COMMENTS OF THE CITIZENS UTILITY BOARD AND ENVIRONMENTAL DEFENSE FUND REGARDING THE IPA'S PROCUREMENT OF ENERGY EFFICIENCY AS A SUPPLY RESOURCE

July 25, 2014

On July 11, 2014, the Illinois Power Agency ("IPA") issued a request for comments in response to a June 18, 2014 workshop concerning the inclusion of energy efficiency as a supply resource in its procurement plan. The Citizens Utility Board ("CUB") and Environmental Defense Fund ("EDF") welcome the opportunity to provide the following comments

As the IPA noted last year, the incentives and procedures for the Section 16-111.5B incremental energy efficiency programs do not sufficiently capture energy efficiency programs that will lower demand during peak hours when price is at its highest.[1] These programs, often expansions of existing utility programs, are aimed at lowering consumption on an annualized basis. As such, they do not lead to sufficient peak demand reduction at times where absolute price and price volatility are highest, limiting the potential benefit to eligible retail customers.

CUB/EDF believe the IPA should procure energy efficiency as a supply resource in order to deliver the greatest possible benefit to customers. By targeting peak hours when demand and prices for electricity are highest, the procurement of energy efficiency as a supply resource will lead to lower prices during peak times as well as lower overall supply costs for all Illinois electricity customers. This will help the IPA meet its mandate of providing "reliable" and "affordable" electricity as described in the Illinois Power Agency Act.[2]

1. The IPA has traditionally looked at procurement blocks using regular definitions of those products as on-peak (16 hours on the 5 weekdays) or off-peak (8 hours on 5 weekdays, weekends and holidays). Should the IPA consider procurement of a new resource of demand reducing resources during the summer months for a narrower peak period? If so, how should that "super-peak" period be defined?

[1] IPA 2014 Procurement Plan at 86.
[2] 20 ILCS 3855/1-5(1).

Yes. Procuring a narrower "super peak" period demand reducing resource allows the IPA to more precisely target those hours of the day and year when electricity demand and price are highest. Procurement of these resources will help drive investment in energy efficiency and demand response programs in Illinois, and it will have direct monetary benefits to eligible retail customers since these resources are almost always cheaper than the cost of procuring the equivalent supply.

- In PJM, researchers found that avoiding just 0.9% of the system's peak load yields an energy market price reduction of $8-25 per MW-hour, or 5-8% on average.[3]
- A recent Brattle Group report looking at five Mid-Atlantic states found that cutting peak demand by 3% leads to a price reduction of 5 to 8% and potential savings to customers of $73 million per year in the region.[4]
- In Utah, the Rocky Mountain Power Company invested $47.5 million in energy efficiency and peak reduction resources in 2012. The investment yielded 236.2 GW of savings that year and realized reductions associated with peak management activities of approximately 150.4 MW. Net benefits to customers based on the projected value of the energy savings over the lifetime of individual measures are estimated at $134.1 million.[5]
- An 2014 report by ACEEE looks at the cost of running efficiency programs in 20 states from 2009 to 2012 and finds an average cost of 2.8 cents per kWh—about one-half to one-third the cost of alternative new electricity resource options. The report repeatedly cites peak reduction as an important benefit of energy efficiency resources.[6]
- A 2007 report by the American Council for an Energy Efficient Economy (ACEEE) estimated the kW peak savings from several energy efficiency programs:

Estimated 2001 Costs and Benefits of EE Programs[7]			
	Program Spending ($ millions)	**Estimated Savings (MW)**	**Cost per Kilowatt**
California	971	3,668	$265/kW
Northwest	150	390	$384/kW
New York	72	263	$274/kW

There are a number of ways to define the super peak period. In its presentation during the workshop, CUB and EDF recommended that the IPA incrementally incorporate super peak demand reducing resources into its procurement, which will allow time for

[3] Gottstein, Meg and Lisa Schwartz. *The Role of Forward Capacity Markets in Increasing Demand-side and other low-carbon resources*. The Regulatory Assistance Project, 2010.
[4] Brattle Group. *Quantifying Demand Response Benefits in PJM.* PJM and MADRI, 2007.
[5] Utah Energy Efficiency and Peak Reduction Annual Report, 2012.
[6] Molina, Maggie. *The Best Value for America's Energy Dollar: A National Review of the Cost of Utility Energy Efficiency Programs.* ACEEE, 2014.
[7] York, Dan et al., *Examining the Peak Demand Impacts of Energy Efficiency: A Review of Program Experience and Industry Practices*. ACEEE, 2007.

market players to get used to the procurement process and develop increasingly sophisticated products.

Strategy	Procurement Year	Description	Peak Definition
Peak Hours	2015	Establishes a fixed set of peak hours and procures reductions during those peak hours for standard energy efficiency products.	The fixed set of peak hours should be summer afternoons between 2pm and 6pm, non-holiday weekdays, from June 1 – August 31.
High Load	Solicit a procurement operator during 2014-15 for inclusion in 2016 procurement.	Procure demand reductions for the highest load days of the year.	Choose High Load hours whose actual system load is predicted to be within 5% of the seasonal peak load forecast for the summer months, June 1 – August 31.
High Price	Conduct ongoing workshops with ComEd and Ameren	Set a market benchmark, and direct ComEd and Ameren to procure demand reductions through their voluntary programs when day-ahead wholesale supply costs exceed the benchmark price.	The high-priced hours can be determined by the wholesale day-ahead market prices in the PJM and MISO control areas.

CUB and EDF believe that these blocks should be purchased as part of the IPA's supply purchases, in the same procurement event and cleared on the basis of price just as with any other block energy purchase.

2. What types of products should qualify for delivery as a super-peak product? What measures can the IPA take to ensure that super-peak demand-side resources feature an actual lower delivered cost than supply side alternatives? Please provide evidence (either empirical or modeled) for demand-side resources with delivered costs that could be lower cost than supply side resources.

CUB/EDF see no reason to restrict the types of products that qualify as doing so may stifle innovation and prevent the development of a viable market. The IPA should set the requirements for super peak demand reduction (e.g. hours, days, quantity reduced, penalties for non-delivery, etc.) and allow bidders to participate in the procurement process based on these criteria.

The measure of cost effectiveness as compared with supply is simply the price point at which demand reducing efficiency resources clear as compared with their supply counterparts. As a worst case scenario, energy efficiency supply resources will simply not clear the market based on their cost competitiveness.

The wholesale electricity markets provide a good example of the cost competitiveness of demand-side resources as compared with traditional supply resources. As summarized in the following table, the fact that demand side resources continue to clear in auctions at PJM and MISO shows their value to the market and their ability to compete with more traditional supply:

RTO Demand Side Resources in PJM[8]			
Delivery Year	**Cleared Demand Response (MW)**	**Cleared Energy Efficiency (MW)**	**RTO Clearing Price ($/MW-day)**
2017-18	10,974.80	1,338.90	120.00
2016-17	12,408.10	1,117.30	59.37
2015-16	14,832.80	922.50	136.00
2014-15	14,118.40	822.10	125.99

3. Should a resource for this procurement also be eligible to participate in other energy efficiency (and/or demand response) programs? If so, how should the value of each be accounted for? For example, could a product have its kWh reductions separated between multiple programs? What timing challenges may result from including resources in both supply resource procurement and existing energy efficiency (and/or demand response) programs, and how can those be resolved?

While CUB/EDF does not believe participants should be barred from participating in other energy efficiency (and/or demand response) programs, it is important to avoid double counting energy savings. Double counting delegitimizes the program and undermines its ultimate goal of creating new energy savings opportunities. CUB/EDF believes the program bidders should be responsible for proving that no double counting has occurred. This requirement could be met with a simple clause in the EM&V portion of the contract and would require minimal extra work. If this burden of proof is met, CUB/EDF does not see a problem with separating distinct kWh reductions among different programs. Energy efficiency procurements and mandates should be evaluated for the times at which the kWh savings are achieved.

4. How could delivery of demand-side resources be metered and/or verified? What provisions should apply for non-delivery?

Quality measurement and verification of the delivery of demand-side resources will be essential components of a successful program. Customer meter data—especially interval data from recently deployed smart meters—provides an opportunity for measurement and verification. Likewise, penalties are important in order to discourage non-delivery.

5. What limitations, if any, should be placed on customer classes that could provide these resources? Specifically, should it only be potentially eligible retail

[8] 2017-18 Reliability Pricing Model (RPM) Base Residual Auction (BRA) Results Report. PJM Interconnection, LLC. May 2014.

customers, or all customer classes? Should the resources have to be located within the service territory of the utility to which they are delivered?

In the same way that traditional supply resources are not limited, CUB/EDF sees no reason to put limits on the type of customer class that provide these resources. In terms of location, however, CUB/EDF believes the proposed energy efficiency product is distinct from traditional supply resources. In order to provide verifiable reductions in the service territory for which the product is purchased, IPA might require resources to be located within the respective utility service territory, at least in the near-term. This will also limit administrative complexity and allow market participants to get comfortable with the procurement process. This will also provide opportunity for the product to be entered into wholesale capacity markets to capture full value for customers.

CUB/EDF would be open to allowing energy efficiency supply resources to be located outside of their respective utility territory once the market and market rules are better established after the initial phases of the program, but believe the IPA should consider resources at least located in one of the two service territories for whose customers IPA is procuring the product.

6. In 2014 the IPA is procuring energy blocks of 25 MW, down from 50 MW in previous procurements. What size block would be appropriate for this potential procurement?

CUB/EDF recommend the procurement of 100 kW negawatt blocks. It is important to allow this market to develop. As such, the IPA should procure negawatt blocks at a level that is small enough to allow for maximum participation while balancing administrative burden. It is important to note that this is sets a *minimum*—aggregators are still allowed to combine resources to bid in a larger savings amount if they choose. This allows flexibility and maximizes the likelihood of participation.

7. If the IPA were to propose the procurement of super-peak demand-side resources as part of its 2015 procurement plan, could these resources be procured for the upcoming delivery year (starting June, 2015), or should there be more time given to ramp up any new programs that would deliver these resources?

The IPA should develop the procurement of super-peak demand-side resources as soon as possible. Procuring these resources for the upcoming delivery year not only has the potential to deliver substantial monetary and energy savings, but it also provides the IPA will valuable information about how to conduct this procurement going forward. Even in the event that no programs clear in the upcoming procurement, IPA will be able to identify barriers to participation and work with stakeholders to address them for future years.

During the workshop, there was concern expressed about the capability of the market to be able to respond quickly enough to provide the necessary action by the time the super peak blocks began in June 2015, if there was no procurement event until April 2015. After discussions with several industry vendors, CUB/EDF believe that the following types of products could be ready by June 2015, even with less than 30 days notice:

- *Smart Thermostat aggregators*: By signing up customers who possess OpenADR-compliant thermostats and home internet connections,

aggregators could tap into residential demand reductions without the need for additional hardware installations.

- *Large commercial and industrial buildings*: Large commercial and industrial buildings that have made significant investments in building automation systems and building energy management systems could begin to participate in any program within even a days notice.
- *Other connected devices:* Other residential and commercial devices could be aggregator and entered into the market without additional hardware updates, as long as they were controllable and maintained a network connection accessible to an aggregator/provider, including curtailable Electric Water Heaters, Window A/C units with smart plugs, certain Electric Vehicle Charging Stations, connected Light Bulbs or Lighting Systems, Energy Storage systems, Pumps with Variable Speed Drives, and more.

8. Are there other approaches the IPA should consider in its procurement plan for procuring resources other than what it has traditionally procured that could lower the total cost of the portfolio used to serve eligible retail customers?

CUB/EDF support the IPA as it seeks to lower costs for retail customers and welcome further discussion concerning additional opportunities that accomplish this goal. The IPA should consider the procurement of demand side resources as capacity, particularly in light of the recent appellate decision on FERC Order 745. As the costs of storage continue to decline, another opportunity may be for the IPA to procurement of ancillary services. Another way to lower costs might be to suggest 16-111.5B programs move to separate out the kWh savings into the time in which they expect to occur, allowing IPA to procure programs directly that they believe are cost effective under a time-based framework even if they are not forwarded to them by the utilities.