



Distributed Energy Resource Roadmap Workshop

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Albany, NY

Facilitated Q&A with Audience Participation

Moderator

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Resource Development

Technological advancements and public policy initiatives are encouraging greater adoption of Distributed Energy Resources (DERs) to meet consumer energy needs as well as system needs. DERs offer the potential to make load more dynamic and responsive to wholesale market price signals, potentially improving overall system efficiencies. This morning's conversations touched on many of those opportunities. To assist the NYISO in focusing our efforts in developing and prioritizing its work on the DER Roadmap, we would appreciate your feedback on what the future holds for resource development.

1. *What is the range of estimates in the potential growth of distributed resources we should be expecting to participate in the wholesale markets in the next 5 years?*
2. *What types of technologies will likely be the first to emerge in this timeframe?*
3. *What are the highest priority barriers to address (that are within the scope of NYISO's responsibilities to resolve) that are confronting the expansion of distributed resources into the wholesale market?*
4. *What additional information can the NYISO try to provide developers and operators to help with investment decisions?*

Wholesale Energy Market Participation

The Distributed Energy Resource (DER) Roadmap highlights the opportunity to open up the wholesale energy markets to increased resource participation, particularly in the real-time energy market.

1. *Is it reasonable to expect that distributed resources will possess the technical and physical capabilities to provide these services and take advantage of this new opportunity?*
2. *What other services would DERs likely target for participation in wholesale markets?*

Participation in retail and wholesale markets

Many Distributed Energy Resources (DERs) will be connected to the distribution networks and capable of providing distribution-level services, such as feeder unloading, to its distribution service provider. Some DERs may choose to participate in the NYISO's wholesale markets and provide services to the wholesale markets. The NYISO recognizes that there may be additional value streams for DERs for the simultaneous participation in the wholesale markets and retail programs. However, there are several operational and market challenges with simultaneous participation in wholesale and retail markets.

1. *What roles do you envision DERs fulfilling in wholesale markets, retail markets or load management services?*
2. *Is it reasonable to expect that DERs could fill these roles simultaneously, or would an alternative be for a DER to self-select which services it was providing at a particularly time and only offer those services to one provider?*
3. *What concerns should the NYISO envision with DERs having this optionality? Are there alternatives to offering this optionality that should be considered?*

Planning

Markets are currently primarily served from large central station conventional resources that are developed and maintained to deliver services to the wholesale markets. The development of Distributed Energy Resources (DERs) may be driven by the desire to provide a variety of different services and address different needs. These commercial operations decisions may change over the lifetime of the resource, and the relative priority for participation in wholesale markets versus retail markets or other commercial considerations may result in greater variability of resource participation in the NYISO's markets. As the markets evolve from central station to a portfolio with increased levels of DERs, planning processes will need to consider the long term participation of these resources in order to facilitate an efficient and reliable long term planning outcome.

1. *What assurances can the DER community offer to grid operators and planners that the resources they are aggregating for delivery into wholesale markets will be available to the markets over longer periods of time?*