The Road to Distributed Generation: How to Avoid the Bumps

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Distributed generation (DG) is receiving much attention as a resource that can facilitate the development of a smarter, more resilient, and more sustainable electric grid. Several jurisdictions, including New York, are considering a revision of the traditional utility rate paradigm, with utilities playing the role of coordinator between distributed resources, including DG, and consumers. For DG to play such a pivotal role in the smarter distribution system, however, stakeholders will need to address and overcome several regulatory, contractual, and financing challenges.

Getting the Connection

A primary impediment to DG development is regulatory uncertainty. In many jurisdictions, a potential DG host (such as an owner or operator of a commercial or industrial facility contemplating a DG installation), faces the prospect of regulation as a utility, and the associated or perceived administrative burden of subjecting its business operations to agency scrutiny and review. Coupled with the complexity of installing a DG facility (electric interconnection, environmental assessment, etc.), the prospect of agency regulation could be daunting. It is imperative for stakeholders to lobby for clear and definite rules that exempt the owners or operators of DG facilities from regulation as utilities, with the exception of matters pertaining to safety, environmental protection, and reliability.

Electric interconnection rules are another potential impediment to DG development. Some utilities maintain cumbersome and inefficient rules for review of proposed DG interconnections, and for the actual, physical interconnection to the grid. These rules in some instances allocate unduly high costs for system modifications to the DG facility owner. Additionally, interconnection study periods are often protracted. Lenders, developers, and hosts may, and often do, abandon plans for DG deployment if the timeframe for testing and study threatens a project's economic viability.

Making It Pay

With regard to economic viability, the owner of the DG facility and the host (assuming the host opts not to own the DG facility) need to consider the revenue impact related to the DG facility producing excess generation. In some jurisdictions, the host as the titled owner of the electricity produced by the DG facility may be able to inject the excess electricity into the grid in return for a payment or credit (known as net metering). The host in such an arrangement typically receives a bill credit for each kilowatt-hour injected. The credit may be equal to the recipient utility's retail rate, or it may be a "wholesale" rate determined by reference to a real-time price established in the market administered by a regional transmission organization or independent system operator.

Net metering arrangements are facing enhanced scrutiny in many states, with some calling for the downward revision of the credit mechanism while others advocate for the abolition of such arrangements altogether. The potential for a net-metering outlet to become unavailable (through regulatory or legislative action), places the host in a position of finding an avenue for disposing of the excess generation for economic value. The absence of that additional revenue, which may be used to offset mandatory payments to the developer (take-or-pay charges), could impose serious economic stress on the host.

Financing the Project

Financing considerations factor prominently in DG development. Certain hosts elect to self-finance the installation of a DG facility, and such a capital outlay and combination of debt has important impacts for the host's balance sheet. An alternative to self-financing is the third-party financing model using a power purchase agreement (PPA) or energy service agreement (ESA). Under this model, the host agrees to purchase all of the thermal and/or electric output of the DG facility from the third-party owner over a long term. Additionally, such a structure could be accounted for as an operating lease (and not a capital lease) on the host's books.

The financing community continues to develop this third-party PPA/ESA product, but certain challenges exist in PPA/ESA forms currently being offered. For example, certain models are overly lengthy and complex, and reflect performance, breach, and liability provisions skewed in favor of the developer. Additionally, these contracts confer significant and material rights on lenders, thereby forcing the host to balance its economic and performance interest against those of the developer and the lender.

Regulatory agencies and legislators are considering significant rate and market design policies and structures that will facilitate the development of DG, and DG is slated to play a pivotal role in the evolution of the smart and sustainable electric grid. But for these efforts to succeed in stimulating the development of DG, appropriately balanced policies, procedures, and contracts will need to be established in order to surmount certain impediments, including regulatory uncertainty, protracted electric interconnection procedures, the unavailability of net metering, and the dearth of financeable PPA/ESA models. ■

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