EVALUATING THE IMPACTS OF AUCTIONS ON FINANCING CONDITIONS FOR RENEWABLE ENERGY PROJECTS

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Overview

Auctions for renewable energy support require investors to enter into competitive bidding and expose them to new kinds of uncertainties that affect their cash flows. For example, the risk of sunk costs that occurs in case of losing an auction (Mora Alvarez et al., 2017), penalties in case of not realizing a project on time (Kreiss, Ehrhart, & Haufe, 2017) and the uncertainty of future awarded price. Design elements that are too stringent, such as very expensive bid bonds or demanding material prequalifications, may be beneficial for one aspect of auction performance but problematic in another. They may help secure a pipeline of projects, but might also create financial challenges for investors with smaller balance sheets such as citizen energy projects (Grashof, 2019; Klessmann et al., 2015). Previous research has focused mainly on the effectiveness and efficiency of auctions as an instrument for renewable energy target achievement (Winkler, Magosch, & Ragwitz, 2017). Auction design elements have been investigated in detail, but mainly through empirical research of past auctions (Del Río & Linares, 2014; Gephart, Klessmann, & Wigand, 2017; Mora et al., 2017) and modeling work related to penalties and pre-qualification requirements (Anatolitis & Welisch, 2017; Kreiss et al., 2017). The impact of auctions on investor risk and financing conditions has not yet been investigated thoroughly. This paper examines the potential effects of auctions on costs of capital, with the aim of understanding how certain design choices may contribute to de-risking of renewable energy investments.

Methods

We conduct our analysis using a combination of qualitative research methods. This comprises semi structured interviews with project developers and capital providers from various regions in Europe, participatory workshops with stakeholders, and integrate this with a review of financing and other relevant literature in an iterative process. This analysis is the first step in mapping out the different influences and interrelationships between costs of capital and auctions, and provides a basis for future empirical work.

Results

Our results show that auctions induce both positive and negative effects on costs of capital, and that they distribute these risks differently between debt and equity providers. Debt providers typically get involved in projects after an auction has taken place, and therefore avoid all risks associated with individual auction designs such as penalties and pre-qualification requirements. Therefore auction do not exhibit any significant effect on costs of debt. Equity is on the other hand usually invested into a project during its complete lifetime, including the development stage, where project realisation as well as future remuneration levels are still highly uncertain. Hence, auctions may impact the costs of equity to a larger degree. This especially affects small market actors such as citizen energy initiatives, with weak balance sheets and less ability to recover from potential losses. Therefore, it seems that auctions might create participation barriers for small actors that may significantly change the actor composition of a market. Finally auctions create greater certainty for debt and equity providers in the sustainability of support schemes in less developed countries, as they typically reduce the risk of retroactive policy changes.

Conclusions

Competitive bidding processes create additional risks especially during the project development phase, which might cause higher financing cost, and thus more expensive renewable deployment. These risks include the revenue risk associated with the uncertainty of future support price and the risk of sunk costs due to the prospect of potentially loosing in an auction. In addition, stringent pre-qualification requirements and penalties create additional barriers for

participation for smaller market players with weak balance sheets. Cost of debt seems to be unaffected by auctions, as debt providers typically sign a loan agreement only after the auction. In some situations, auctions may also reduce political risks for debt and equity providers, due to their positive effect on the stability of support schemes. This study is a first step in mapping the different effects of auctions on financing, some of which affect cost of capital in a positive way and some of which in a negative way. The next step will be to undertake individual cases studies to investigate which of the effects prevail in real market situations, and conducting further empirical research, before developing policy recommendations on how auctions could be designed so that they contribute to de-risking renewable energy investments in the future.

	Cost of Equity	Cost of Debt
Margin depression	decrease	decrease
Support scheme sustainability	decrease	decrease
Lower remuneration	increase	increase
Allocation risk	increase	neutral
Non-compliance risk	increase	neutral

Figure 1: Impacts of auctions on financing conditions. Note: full list of effects not presented here

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