Natural Resources Defense Council

Comments on Energy Efficiency as a Supply Resource
July 25, 2014

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Dear Mr. Star:

Thank you for this opportunity to submit comments regarding the Illinois Power Agency's (IPA) proposal to consider a procurement of demand-side resources. A negawatt procurement to address "super-peak" demand—if properly designed—would likely benefit Illinois ratepayers and residents by reducing energy costs and contributing to a cleaner environment. Some of the benefits directly follow from shaving super-peaks in the load curve, while additional benefits flow if this procurement spurs investment in projects that save energy year around. The IPA should bear in mind certain objectives (described below) related to these benefits and design the procurement accordingly. Several variables will determine the success of the procurement in meeting these goals, so the IPA should be wary of the possible downsides and pitfalls when designing this procurement.

It is also important to note the other mechanisms that would help drive investment in projects that achieve the stated goal of inducing peak demand savings. For example, making a performance incentive available for programs funded pursuant to Sections 8-103 or 16-111.5B of the Public Utilities Act for energy efficiency programs that deliver on-peak savings. In addition, modifying how the total resource cost test is calculated to more accurately reflect the benefits of efficiency improvements, including impacts on peak load and the effects of savings on the regional price of power, would also help achieve greater peak savings.

That being said, a procurement of negawatt-hour blocks is a promising, additional device to mitigate super-peak demand. Before conducting the procurement, however, it might be advisable to gauge the potential interest of demand resource providers in order to assess whether

this procurement would actually motivate any new entry into the energy efficiency (EE) and demand response (DR) markets or expansion of existing EE/DR programs. Experience in the PJM and ISO-New England (ISO-NE) forward capacity markets suggests that the bulk of the bids would likely come from programs that have other significant sources of revenue, such as those implemented pursuant to government mandates.[1] Commenters point out that capacity payments alone typically do not provide nearly enough revenue to support the programs that are the source of the savings bid into these markets.[2] This past experience raises the concern that an IPA procurement might not actually contribute to lowering peak demand if all of the procured super-peak savings were to come from existing programs that would happen even absent the procurement. If those savings otherwise would have been achieved, this procurement would simply serve to make existing programs more profitable to the providers.

Objectives of a negawatt procurement

The stated objective is to reduce peak demand in a way that lowers the cost of electricity service for the universe of potentially eligible retail customers served by the IPA. Therefore, the savings should come from projects that will, in aggregate, reduce costs for that universe of customers. It should not matter that the project is sited at a facility or building that itself is not a potentially eligible retail customer. In fact, an exciting aspect of this proposal is that it could provide an additional source of revenue for large commercial and industrial efficiency projects. Because the IPA does not serve those customers, and programs that serve them cannot be bid into the incremental EE procurement under Section 16-111.5B, additional financial support for the programs in which they do participate is especially helpful. The IPA should consider limiting the procurement to participants in Illinois, at least initially, and explore expanding the procurement to providers beyond the utilities' service territory.

A secondary objective of the procurement should be to facilitate the integration of more variable resources (e.g. wind, solar) on the grid, which will be a growing challenge moving

[1] Capacity payments for negawatts provide a close parallel to the proposal under discussion, though the proposal contemplates procurement of negawatt-hour blocks to offset energy, rather than capacity.
[2] *See, e.g.*, Cheryl Jenkins, Chris Neme, and Shawn Enterline, *Energy Efficiency as a Resource in New England Capacity Market*, 2009 ECEEE Summer Study Proceedings at 182; Joel Fetter, *et al.*, *Energy Efficiency in the FCM: Evaluating the Business Case for Building EE as a Resource for the Electric Grid*, Booz Allen Hamilton, 2012 ACEEE Summer Study Proceedings on EE in Buildings at 127.

forward. The same kinds of products that would shave super-peak demand tend to be flexible resources that, in effect, make demand for electricity more elastic.[3] These products could also be utilized for their flexible capabilities to even out the load curve on relatively small timescales. So, including more flexible resources in the supply mix puts utilities in a better position to incorporate more renewable resources in their supply portfolios. Even absent more renewable generation, investing in more flexible resources, particularly dispatchable demand resources such as direct load control and other forms of non-economic demand response, can enhance system reliability.

Finally, allowing demand resources to compete head-to-head with traditional generation resources potentially lowers costs to ratepayers. EE and DR have proven to be cost-competitive compared to generation resources in the ISO-NE and PJM capacity and spot energy markets. Integrating demand-side options in energy markets, either in direct competition with traditional supply alternatives or through a separate procurement, likely improves the efficiency of those markets by providing an opportunity to better balance supply and demand upfront. In general, DR measures seem better suited than EE for cutting peak demand, so most savings in this procurement might come from DR programs. However, targeted EE improvements that address the particular contributors to super-peak demand spikes in the region could also lower costs and enhance system reliability at lower cost than generation by lowering peak demand (perhaps disproportionately to impact on overall demand) on a continuous, permanent basis.

Key design considerations and potential pitfalls

While the proposed procurement could reduce ratepayers' costs and bolster the growing energy efficiency industry if it is done right, market design is crucial to ensure it serves these purposes. First, it is critical that the savings delivered through this procurement be evaluated and verified as "real" inasmuch as consumers are paying for these savings and we are relying on the savings to enhance grid reliability. Therefore, these savings should be subject to measurement and verification (M&V) requirements just as stringent as the rigorous evaluation that utility efficiency programs undergo according to protocols established through the Statewide Advisory

[3] *See* Jim Lazar (2014), *Teaching the Duck to Fly*, Regulatory Assistance Project.

Group (SAG) collaboration and approved by the Illinois Commerce Commission. These protocols use deemed savings values where such values can be arrived at by consensus and included in the Illinois Technical Reference Manual (TRM). M&V in a negawatt procurement context is potentially more costly because the savings from each market participant must be verified, so the evaluation required is more granular than in the context of assessing savings at the portfolio level.

In addition to strict M&V requirements, the IPA might want to consider creating a pre-qualification process akin to the process developed by PJM and ISO-NE. In those markets, project sponsors must submit materials and receive approval to bid in the capacity markets several months in advance. The most important component of the pre-qualification package that bidders must submit is the proposed M&V plan, which will be used to document their savings. The ISOs review the bidders' plans to ensure compliance with their established protocols, which are laid out in manuals. The ISOs also retain the right to audit databases and documentation of reported savings. Care should be taken to clearly define ownership of eligible savings to ensure that savings cannot be claimed by more than one entity (e.g. the EE provider that installs the measure and the utility that provides the rebate).

Also, some limitation on who may be eligible to participate is probably desirable. For example, it may be appropriate to impose a minimum size requirement on participants. Participants also face substantial transaction costs, so small entities such as households and small businesses will likely only participate through an aggregator. Still, depending on any upfront costs of e.g. screening or qualifying bidders, a minimum threshold might make sense. The PJM and ISO-NE capacity markets require bids to be at least 100 kW, or approximately 500-1000 annual MWh. This minimum threshold ensures that administrative costs associated with assessing potential bids are not too burdensome.

Regarding the products to be procured, savings from both DR and EE measures should be allowed to bid. It is crucial to recognize that demand resources are diverse, and their relative value varies. In particular, DR measures typically only shift load to off-peak hours; they do not necessarily result in lower energy consumption overall. To the greatest extent possible, the proposed procurement should encourage measures that do not merely shift load, but also actually save energy year round. One consideration that would potentially affect the level of EE participation is the length of time for which EE resources can be bid. Commenters have

suggested that the higher levels of EE participation in the ISO-NE market compared to PJM is largely explained by the fact that only the first four years of savings can be bid in PJM, whereas ISO-NE allows payment for the full life of the EE measure.[4]

EE resources are also diverse, and some savings are more costly to acquire than others. Thus, setting a single clearing price for all EE savings irrespective of their source creates opportunities for "cream-skimming." Picking the lowest-hanging fruit also leaves "stranded efficiency" opportunities that are rendered more costly to attain down the road. The end result is that ratepayers might end up paying more for the same savings that could have otherwise been achieved more cheaply by the utility under the existing policy framework. The IPA should investigate, in collaboration with stakeholders, how to design market rules to minimize this sort of inefficiency. A possible fix is to conduct a tiered auction that differentiates products based on the value they provide with respect to regulatory goals.[5] This approach might also be used to differentiate DR and EE products based on the different benefits they each offer.

NRDC believes that savings from other programs (e.g. utility efficiency programs) should be permitted to participate. Indeed, assuming that EE/DR programs would depend on substantial additional revenue, these resources must be allowed to participate in other programs. It would be problematic to procure savings to meet forecasted demand when the demand forecast already accounts for those savings, however, as ratepayers could end up paying twice for the same savings.

A potential virtue of the proposed procurement is that it could support the development of the EE sector by removing barriers to third-party participation. But, the IPA should be cautious to avoid creating conditions that would increase the cost of efficiency and/or confuse the market. Although increased competition can spur innovation, this benefit must be balanced against the fact that more competition among EE providers could drive up the price of efficiency for ratepayers generally by forcing them to raise their incentives to attract customers. Drawing in more market players could also lead to an undesirable situation where multiple providers would approach the same set of consumers offering the same or similar products or services. The worry

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[4] *See, e.g.*, Chris Neme and Richard Cowart, *Energy Efficiency Feed-In Tariffs: Key Policy and Design Considerations*, 2013 ECEEE Summer Study Proceedings at 310; Jenkins, *et al*. at 183; Luiz T. A. Maurer and Luiz. A. Barroso (2011), *Electricity Auctions: An Overview of Efficient Practices*, World Bank, at 101.

[5] *See* Neme and Cowart at 309-310. The authors suggest a pricing structure for energy efficiency savings that differentiates types of savings according to, e.g., impact on peak demand, comprehensiveness of the measure, and the market segment served.

has been raised in proceedings before the California Public Utilities Commission, for example, that there are "too many" efficiency programs operating in that state.[6]

The procurement should also be designed to minimize occurrences of supplier default. For example, the supplier may be allowed to obtain the savings elsewhere to compensate for the shortfall. Or, providers might be paid in stages so that receipt of the final payment is contingent on successful delivery of the committed savings. In the event of non-delivery, there are basically two options: 1) the supplier does not get paid for savings that are not delivered, and 2) in addition, the supplier is penalized for non-delivery. Building in a penalty might also help deter defaults and provide more protection for ratepayers.

Both ISO capacity markets require a financial credit or assurance before bidding and employ a penalty in the event of non-delivery. In PJM, the credit required is equivalent to the highest expected clearing price; the penalty is equal to the greater of (1) 20% of the market clearing price, or (2) $20/MW-day. Also, project sponsors can procure other resources to make up for any discrepancy if a project is not on track for timely delivery. ISO-NE requires financial assurance currently equal to $17.11 per kW not delivered. The ISO requires project sponsors to offset any shortfall by acquiring resources elsewhere; it then collects the full amount of the financial insurance that was credited upfront if a project is not completed by two years after the obligated delivery date.

In terms of ensuring that the delivered savings would actually be lower cost than supply-side alternatives, one option might be to conduct separate procurements for each type of product. In that case, only supply-side resources would set the clearing price for energy supply. However, a downside to this approach is that the price effects of curtailed demand during peak hours would be significantly attenuated.[7] Integrating both kinds of resources in a single market, as is done in the PJM and ISO-NE capacity markets, would likely lead to a more pronounced reduction in costs to ratepayer than a separate demand-side procurement. The IPA should further assess what approaches to addressing this concern would be feasible and desirable.

In sum, there are compelling aspects of the proposed negawatt procurement that suggest it could greatly benefit Illinois utility customers as well as the public at large. Yet, the ability to capture those benefits and avoid market inefficiencies turns on the design of market rules and

[6] California Public Utilities Commission, Decision Providing Guidance on 2013-2014 Energy Efficiency Portfolios and 2012 Marketing, Education, and Outreach, Decision 12-05-015 (May 18, 2012) at 157-161.
[7] Maurer and Barroso at 97.

administrative processes that would govern the procurement. The IPA should continue investigating this proposal while being mindful of other mechanisms that would help alleviate super-peak loads and grow the energy efficiency industry in Illinois.

Respectfully submitted,

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