

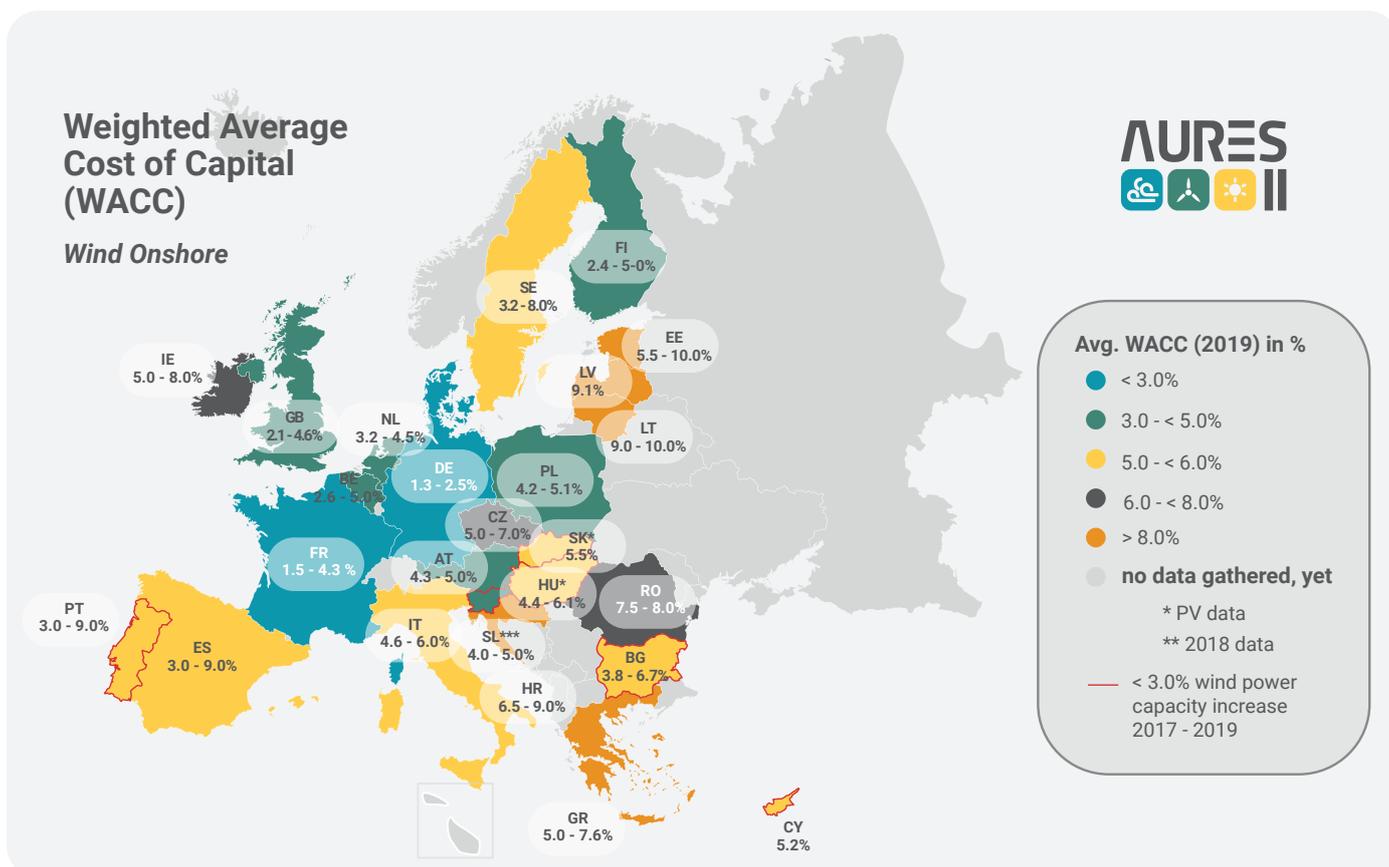
Auctions can have significant impact on financing conditions of renewable energy projects. Impacts arise from the exposure to different risks in different phases of project development and can affect projects in different ways, including access to financing (project financing vs balance sheet financing), financing conditions (loan tenor, coverage ratios, etc.), and cost of financing.

Risk is a major factor in this. While policy makers often only have an indirect influence on exogenous risk drivers (such as capital market conditions or general country risk), some auction-specific risks such as qualification requirements, non-compliance, allocation, and market exposure risk can be directly influenced and to some extent mitigated by careful auction design (see table Overall, we have observed dramatic decreases of

Qualification Risk	Allocation Risk
The risk that a bidder prepares but does not fully and timely meet an auction's prequalification requirements and is therefore disqualified from the auction	The risk that a bidder prepares bid, participates in the auction but does not win. Bid preparation costs become sunk costs
Non-compliance Risk	Revenue or market exposure risk
The risk that a bidder does not meet contractually agreed deadlines or production obligations and thus must pay penalties or lose the awarded contract	Project revenue exposed to price volatility in electricity markets leads to unsecured revenues

To create a low-risk environment for investment in renewable energy projects, policy makers can focus on choosing designs that specifically ease financing conditions and decrease cost of capital, as well as on creating a stable enabling framework that overall reduces risk. In an empirical analysis using data collected through 93 semi-structured interviews across the EU member states

(and the United Kingdom) with bankers, project developers, investors, and other stakeholders, AURESII found that the presence of auctions in a competitive market environment did not push cost of capital upwards. On the contrary, we found evidence that increasing experience with auctions seemed to coincide with a reduction of the weighted average cost of capital (WACC).



WACC, cost of debt and cost of equity for wind energy and solar PV projects between 2014 and 2019. Reasons for that were mainly risk factors at macro level (interest rates of government bonds and economic growth) and international capital spill-overs. A factor for decreases in cost of equity was the emergence of new investors with new business models and interests, such as greening their investment portfolios. This shows that auctions and changing financing conditions have not only an impact on the cost of individual projects. Auctions also change the investor landscape of the market, where the competitive nature of bidding schemes creates conditions, in which size and financial resources play an increasingly important role.

We draw the following key lessons for de-risking auction policy from our case studies and quantitative simulation analyses:

1. Support policy designs that reduce market risk exposure have a slightly cost reducing impact on cost of capital. Here, we find that a focus on de-risking of debt financing would deliver the largest WACC reductions and thus support costs savings. In addition, de-risking policies should also aim at increasing loan maturities and debt size. Such debt de-risking can be best achieved by adopting remuneration schemes that decrease the volatility of the project's cash flows, i.e. revenue stabilization mechanisms. Both a symmetric sliding feed-in premium (FIP) (two-sided contract-for-difference [CfD]) or an asymmetric sliding FIP (one-sided CfD) can achieve this goal. Conversion of the support scheme for operational projects awarded a feed-in tariff (FIT) into a FIP upon the introduction of an electricity market, should be avoided.

2. De-risking of cost of equity – through relaxing pre-qualification requirements, reducing bid bonds, prolonging realisation rates etc. – does not seem to yield particularly large additional benefits in terms of support cost reduction. Instead, it may create unwanted effects, such as lowering project realisation rates. Conditions for participation in the form of material pre-qualification requirements need to be fine-tuned carefully as to ensure a high project realisation rate but not put developers off on their participation in the auction. Bid bonds are rarely an issue for large and international players but can effectively lock small and medium developers out of an auction. Penalties should be clearly defined but gradual to allow for a penalty proportional to the extent of the commissioning delay, since this allows for controlling the impact on future cash flows in a more nuanced way than applying the full penalty would.

3. Auctions can de-risk through providing stability. However, this needs active political commitment. A lack of long-term market predictability (in terms of continuity and schedules) may lead to a decreased willingness and ability to develop and finance new projects as well as to worsened financing conditions. Sufficiently large volumes and multi-year auction schedules foster competition and visibility for investors. These allow for economies of scale and low allocation and qualification risk. Such clarity and long-term visibility are key, not only for mitigating risks for project developers but also for banks and finance providers. As auctions become more established (i.e., more auction rounds implemented and large volumes auctioned), cost of capital can decrease.

4. Auction procedures and rules should be fixed before the auction and communicated transparently, as this helps developers and finance providers to better assess the potential consequences of such changes for their projects. Undisclosed ceiling prices can deter developers from participating in an auction. Similarly, previously unannounced decisions to reduce awarded volumes due to undersubscription puts developers off or may reduce participation in subsequent auctions.

5. Good auction design takes the local financing conditions of developers into account and tries to minimise unnecessary risks for developers. Good auction design does not need to shield developers from all risks, instead, it should help them correctly assess and address the risks involved in participating in an auction.

AURESII resources on auctions and financing

Reports

- Effects of auctions on financing conditions for renewable energy, 2019
- Renewable energy financing conditions in Europe: survey and impact analysis, 2021
- Auction design and renewable energy financing, 2021
- De-risking and scaling up renewables through market-based policies, 2022

Scientific articles

- The impact of auctions on financing conditions and cost of capital for wind energy projects, Energy Policy, 2021

Data

- Financing conditions of renewable energy projects –results from an EU wide survey, Open Research Europe, 2021