NET ENERGY METERING SENIOR TASK FORCE (NEMSTF) WORKING PAPER
Stakeholder Interest Identification Regarding Net Energy Metering (NEM) Projects
Preliminary Interests as of March 7th, 2012

This document is targeted to NEM stakeholders to identify, document and share those interests they have with regard to NEM projects and evolving NEM initiatives. Please circulate among your departments and resources (e.g. Legal, Contracts, Metering, Settlements, Planning) that deal with NEM projects.

The NEMSTF Facilitation Team will publish an anonymous summary of the responses as soon as possible prior to our March 7th session. We also plan to incorporate a NEM Panel Discussion at the start of the first Interest Identification session to have stakeholders share their NEM experiences and help us generate and capture a pool of robust interests.

***NO RESPONSE NECESSARY**: ~~Please edit this document, save and return to miehlt@pjm.com by Monday, March 5, 2012.~~*

Our Interests with respect to NEM Resources and Projects include:

1) Establishment of a revenue stream from net excess generation injections to the electrical system for cost recovery purposes.
2) Accounting for MWhs of net excess generation within PJM settlement systems.
3) Possible financial recovery of net excesses for NEMs that are not hourly metered by have "net excess" for which they are paid per retail tariffs at some measured interval (i.e., monthly, yearly). Our thinking is that there might be some revenue recovery possible through the PJM settlements system (MSRS) in the same manner that end-of-the-month meter corrections are accounted for and allocated on both a MWh and dollar basis (i.e., "net excess" MWhs or KWhs are input at end of month, which could accommodate yearly, with the charges spread across the EDC's LSEs and the credits going to the EDC to partially offset what the EDC is required to pay the NEMs @ retail.
   a) Similar interest added for unaccounted for energy ("UFE")
4) Accommodation of PJM eMTR model to NEMs injecting excess to the grid
   a) Including an interest for the potential of "aggregators"
   b) Include an interest to clarify the phrase "to the grid"
   c) Note – the interest assumes use of eMTR requires hourly metered NEMs
5) Accommodation of PJM zonal bus models to aggregate small NEM excess injections
   a) Consistent with bus voltage levels;
   b) Include an interest to understand modeling effects and timing of NEMs (PJM and Member models are currently updated on a quarterly timing)
6) Adaptation of PJM business rules, tariffs and agreements to all of the above.
7) Aggregate Net Energy Metering (ANEM) concept and incorporation within wholesale markets as administered by PJM.
   a) Global interest for Nos. 7, 8, 9, for ANEMs, VNEMs, CEFs - Understand permissibility/feasibility of taking title to energy for NEM energy produced subject to statutory laws and regulations.
   b) Global interest for Nos. 7, 8, 9, for ANEMs, VNEMs, CEFs – Understand circumstances and methods to model these as a "generator".

8) Virtual Net Energy Metering (VNEM) concept and incorporation within wholesale markets as administered by PJM. (example - single customer focus)
9) Community Energy Facility (CEF) concept and incorporation within wholesale markets as administered by PJM. (example – multiple customer focus)
10) Battery assets (i.e. electric vehicles) may participate in NEM in DE per legislation (9/2009). Interest to establish PJM rules/tariffs for consistency across jurisdictions on this topic.
11) Consistent with FERC and State Regulations or laws, clarify or define overarching jurisdictional issues with the FERC staff, i.e., QF versus BTM versus NEM versus when excess generation injected to the grid becomes a wholesale sale under FERC jurisdiction.
    a) Include interest to make clear the associated PJM requirements, accountabilities, obligations, liability(ies)
    b) Note - Nos. 11 , 13 and 15 appear to have commonality of interest – seek to group/refine
12) A party selling energy to distribution cooperatives that resell the energy to the ultimate end-user. As such, the party does not have any NEM projects. However, some of the distribution cooperatives that purchase energy from that party have NEM projects and for that reason the party is interested in this issue. Our Company plans for and acquires the future energy needs of its member-cooperatives. As NEM projects continue to increase in number, they could affect future energy requirements. Additionally our company will follow the development of net metering policies because they could influence the development of distributed and customer owned generation which would impact planning.
13) Conclusively establishing at what level of output, relative to the self-generator's usage, the customer becomes an independent power producer, subject to all applicable PJM requirements associated with the status of being an independent power producer, and no longer qualifies as a net metering customer.
14) Establishing clear and consistent definitions of terms, especially as these terms might be used in PJM tariffs, procedures, and business rules.
15) Identifying and clearly defining state and federal jurisdiction over interconnections and transactions for purposes of inclusion in PJM tariffs, procedures, and business rules. Such definitions should be flexible yet robust enough to accommodate a variety of operational situations. Also, to the extent load is shifted from one transmission node to another as referenced below, determine how the settlement should be handled.
16) If multiple distribution circuits feed from the same node, but only one distribution circuit has a pre-existing delivery point that has triggered FERC jurisdiction, are the other distribution circuits that are feed from that node also considered FERC jurisdictional by virtue of their sharing some common facilities (e.g., transmission to distribution transformer) between the PJM node and where the facilities divide-off into multiple distribution circuits?
    a) Note – investigate. General sense is that the issue is addressed by <u>assets</u> registered with FERC rather than <u>conductivity</u> of adjacent assets establishing nexus.
17) What is the implication for switching loads among different circuits? Our company is ramping up its Distribution Automation Process. Therefore, we are starting to migrate functions and swap load among circuits as part of a normal course of business with the goal of optimizing efficiency. This means that, on any given day, load could be swapped among many different circuits. Given the

dynamic nature of this load and the possibility that different load and delivery points could be moved to different circuits and even to different PJM nodes, what are the implications to defining a particular circuit as FERC jurisdictional, when the characteristics (load served) of that circuit could change several times a day?

a) New Interest – Understand and recommend suggestions regarding "feeder" metering and algorithms

18) Thoroughly evaluating how metering, accounting, billing, settlement and modeling functions may be affected by any proposed needed changes identified by the Task Force. Of particular concern is whether additional metering, enhancements to settlement systems, and new measurement and verification processes or technologies may need to be installed to accommodate changes to PJM tariffs, procedures, or business rules that may occur as a result of the work of the Task Force.
    a) New interest - Another area of interest is how multiple LSEs on a single Transmission node should be addressed
19) Assuring that any recommendations resulting from the work of the Task Force avoid the imposition of additional costs and administrative burdens to the maximum extent practicable.
20) New item: understanding aggregation:
    a) Where aggregation concerns meter aggregation (e.g. a customer with multiple sites/meters to be aggregated and a NEM source to be allocated to these sites. Understand any laws impacting proximity or service by same EDC (Wawa example),
    b) Where aggregation refers to an Aggregator of NEMS customers and participating in PJM administered wholesale markets. Understand the aggregators participation and rights (example regarding right to take title for NEM energy or capacity),
    c) Where aggregation refers to the EDCs aggregating numerous NEMs at a node or a bus and presenting PJM with a "net aggregated" value
21) New item: interest for those NEMs with generation in excess of 100% of load. Understand the treatment of energy generated in excess of i) of load and ii) of statutory or regulatory cap/boundary
22) New item: Recognizing that EDCs will be presented with NEM challenges – an NEMSTF interest includes the ability to preserve the reliability, interconnection, accuracy of settlements within PJM operations and administered wholesale markets. An interest to ensure that aggregated NEM injections are shared with PJM
23) New item: understanding the effect of aggregating excess system distribution generation above a "threshold" and onto a transmission bus; Determining how to model aggregated excess NEM distribution system generation entering the transmission (example – PJM transmission model is currently updated quarterly)
24) New item: Locationally recognizing wholesale sales when the transmission bus is not acting as a aggregate excess system generation (energy, MWh)
25) New item: understand capacity impacts to the
26) New item: understanding interconnection impacts of/by/for NEMs
27) New item: understanding real-time implications of solar or other variable generation to PJM reliability/dispatch
28) New Item: understanding how NEMS are handled both jurisdictionally and traditionally through EDC and state;

29) New item: Understand data and information requirements for real time operations, including day ahead requirements, as it relates to reliable operations