Who should have oversight and control over the M&V Process?

Wendell Miyaji, Sr. Director, Systems, Comverge, Inc.

In most commercial transactions, the provider of the product or service is generally responsible for implementing the processes that lead to the rendering of a bill. A traditional utility installs and reads electric meters and then invoices based on those measurements. Similarly, in the case of demand response (DR), the analogous process would be to have the DR aggregator responsible for making and reporting the measurements of the curtailed load in order to submit a bill.

It is easy to see why this model has developed in traditional transactions. The seller, in this instance the DR aggregator, has provided a product or incurred service expenses on behalf of its client. The seller has a responsibility to compensate its suppliers in a timely manner. Hence the seller has the highest motivation to complete these activities promptly. The seller must be precise and accurate in order to maintain the confidence of its client. The seller is also motivated to provide a quality process by balancing cost and functionality, therefore building these processes into the service would be the most efficient method. Like any transaction, the client provides the oversight to insure the measurements are equitable.

In practice today, particularly at the DR retail level, there are many different entities performing the M&V function. These include:

- the load serving entity (LSE);
- the demand response aggregator;
- a third party evaluator selected jointly by the LSE and DR aggregator; or
- a third party evaluator responsible to the relevant utility commission.

Of these entities, the demand response aggregator has the capacity to perform the M&V function the most economically and efficiently since the aggregator is already performing real time monitoring to support the operations. In addition, if the aggregator is using standards based, revenue grade meters all interested parties could have access to the settlement data collected from the meters and/or physical access to the meters.

The processes and procedures for M&V should be designed for timely settlement. Ideally data would be generated and reported in near real-time or the day following a demand response event. Automating these processes would enable the near real-time M&V reporting that buyers need to support their grid operations. Evaluation of the previous day's demand response event would flow into the day ahead planning process. To further that, a real time estimate of the available demand response would be available. For example, for an air conditioning load control program, near real-time reporting of energy use from a statistical sample of end-use appliances is much more accurate than estimates based on historical regressions. Real-time estimates will capture effects that are not modeled in regressions. This same near real-time reporting would also provide an immediate estimate of the reduction realized at the end of the event. Reporting of demand

response similar to the reports for power generation and power quality would lead to more ubiquitous use of demand response.

Similar to electric generation reporting, with near real-time M&V reporting for demand response, MW reductions can be reported seamlessly and systems would be developed to stream or post results. DR providers in wholesale markets already post results to the ISO/RTOs in near real-time.

In many current programs there is often an attempt to minimize the deployment of measurement equipment and an attempt to substitute that with very complex statistical methods. The reductions do not measure individual events but aggregate multiple events and then use regression techniques to estimate the reduction. This M&V model does not lead to timely settlement. Also, this after the fact method provides no useful real-time data to influence events in progress or improve load shed predictions prior to events.

Placing the responsibility for M&V with the entity that is best positioned and with the proper motivations to perform the function in a timely, precise and accurate manner will support the expanded deployment of large scale demand response systems.