

## Consideration of Changes to Load Drop Reporting Guidelines

### **Issue Statement**

The objective of the load forecast is to be accurate and unbiased. When available, estimates for load drop are accounted for (i.e., added back) in PJM's load forecast. Although the estimated load drop guidelines are adequate for market settlements, these guidelines may be incomplete for meeting the criteria for an unbiased load forecast.

Currently, there are guidelines for producing load drop estimates for customers registered as 1) a Demand Resource (DR), 2) Interruptible Load for Reliability, 3) an Emergency – Energy Only DR (for PJM initiated emergency) or 4) Curtailment Service Provider (CSP) initiated test events. However, PJM Economic programs and EDC or CSP initiated curtailments do not require load drop estimates to be provided to PJM. Without the availability of these estimates, the load drop will not be added back to load and therefore that load not included in the load forecast.

For load forecasting purposes, to properly estimate the historical load-weather relationship, it is appropriate to account for all load drops. This includes load drop estimates throughout the delivery year. This would also include not only those initiated by PJM, but also those initiated by an EDC or CSP.

### **Background/Example**

Load Management (LM) participants have actively curtailed load which is not always captured by PJM, but in accordance with the current reporting guidelines. By not including these reductions (i.e., load drop estimates) in load forecast modeling, there is a potential to underestimate future load and capacity requirements.

For example, an Electric Delivery Company (EDC) has 100 MW registered in the Demand Response (DR) program and included at the full 100 MW in the load forecast as a peak load reduction. The EDC curtails these customers under a state interruptible tariff for economic reasons. The zone's load has been lowered for each of the curtailment events. Under PJM's current load drop estimate guidelines, there are no requirements for estimating the impacts of these events. When PJM models the load for load forecasting purposes, the model will underestimate the load-weather relationship and thus under-forecast the load. With the 100 MW shown as a LM peak load reduction in the forecast, the DR is potentially double-counted.

PJM has 8,979 MW of LM for 2014 in the [2011 PJM Load Forecast Report](#). Since this forecast was released, additional LM has been subscribed to and recognized by PJM. The 2014/2015 capacity auction cleared 14,118 MW of LM for a 52% increase over the last year's auction results. With the increase in LM, there is a heightened need to adequately account for all load drops in the load forecast and planning.

## **Issue Source**

The PJM load forecast is the basis for determining future year generation and transmission capacity resource requirements for the RTO and individual Zones. PJM has established a number of conservation programs to assist in reducing demand and capacity by allowing customers to participate in Load Management programs. Customers that participate in PJM Load Management programs are allowing PJM to interrupt their service and thus reduce capacity needs. Therefore, the formula for determining load responsibility for the RTO and individual Zones (with the information source being the 2011 PJM Load Forecast Report) is:

$$\begin{array}{r} \text{Peak Demand Forecast (Table B-10)} \\ \text{Less} \quad \text{Load Management (Table B-7)} \\ \hline \text{Equal} \quad \text{Load Responsibility (in MW)} \end{array}$$

PJM Manual 19: Load Forecasting and Analysis and Attachment A: Load Drop Estimate Guidelines prescribes the methodology for calculating load drop estimates and forecasting load. PJM load forecasting methodology uses complex statistical models to forecast peak demand. The parameters of the model are estimated from the daily peaks of a historical period. Manual 19, Section 3.2, defines the dependent variable – load for the non-coincident models, zonal hourly metered load data are supplemented with estimated load drops (as outlined in Attachment A) to obtain unrestricted hourly load. The maximum unrestricted load for each day is used in the non-coincident regressions and likewise, the PJM coincident unrestricted load is used for the coincident regression and the sum of the unrestricted load is used for the net energy models.

## **Stakeholder Group Assignment**

As assigned by the PC.

## **Key Work Activities**

1. Examine current load drop estimate reporting guidelines and methods to account for load drop in PJM's load forecasting
2. Investigate existing rules for customers/sites participation in both EDC or CSP curtailment programs and PJM curtailment programs.
3. Examine the load drop cap at the nominated DR/ILR amount for market purposes and determine the appropriateness for planning purposes.
4. Propose alternative guidelines regarding load drop accounting.

## **Expected Deliverables**

Manual 19, Attachment A language to modify load drop estimate guideline and methods to account for load drop in PJM's load forecasting

## **Expected Overall Duration of Work**

## **Decision-making Method**