



Co-funded by the Horizon 2020 programme
of the European Union



ODYSSEE-MURE



Webinar in the framework of the project
“ODYSSEE-MURE -
Monitoring EU Energy Efficiency First Principle and Policy Implementation”
and
“AURES II – AUctions for Renewable Energy Support II”

15 February 2022

Auctions for energy efficiency and the experience of renewables

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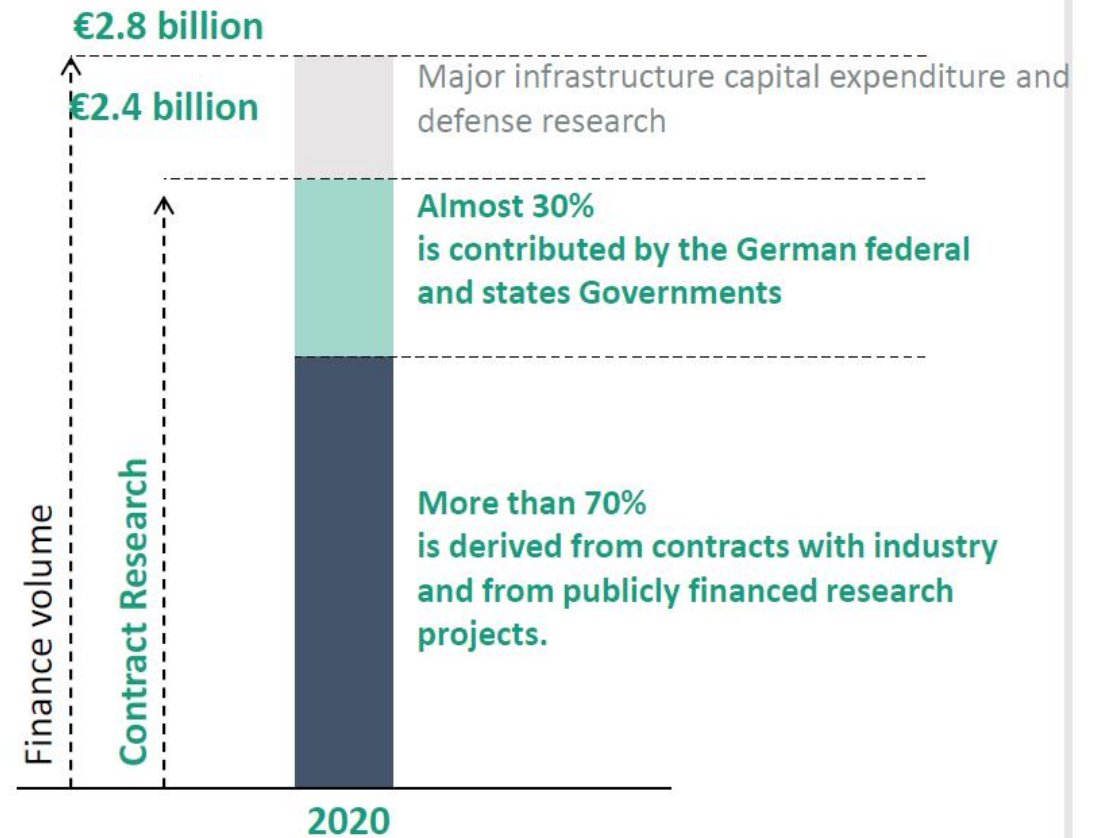
Karlsruhe, Germany

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KEY QUESTIONS OF TODAY'S WEBINAR

- What are common trends in the design approaches of energy efficiency and renewable energy auctions?
- What has been the experience with energy efficiency and renewable energy auctions so far?
- What are common characteristics / differences between energy efficiency and renewable energy auctions?

This presentation provides an overview and comparison of several energy efficiency (EE) and renewable (RE) auction systems in the EU and worldwide. We analyse common features and differences and present several lessons learnt.

The presentation will be complemented by a joint policy brief prepared within the projects ODYSSEE-MURE (<https://www.odyssee-mure.eu/>) and AURES II (<http://aures2project.eu/>).

A DECISION-SUPPORT TOOL FOR ENERGY EFFICIENCY POLICY EVALUATION

ABOUT THE ODYSSEE-MURE PROJECT

Comprehensive monitoring of efficiency trends and policy evaluation in EU countries, Norway, Serbia, Switzerland and the United Kingdom.

[LEARN MORE](#)

<https://www.odyssee-mure.eu/>



ABOUT ODYSSEE

Database on energy efficiency indicators and energy consumption by end-use and their underlying drivers in industry, transport and buildings.

[Learn more](#)



ABOUT MURE

Database on energy efficiency policies and measures by country in industry, transport and buildings.

[Learn more](#)

LATEST NEWS

 03 FEBRUARY 2022

- 3 webinars will take place soon:
 - 3 February: Energy Efficiency First – Retrofitting the building stock
 - 15 February: Auctions for energy efficiency and the experience of renewables
 - 8 March: Addressing the Energy Efficiency First principle in the national energy and climate strategy of Cyprus

 30 NOVEMBER 2021

On November 30th the Odyssee-Mure project hosted a live webinar: "**Recent energy efficiency trends in the EU**" (by L. Sudries and B. Lapillonne, Enerdata).

KEY PUBLICATIONS



POLICY BRIEFS

Short summary of key findings on sectoral energy efficiency trends and policy measures.

[Learn more](#)



WEBINARS

Webinars on energy efficiency policy monitoring and analysis by key experts.

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Project

About us

AURES II (**AUctions for Renewable Energy Support II**) aims at ensuring the effective implementation of auctions for Renewable Energy Sources (RES) in EU Member States.

Building on the insights of the recently finalized **AURES project**, AURES II investigates **auction** design options in more detail to determine their policy performance depending on different policy objectives, and give recommendations on their use.

In AURES II a **multi-methodological approach** is applied, including literature review, theoretical analysis, case studies, surveys, interviews, and empirical and quantitative methods such as econometric analysis and model simulations.

This approach is accompanied by a **strong involvement of relevant stakeholders**, including policy makers and industry representatives. The active dialogue AURES II aims at setting allows stakeholder to learn from best practice and facilitates capacity building across borders in Europe.

Extending the successful work of AURES, **new topics that will be investigated** include the implementation of technology-specific versus technology-neutral **support** schemes, exemptions from competitive **support** allocation for small scale installations, a compulsory cross-border opening of **support**, special provisions for RES community projects and the effects of auctions on financing conditions for renewables.

In addition, to fill the current gap of a structured overview, AURES II is committed to the development of a comprehensive **online database** of **auction** rounds in the EU, where results, details on **auction** design, and financing conditions will be made **freely accessible**.

Overview of energy efficiency auctions – a market-based instrument for energy efficiency

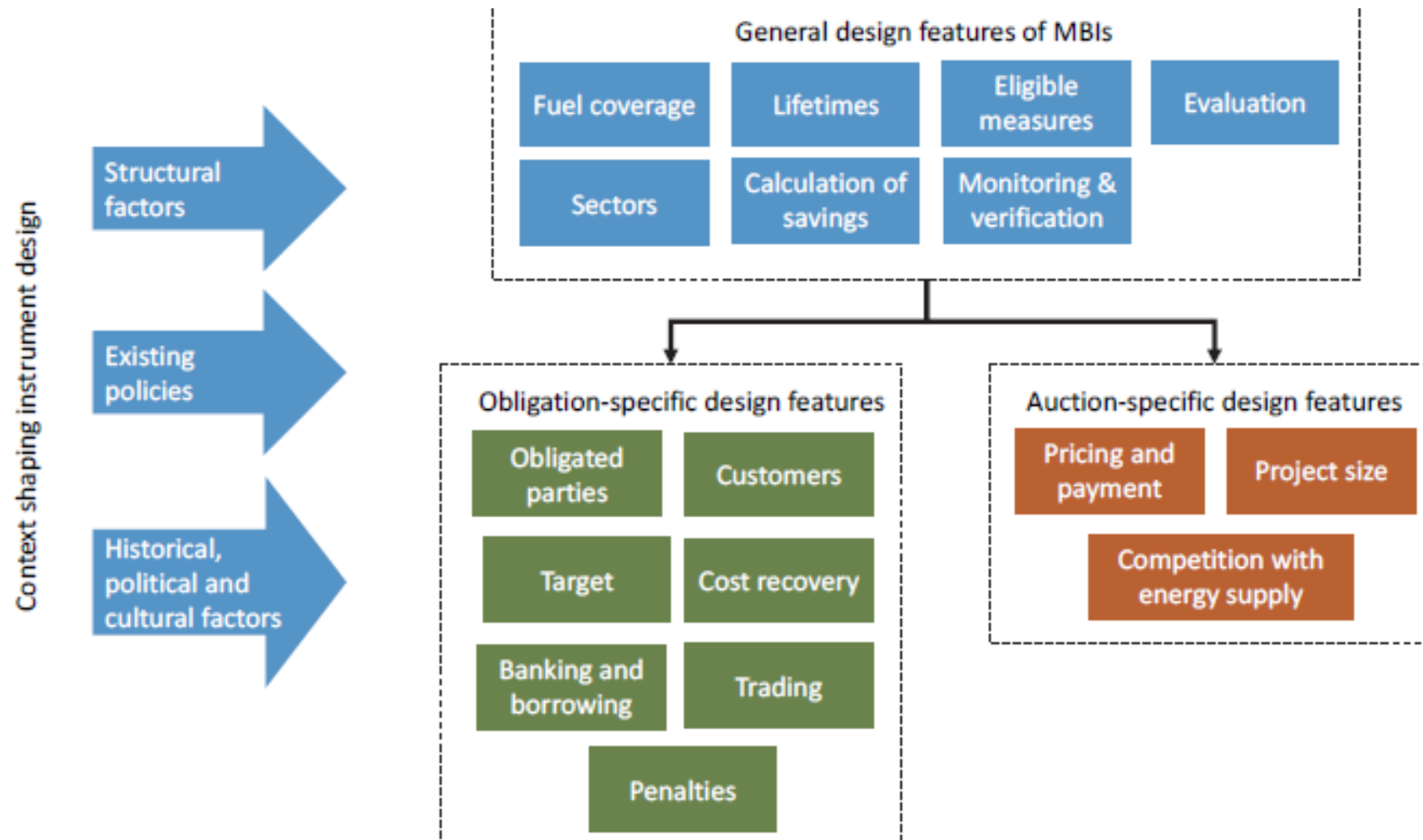
ENERGY EFFICIENCY AS A KEY PILLAR TO REACH AMBITIOUS ENERGY AND CLIMATE TARGETS

- The “**Energy Efficiency First**” principle plays an important role in the European Green Deal and the “Fit for 55” package. The new Article 3 in the EED recast requires that energy efficiency solutions are taken into account in the planning, policy and major investment decisions
- In the proposal for a recast of the EU **Energy Efficiency Directive**, the energy savings obligation for the Member States in Article 8 (former Article 7) were significantly increased.
- The EU **State Aid** Guidelines limit the granting of state aid without a competitive bidding process, though the revised Guidelines (CEEAG) from January 2022 allow the exemption of measures for energy efficiency projects lower than 300,000 EUR.

A key challenge to achieve higher targets for energy efficiency is to find an appropriate **mix of energy efficiency policies** that allows the full exploitation of the technical and economic energy efficiency potentials by overcoming persisting financial and non-financial barriers and being in line with the State aid guidelines →

Market-based instruments (MBIs) for energy efficiency, i.e. Energy Efficiency Obligation Schemes (EEOSs) and / or **AUCTIONS** can make an important contribution.

How do MBIs for energy efficiency (EE) work?



Source: [1]

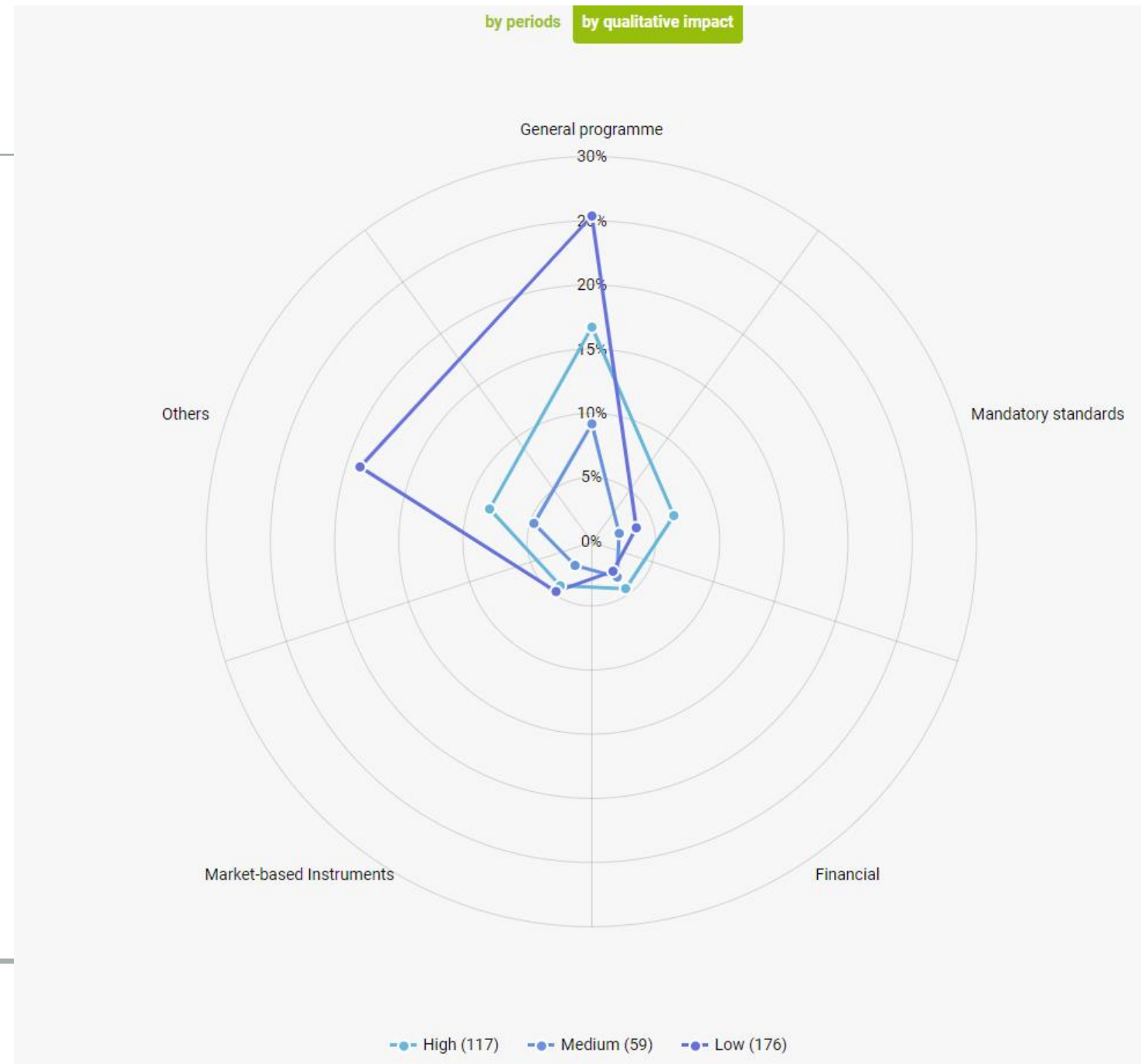
Specific design features of EE auctions

Definition: Tendering mechanism in which market actors should not be obliged, but rather encouraged, to develop energy-saving projects and programmes and offer them in competition for funding budgets at the most favourable cost-benefit ratios possible.

Auctioned product	Budget (CAPEX for energy / electricity savings); usually limited to certain percentage of CAPEX)
Funding	Usually use of public budget (general budget, levy on energy price, revenues from ETS)
Segmentation	Segmentation often observable, but not necessary
Auction procedure	Often static, sealed bid auction with pay-as-bid pricing
Award criteria	“Price only” dominating; further criteria possible and sometimes used in the past
Payback period	Usually minimum payback period in order to ensure additionality (\geq 2-4 years)
Project size	Minimum / maximum project size usually in terms of CAPEX
Prequalification	Usually not applied/less stringent than in case of renewables
Ceiling price	Usually maximum price (either absolute or relative comp. to achieved savings)
Penalties	Reduction of support in case of non-delivery usually applied, but no add. penalties
Other	E.g. volume adjustment to ensure competition applied in some systems

MBIs in the MURE database

- Most of the MBIs are described in the cross-cutting section.
- Sometimes also included in one or more sectors (e.g. households, industry).
- Some renewable systems are also included in the cross-cutting section (feed-in tariffs, green certificates).
- Compared to EEOs (and traditional financial instruments), EE auctions are considerably less widespread in the EU Member States (and internationally).



Overview of EE auctions in Europe

	CH – ProKilowatt (from 2010)	DE – STEP up! (2016-2019)	DE – Funding com- petition (from 2019)	DK – Auction based scheme (from 2021)
Auctioned product	Budget (30% of CAPEX)	Budget (30% of CAPEX)	Budget (60% of CAPEX)	Budget (up to 50% of CAPEX)
Funding	Levy on electricity consumption	Public budget	Public budget	Public budget
Segmentation	Only electricity savings; projects and programs	Only electricity savings; „open“ and „close“	CO ₂ savings (electricity + H&C); no segmentation	Energy savings; no segmentation
Auction procedure	Static, sealed bid auction with pay-as-bid pricing	Static, sealed bid auction with pay-as-bid pricing	Static, sealed bid auction with pay-as-bid pricing	Static, sealed bid auction with pay-as-bid pricing
Award criteria	Price only: cost efficiency (multi-criteria in the past)	Price only: cost efficiency	Price only: cost efficiency	Price only: cost efficiency
Payback period	Yes (>= 4 yr.)	Yes (>= 3 yr.)	Yes (>= 4 yr.)	Yes (>= 2 yr.)
Ceiling price	maximum (absolute) support	10 ct / kWh	10 mio. € per bid	1 ct / kWh / year and 2 mio. € per bid
Penalties	No	No	No (but realisation period of 36 months)	No (but under some circumstances fines)

Source: [2,3,4,5]

What were the experiences with EE auctions?

- Auctions seem to be able to reduce the support costs needed for energy savings
- In general, low levels of competition
 - Parallel non-auction based funding opportunities (“outside options”)
 - High transaction costs for participating in the auction
- Relatively high share of large enterprises, low number of SMEs
- Actual implementation of awarded projects questionable

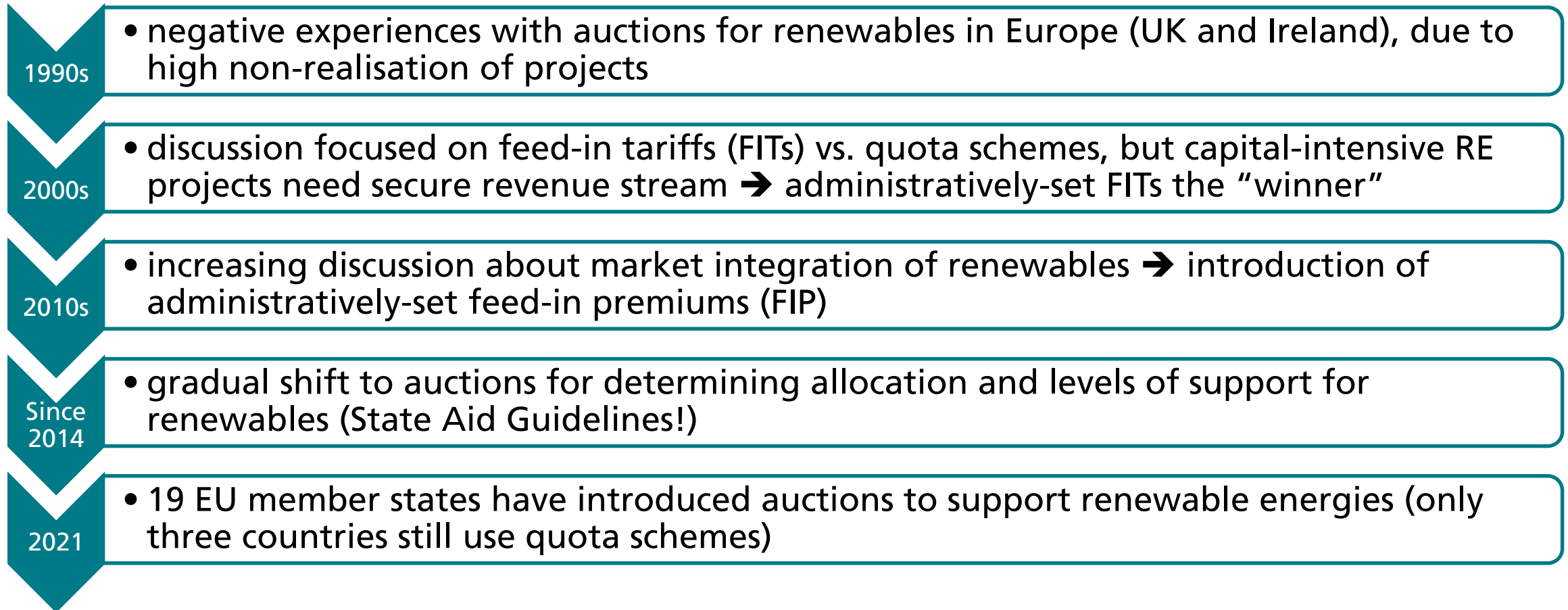
From the evaluation of the German EE auction Step up!

In terms of the traditional objectives, however, expectations have been disappointed: The number of applications and thus also the savings achieved (energy, GHG) remained significantly below expectations, and the economic policy objectives also represent more of a side show. The main reason for the low number of applications is the limitation of the funding quota to 30% in connection with the comparatively high requirements for application and project documentation as well as the risks of competition. The pilot program thus lacked a significant added value compared to other programs.

*Source: Prognos, ifeu (2019). Ex-post Analyse des Pilotprogramms STEP up!
<https://www.prognos.com/de/projekt/ex-post-analyse-des-pilotprogramms-step>*

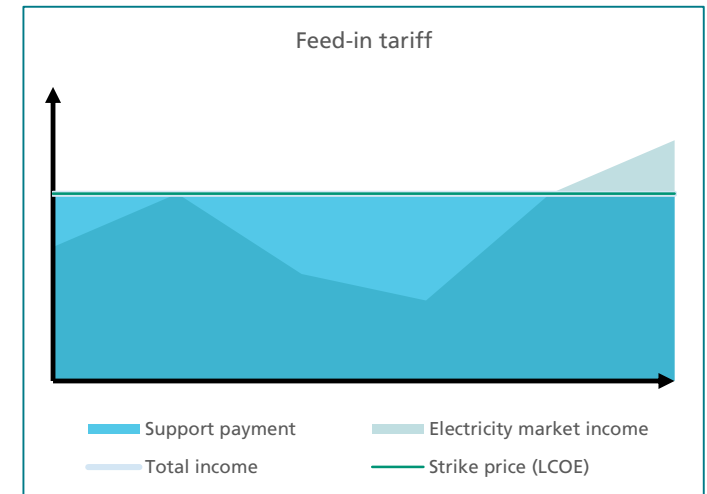
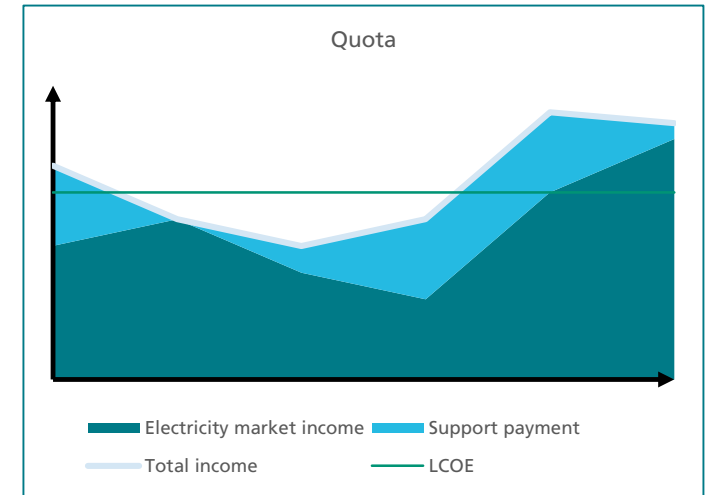
Overview of renewable energy auctions

Auctions and renewable energy (RE) support in Europe



Why are auctions so predominant in the RE sector?

- In most other sectors trend towards quantity-based support schemes (“quota schemes”)
- In the past, several countries with quota schemes and green certificates for renewables: Belgium, Italy, Poland, Romania, Sweden, and the UK
 - ➔ only three remained (Belgium, Romania, and Sweden)
- Quota schemes lacked effectiveness (i.e. target achievement) and efficiency (high prices), while countries with (administratively-set) FIT-based support schemes surpassed their targets
 - Quota schemes expose investors fully to market price risks (electricity market + certificates)
 - Investors favour/need secure revenue streams for capital intensive RE projects ➔ FITs
- Using auctions is pretty much a “natural” next step in the (European) RE policy
 - Long-standing experience with FITs/FIPs
 - Competitive determination of support levels ➔ auctions



Overview of RE auctions (in the EU)

Auctioned product	Mostly capacity and energy; budget rarely applied (e.g., NL, UK) Mostly generation-based remuneration
Auction format	Multi-unit auctions (offshore wind usually single-unit)
Segmentation	In recent years, transition from technology-specific (onshore wind and solar PV separately) to multi-technology auctions (onshore wind and PV in one auction; due to similar generation costs) [different outside of Europe]
Auction procedure	Pay-as-bid, pay-as-cleared rarely used; mostly static auctions
Award criteria	Price only, except France and some of the offshore wind auctions
Payback period	Not relevant in RE auctions; no need to verify costs
Prequalification	Material prequalifications (e.g., necessary building permits) in almost all schemes; financial prequalifications widely used, as well
Ceiling price	Used in all countries
Penalties	Additional, non-performance penalties applied in almost all countries
Other	Volume adjustment only in few countries (DE, FR, GR)

What were the experiences with renewable energy auctions?

- Decrease in support levels compared to administratively-set support schemes, but:
 - falling technology costs?
 - counterfactual and comparability?
 - stagnating awarded prices in recent years
- In general auctioned volumes were able to be contracted, with relatively high realisation rates of awarded projects (although more data needed)
- Trade-off between ensuring sufficient competition and ensuring a high realisation rate
- Be consistent about the stated policy objectives; prioritise consciously when designing the auction, if needed
- “Projects in pipeline” effect – periods without any RE support result in strong competition in the first auctions, while “rush” effect into the old system decreases competition
- Main message from RE auction experience: keep it simple!

Auctions for energy efficiency and renewables – What can they learn from each other?

What are common key characteristics in both energy efficiency and renewable energy auctions...

- Outside options/parallel opportunities need to be taken into account, as well as the “rush effect” to the “old” system
- Multi-item auctions commonly used
- Segmentation of auctions typical
- Pay-as-bid as the main pricing rule
- Multi-criteria auctions are rarely used (focus on cost efficiency?)

...and what are key differences?

- Generally more exemptions for energy efficiency than renewable energy in EU State Aid Guidelines
- (Additional) penalties mostly applied in RE auctions
 - Higher realisation rates in renewables due to non-performance penalties
- “Payback period” no (significant) concern in actual RE auctions/no cost-based remuneration
- Auctioned product in RE auctions is usually capacity or energy, while EE auctions usually auction an overall budget
- Generation based support in RE auctions vs. investment based support in EE auctions
- EE auctions usually follow a predetermined schedule, RE auctions in some cases not
- Volume adjustment to artificially generate competition much more common in EE auctions
- Ceiling prices to avoid overcompensation in absence of competition more common in RE auctions

Conclusions

- To increase competition in EE auctions...
 - consider outside/parallel options
 - consider decreasing the minimum payback period
 - effects of volume adjustment mechanisms need to be further researched
- ...and to ensure a high realisation rate/effectiveness:
 - introduce non-performance penalties and financial prequalification criteria
- Many trade-offs exist when designing auctions, but:
 - ➔ Keep it simple!
- Energy efficiency first principle: think about joint auction for energy efficiency and renewables

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