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HOW TO MAKE DISTRIBUTED ENERGY RESOURCES WORK FOR TEXAS

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The Value of DERs

Distributed energy resources (DERs) are any kind of resources located on the distribution system, rather than coming from generators. The term applies to a variety of technologies, including rooftop solar, energy efficiency, demand response (where electric customers receive incentives to curtail their power usage during peak demand periods), storage and electric vehicles.

DERs can provide significant value both to the consumer and to the electric grid. Most obviously, resources like storage, solar and energy efficiency can help the customer avoid purchasing as much electricity from their provider at higher retail rate.

Likewise, by meeting a portion of electric demand, DERs mean that distribution utilities or retail electric providers do not have to purchase as much electricity from generators, thereby lowering their costs and wholesale market costs.

When aggregated, DERs can also help utilities avoid or defer infrastructure costs, such as building a new distribution feeder or upgrading substations.

By using cleaner resources or avoiding or shifting consumption to other times during the day where renewables may be the marginal unit, DER lowers wholesale energy costs and reduces overall emissions.

The Role of Distribution Utilities

While the competitive generation market throughout much of Texas is well known, electric distribution remains under a regulated monopoly system. Distribution utilities, also known as Transmission and Delivery Service Providers (TDSPs), are responsible for the “poles and wires” of the electric system. They ensure that electricity can be safely delivered to your home, maintain and repair lines, and read meters. TDSPs remain regulated monopoly entities, and all customers within a TDSPs service area receive the same services through their designated TDSP.

All distribution utilities engage in some form of distribution planning. Utilities typically look ahead somewhere between two and 10 years to try to identify locations where infrastructure will need to be replaced, new infrastructure added or where infrastructure is approaching the end of its useful life.

For those utilities subject to state commission authority, these processes are subject to state oversight, and the costs incurred by the utility in undertaking distribution planning are subject to state commission approval in a rate case proceeding.

The most fundamental purpose for distribution system planning is to bring visibility into existing utility practices which would otherwise be obscure to market participants and regulators. Transparency in the planning process lets people see how a utility came to certain planning decisions and helps utilities themselves rationalize their practices.

Distribution planning can also help the distribution system be ready for future changes to customer demand and for the effect of new technologies on the system as a whole.

How to Integrate DERs into the Grid

The availability of information about “hosting capacity” is critical for the development of DERs on the grid. Hosting capacity is the amount of DER that can be accommodated in an area without adversely impacting power quality or reliability under current configurations and without requiring infrastructure upgrades.

The value of DERs can vary widely depending on the specific location they are placed. Yet individuals or entities interested in building out DERs do not always have the information needed to make good placement decisions. Some jurisdictions post public maps showing hosting capacity at various locations. This information provides the market with an identification of areas with available capacity which may result in a greater likelihood of being able to interconnect their projects at that location successfully.

Hosting capacity can be used not only to support the market development of DER, but can be used by the utility itself for its distribution system planning.

Texas should also review its rules governing interconnection. With increasing amounts of DER, in particular distribution-level solar and energy storage, it will be important for Texas to have up-to-date interconnection rules and practices that can accommodate these emerging technologies.

Distribution utilities can also use information from the interconnection process to identify areas where solar resources are seeking interconnection at greater numbers than anticipated.

Policy Takeaways

Distribution utilities should engage in distribution planning and make the process and results transparent to the public and market participants.

The Texas PUC should require transparent distribution planning where authorized, and should require utilities to consider non-wires alternatives before embarking on expensive grid upgrades.

Hosting capacity and interconnection practices should be updated to ease expansion of DERs.

CONTACT US

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