



NC State University

North Carolina **Solar Center**

Solar ABC's – Discussion Forum #1

Topic #1: Time-of-Use, AMI, and Net Metering

Introduction and Overview of Project

December 14, 2007, Conference Call

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- ❑ The Energy Policy Act of 2005 required state commissions to consider time-based pricing through Automated Metering Infrastructure (AMI)
- ❑ While most state commissions are not mandating an AMI policy, many utilities are proceeding with full or partial AMI deployment—primarily to reduce operating costs
- ❑ Where is this happening? Ontario, Canada; major utilities in California, AEP, PSEG, Duke Energy ... and many others
- ❑ AMI, and time-of-use pricing, has the ability to eventually correlate wholesale electricity prices to retail prices



AMI and time-of-use pricing will likely eliminate the typical one-to-one retail-rate net metering payment to distributed generators and replace it with a wholesale rate, unless regulators retain the one-to-one retail rate for other policy objectives.



- An AMI system has three components
 - **Meters** with an integrated, or retro-fitted, communications system
 - **A communications system** with:
 - A local area network (LAN) to transmit data from the meter to the local collection point
 - A wide area network (WAN) to transmit data from the local collection point to a data repository, such as a meter data management system
 - **A meter data management system**



Today's AMI meters are very sophisticated. They have the capability to do net metering and remote disconnect. The big question is ... how will utilities treat small distributed generation in a fully-deployed AMI world?



□ Why are utilities jumping on the AMI bandwagon?

- ***Current*** operational savings include:
 - Eliminate manual meter reading
 - Improve outage response time
 - Improve metering and billing accuracy
 - Reduce call center calls
 - Reduce GHG “footprint” through better load management and reduction of peaking needs
- ***Future*** operational savings include:
 - Increased demand-side management participation
 - Remote connect / disconnect capability
 - Possible consumer e-commerce channels
 - Correlate wholesale and retail prices



A utility's primary objective is to reduce operating costs, increase shareholder value, and provide reliable service to ratepayers at the lowest possible cost.



□ Some implications of AMI for small distributed generation

- Will one-to-one retail-based net metering become one-to-one wholesale-based net metering?
- Will other states follow the lead of Connecticut and Maryland in requiring AMI meters to have net metering capability?
- Will the sophistication of AMI meters eliminate the typical utility requirements for an external disconnect switch and excessive liability insurance?
- Will AMI facilitate the aggregation of demand-side management to the extent that small distributed generation becomes a more expensive resource?



The objective of this study is to draw upon your individual and collective expertise, and varied stakeholder perspectives, to better understand *all* the implications and ramifications of AMI and the ways we may possibly influence policy to achieve our desired objectives



❑ Today's objective

- Brainstorm implication / ramification “topics”
- Please identify your name, affiliation, and **briefly** state your thoughts
- We will capture your ideas and produce a draft table of contents to be posted for comment on the SolarABCs website
- If you have, or can produce, a written analysis of your specific implication / ramification, please e-mail it to jvward@ncsu.edu for inclusion in the report

The content
and usefulness
of our
final report
is up to you!