

# Who Knows What: Information Barriers to Efficient DER Roll-out in the U.S.

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## 1. Motivations underlying the research

Distributed Energy Resources (DERs)—rooftop solar, batteries, demand response, and other resources in the electricity distribution system, which are often located behind the customer’s meter—are increasingly wide spread. The multilayered effects they cause, including emission impacts and changes to energy system operations, have spurred a flurry of policy discussions and research into the measures needed to optimally facilitate the roll-out and integration of these resources: market design reforms, adjustments in DER compensation and retail rate design, potential changes to network ownership, changes to network planning processes etc.

The majority of the present analyses in this space relies on the assumption of electric power distribution system being characterized by complete and perfect information. However, in practice these assumptions may not hold true, especially for non-utility stakeholders. This limits the insights that can be gained from such “first-best” analyses for real outcomes and implies that research would need to account for the true distribution of information across agents to understand the impacts of DER-related policies.

This paper attempts to identify and analyze the information barriers facing DER deployment in the U.S. We argue that DERs not only amplify the existing information deficiencies in the electricity sector, but also introduce a novel set of information issues.

## 2. A short account of the research performed

Our analysis draws on insights from three sources. First, we survey various U.S. electricity sector stakeholders. We want to gauge the importance of the information issues and the information needs remaining unfulfilled. We thus ask the respondents to quantify the effect of missing or incomplete DER-relevant information on their organization and to state whether they see the need for new regulation to ensure the availability of DER-related information. We also provide a list of information areas, asking to evaluate the relevance and the availability of the individual items.

Second, we review state-level proceedings to identify what processes information problems affect and the various ways in which policymakers tackle them. Finally, we review engineering and economic literature on DERs for findings on the role of information in the context of DERs and the optimal policy response.

In the paper, we present the survey results and use them to identify the aspects of DER roll-out that are particularly affected by information problems. We study four of these aspects – interconnection, optimal DER remuneration, NWA and consumer information – in greater detail, discussing the reasons for information problems and the current solutions. That analysis is largely informed by state-level proceedings.

## 3. Main conclusions and policy implications of the work

Survey results indicate substantial but heterogenous information problems around DERs. In particular, representatives of DER-centric organizations, such as DER developers, and environmental groups reported experiencing systematically greater information barriers than utilities and consumer represen-

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tatives. Information about distribution networks characteristics is identified as the main information bottlenecks: most of the surveyed non-utility stakeholders perceive that this information is highly important but insufficiently available. As distribution network characteristics drive location-specific social and private values of DERs, lacking access to distribution network characteristics, can affect the interconnection processes as well as the ability to set optimal DER remuneration and optimally use non-wire alternatives (NWAs). Consumer data is also frequently missing in the DER context. We then outline some of the policies necessary to ensure an efficient DER roll-out.