

CHP TAPs Engagement Role in Facilitating New Grid Markets for CHP Services

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As states move towards a decarbonized future significant changes to the grid will be necessary to accommodate foundational shifts in the generation supply mix.

New York State law, and similar legislation or proclamations in other states, either mandate or set targets for 100% zero carbon electricity by a date certain²the next couple of decades.

As the proportion of assets supplying power to the grid shifts from baseload to variable generation resources, such as wind and solar, the tools used by grid operators to maintain reliability will change markedly.

In New York, as in most states, the grid operator utilizes markets as an important mechanism for maintaining reliability, balancing the system, providing resiliency through extreme weather events, and addressing natural or man-made disruptions of a sustained duration.

At a recent webinar Mike Swider, Senior Market Design Specialist at the New York Independent System Operator (NYISO) delivered an informative and illuminating presentation describing several NYISO Market Initiatives with potential implications for CHP³

The grid of the future will be dominated by variable energy resources. CLCPA required the New York Public Service Commission (NY PSC) to establish a program by June 30, 2021 to get the State to 70% renewable electricity consumption 2030 and 100% "clean energy" (including nuclear) electricity by 2040.⁴ There are certain functions, important to reliability needs, that cannot be performed by variable energy resources. As a consequence of the significant and rapid deployment of variable grid resources the NYISO is looking at comprehensive changes as to how they pay for Resource Adequacy.

With the anticipated asset mix in New York Mr. Swider of the NYISO states that electricity itself will be relatively cheap. On the other hand, the demand for and the prices paid to a variety of reserves will be

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² New York State law mandates 100% zero-carbon electricity by 2040

³ *Grid in Transition: DEFRs and Dispatchability*. Mike Swider Senior Market Specialist, NYISO. Prepared for Northeast CHP Initiative (NECHPI) Webinar CHP's Role in Decarbonization. January 27, 2022
https://www.dropbox.com/s/pkxkk6e9mgwoj57/NYISO_GIT_DEFR_CHP_Final.pdf?dl=0

⁴ New York State approves first expedited power transmission project, supports renewables. Posted 22 November 2020 by Kevin Adler, Chief Editor, HIS Markit. Source: <https://cleanenergynews.ihsmarkit.com/research-analysis/new-york-state-approves-first-expedited-power-project.html>

quite high as the services they provide become ever more critical. This will represent a revenue opportunity and one that will be developing in the near future.

Swider noted that within the class of dispatchable resources, the most reliable resources are those that are already online; for example a generator that is connected to a load and able to inject power into the grid taking a signal sent to the generator by the grid operator. Market participants who provide grid services will be paid for the services they provide for assets that are online, serving a load and are able to shed some load and inject into the grid.

The Grid in Transition engenders a set of new market initiatives that will likely create revenue opportunities in the future for CHP. Swider points out that *to the extent that a Combined Heat Power resource can follow a NYISO dispatch signal it can participate by selling energy, reserves and capacity*⁵ Furthermore, these resources will be needed in significant capacity, so that the opportunity created is extensive.

We see an important takeaway not only for our CHP TAPs in NY/NJ and New England, but for all CHP TAPs nationally. The transition to a decarbonized electricity supply, necessitates a transformation of the grid. CHP TAPs will find it ever more advantageous to engage with grid operators, planners, and grid market design staff. There will be a large and growing benefit to the TAPs, end-users, and stakeholders that we keep abreast of the performance attributes, asset products, and grid services that will be in demand in the future.

The CHP TAPs can function as a convening authority to facilitate conversations between and among the grid operators and planners on the one hand, and the CHP design/developers, the end-user communities and other stakeholders who serve as influencers and thought leaders.

The NY/NJ CHP TAP has conducted several meetings and follow up conversations with our ISO, the NYISO. The sharing of ideas and providing education and outreach concerning AMO's flexible CHP development initiatives has been instructive for the NYISO and for the CHP TAP. This has taught our CHP TAP that there is real value in establishing a more consistent and deep communication between the ISO's and the CHP market participants. This dialogue can set the stage for the CHP market to better prepare themselves to design, configure, set optimization algorithms, asset communications and controls in a manner that best serves expected future market needs.

The grid of the future will require a large and growing share of products and services to facilitate decarbonization of electricity supply. Markets need to fully compensate resources for flexibility and reliability. The national network of US DOE CHP TAPs can play an invaluable role in engagement with the key stakeholders, end users and decision makers. The CHP TAPs can facilitate dialogues, structure education and outreach and provide unbiased information to ensure that decisionmakers and all actors across the CHP supply and utilization chain stand ready to deliver the services that these fast-developing markets will need.

⁵ Ibid., page