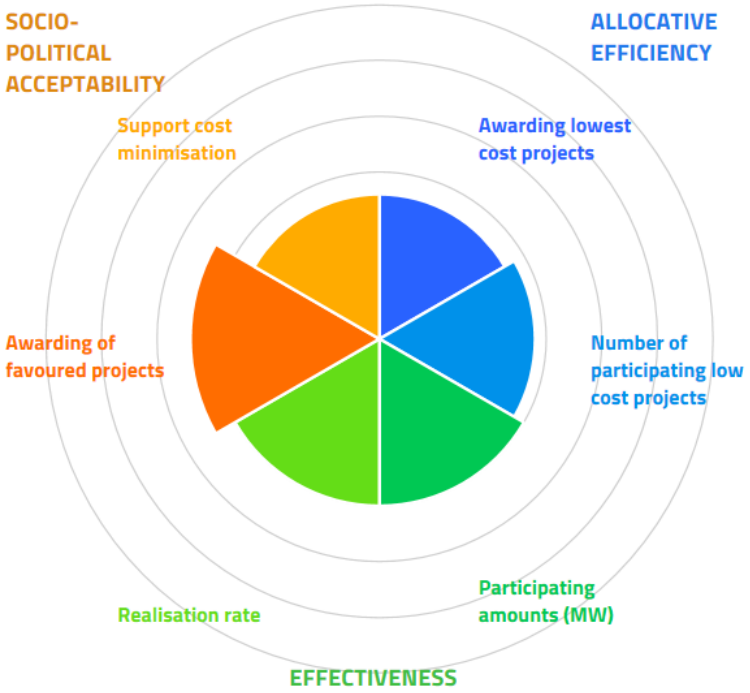

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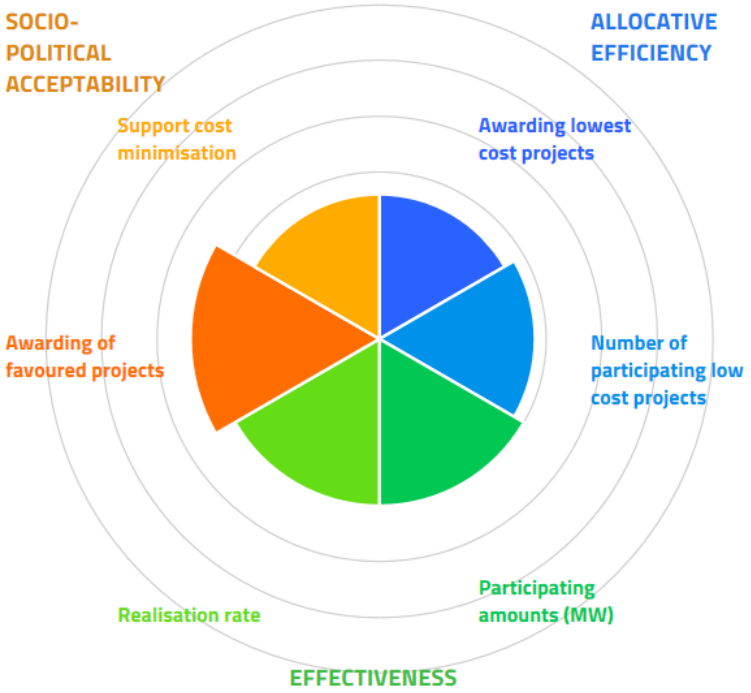

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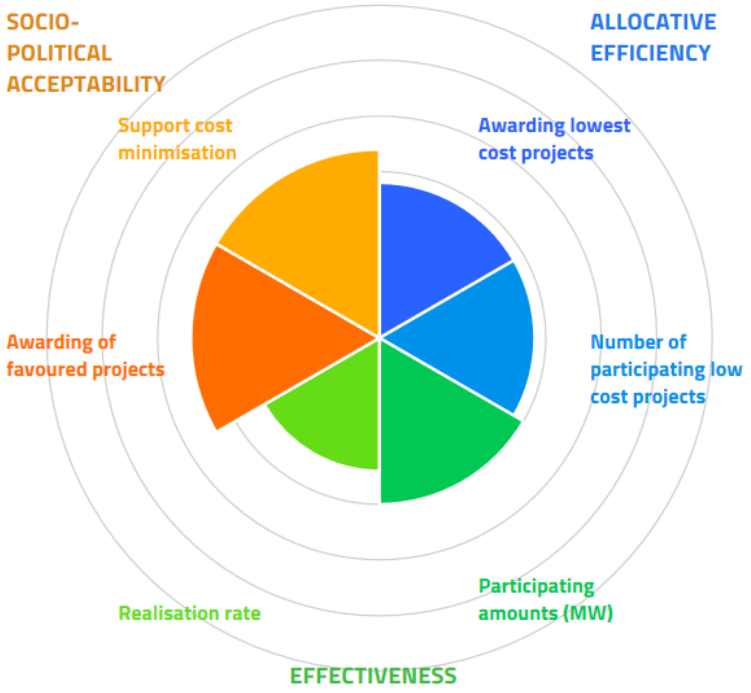

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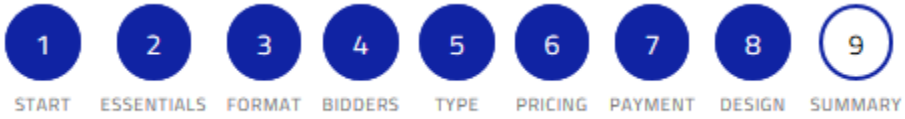

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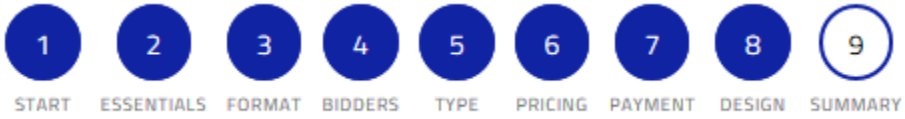

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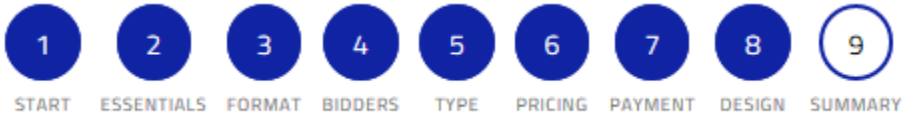

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- When **not** to use:
  - Don’t mistake the Auction Designer’s for a silver bullet delivering a ready-made auction design

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- Auction tools of the AURES‘ project
- **The auction design process in context**

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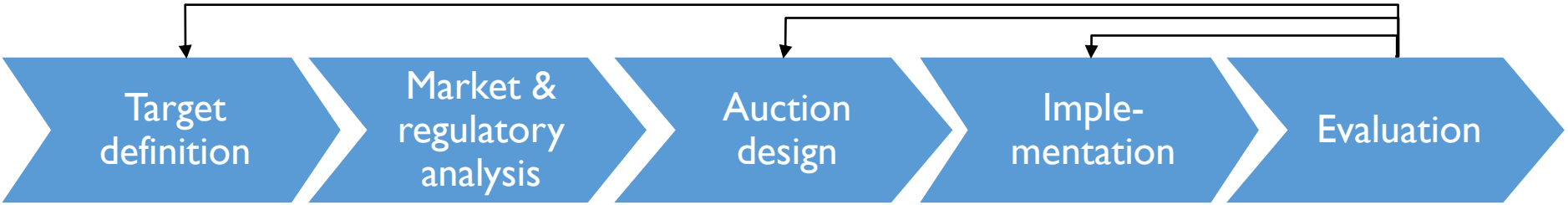

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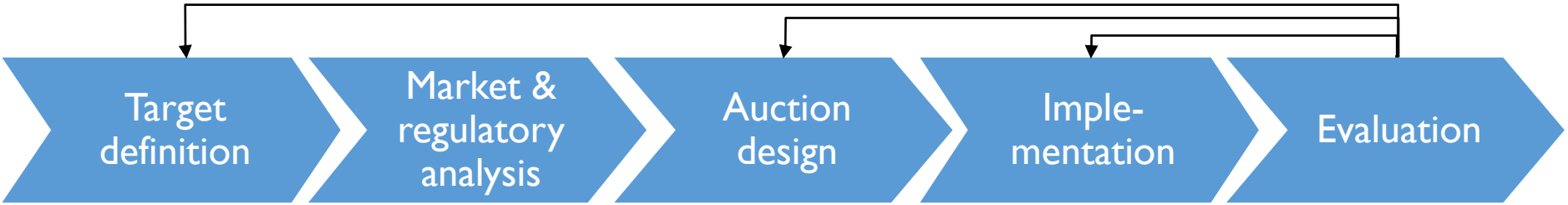

Policy goals

(Technology specific) RE targets

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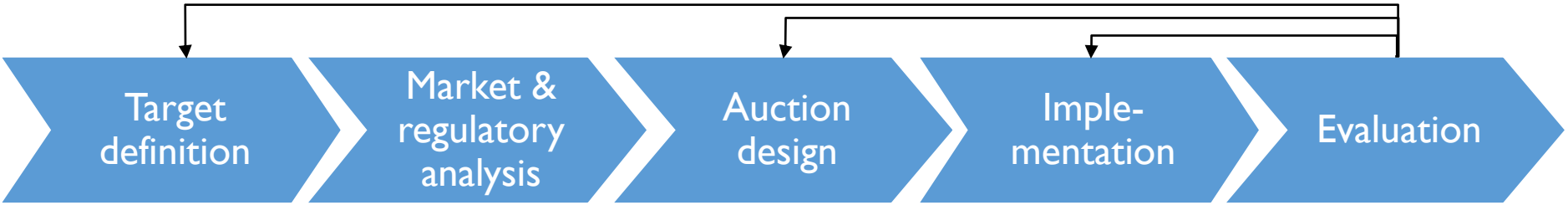

Policy goals

(Technology specific) RE targets

Market size

Market players

Technology cost

Project development & operation

Existing regulations & incentives

Available grid capacity

Electricity market

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Market & regulatory analysis

-

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-

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- **Electricity market design**: Accessibility, risk profile for investors, reliability

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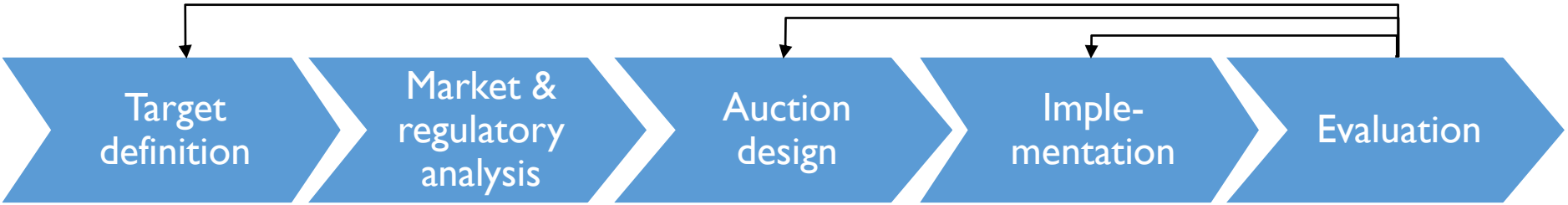

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Auction design

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- Who pays awarded projects (contract off-taker)?

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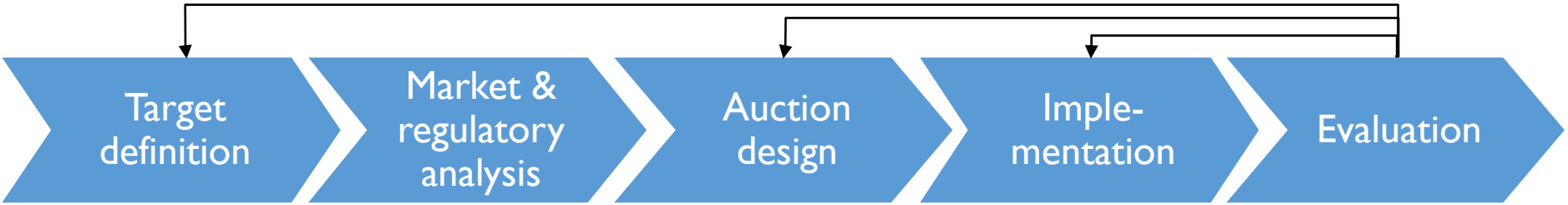

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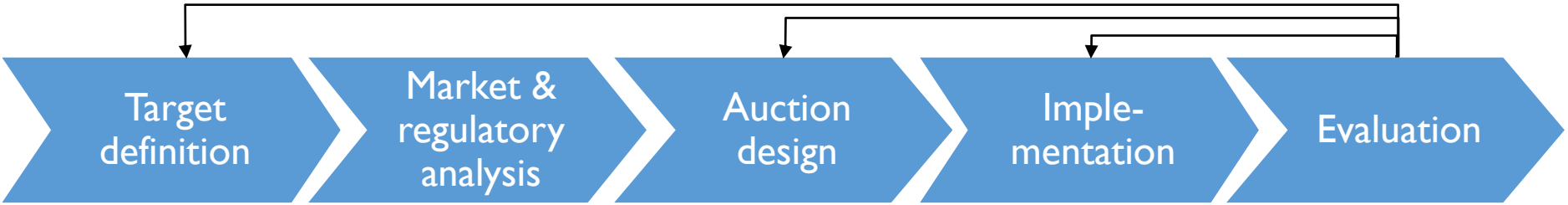

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- General design elements
- Auction procedure
- Conditions for participation
- Deadlines and penalties

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Imple-
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Drafting of required documents

Imple-
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✓Prepare formal regulation, participation documents, and PPAs

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- ✓Ensure bidders understand the tender documents (transparency and simplicity)
- ✓Make a legal review of documents

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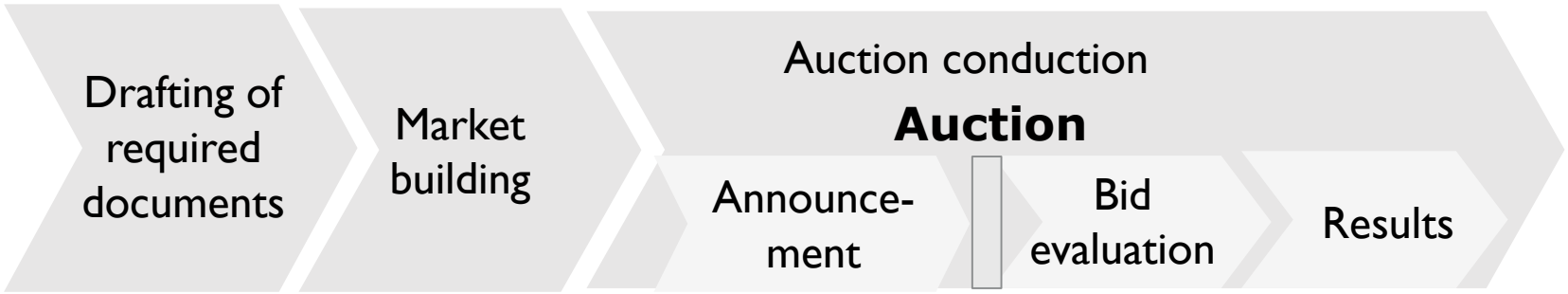

Imple-
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- ✓Publish tender documents well ahead of auction deadline, to give bidders sufficient time to prepare their bids
- ✓Ensure that auction platform works properly
- ✓Evaluate and award bids as quickly as possible without compromising on reliability
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Imple-
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Drafting of required documents

Market building

Auction conduction

Auction

Announce-
ment

Bid evaluation

Results

Contracting

Imple-
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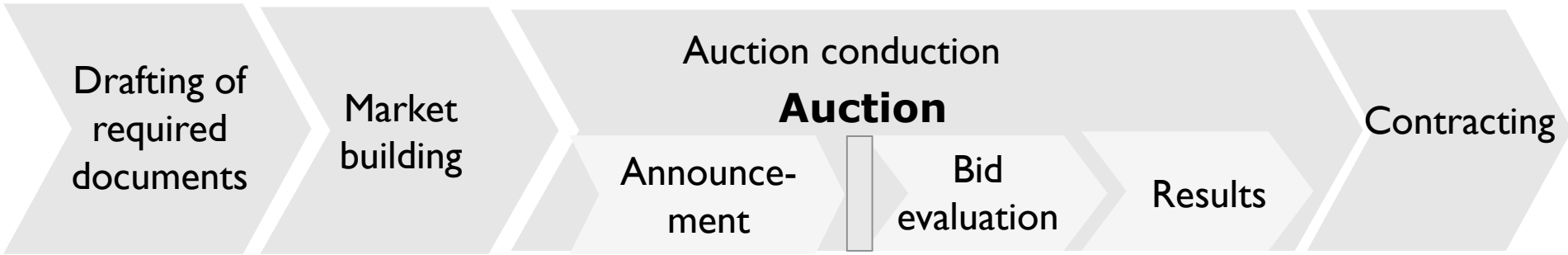

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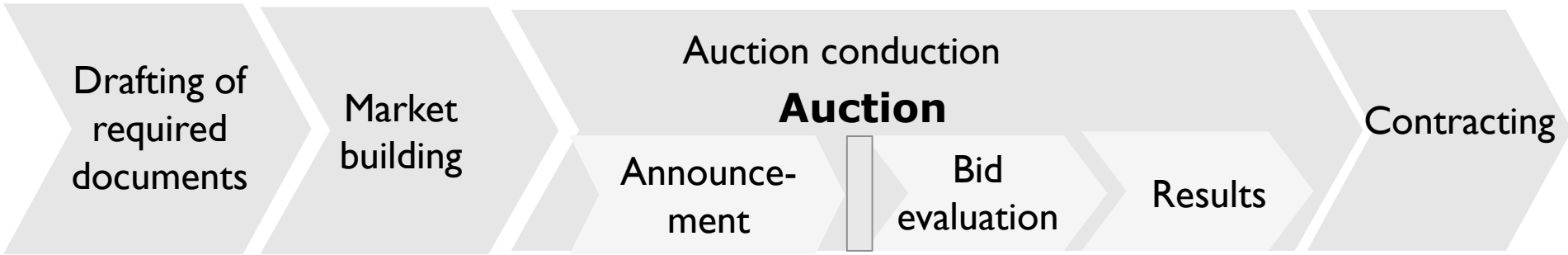

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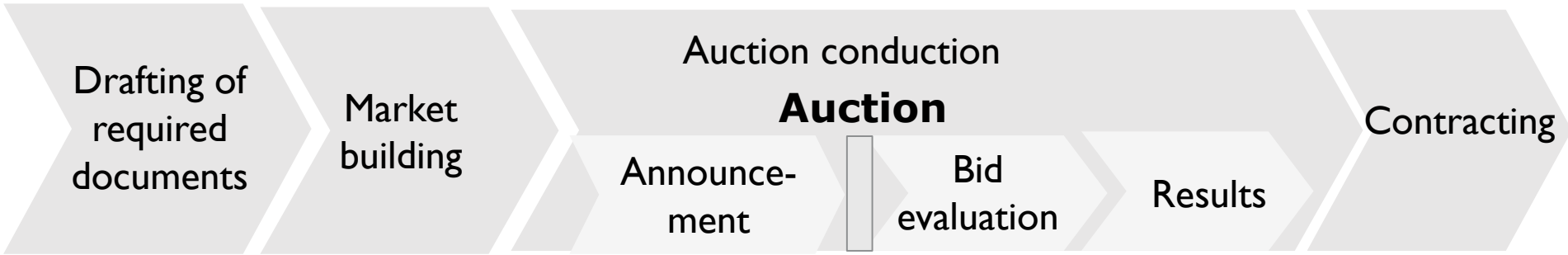

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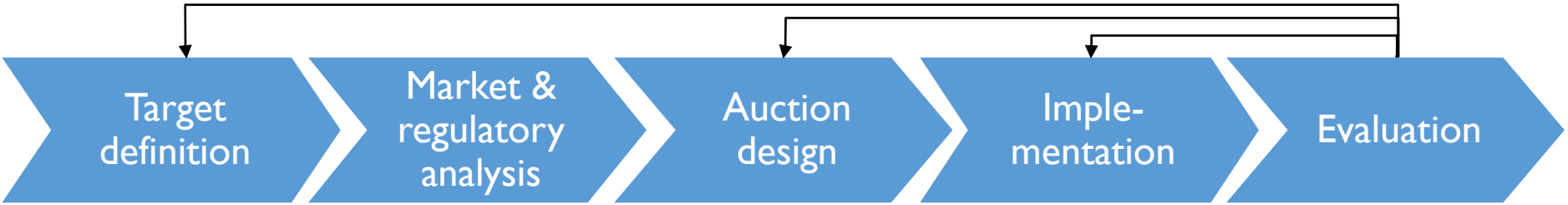

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- Monitoring of realization

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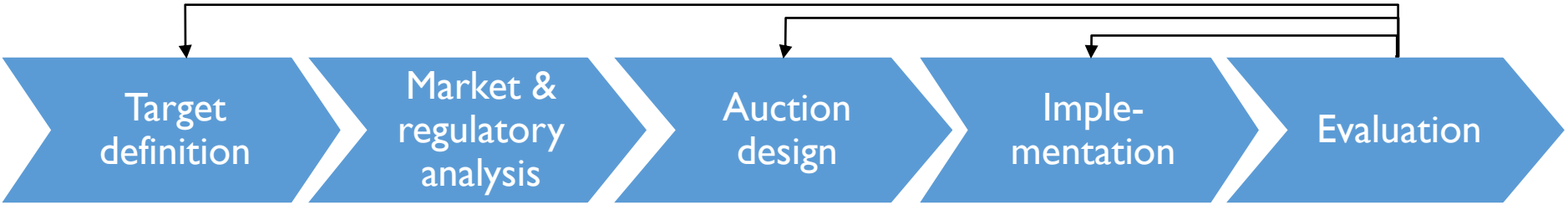

Target definition	Market & regulatory analysis	Auction design	Imple-mentation	Evaluation
Policy goals	Market size	Institutional set-up	Drafting of required documents	Lessons learnt
(Technology specific) RE targets	Market players	General design elements	Market building	Adjustment of auction design
	Technology cost	Auction procedure	Auction conduction	
	Project development & operation	Conditions for participation	Contracting	
	Existing regulations & incentives	Deadlines and penalties	Monitoring of realization	
	Available grid capacity			
	Electricity market			

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Summary

- AURES identified best-practices for renewable energy auction design

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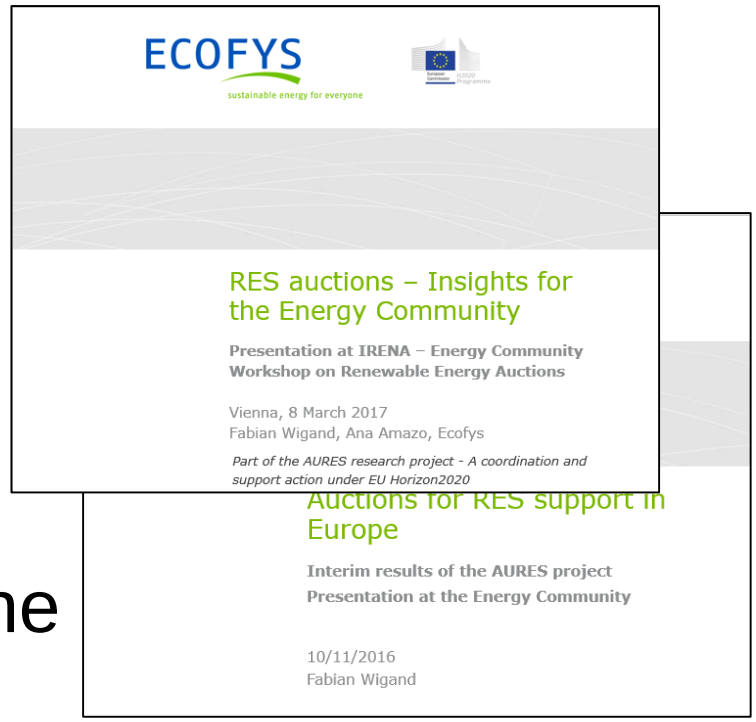
- Findings are available in accessible formats
- The process of auction design is as important as the design itself



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