



Intelligent Efficiency Conference

Track A: Integrating Distributed Resources

2A Unlocking Near-Term Load Potential with ICT

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Partnerships (NEEP)
Looking at the Smart Energy Home**

Looking at the Smart Energy Home

Beyond just the smart thermostat, NEEP believes that truly smart homes will delight the resident and optimize the energy components of a home

Regional Goal: By 2030, more than 50% of total homes (75% of new construction) in the Northeast and Mid-Atlantic have at least two “energy smart” major systems (HVAC, water heating, plug load). This means they:



Optimize major system energy savings



Can optimize distributed energy resources



Can optimize devices for the grid (through time-of-use pricing, load shifting, demand response)



Can drive other home improvements through a feedback mechanism

Why aren't we already there?

Programs



Barriers:

- Limited energy savings potential for all products except smart thermostats, which has un-reliable individual savings
- Smart energy products are difficult to evaluate
- Equity challenges—these are expensive, non-critical devices

Opportunity:

- Program administrators already have appliance, lighting, and water heater rebates



Customer

Barriers:

- Low awareness
- Security concerns
- Device set up and ease-of use may not be ready for the mainstream
- Wi-Fi is a common protocol, but imperfect in application.



Opportunity:

- Interest in, and demand for, smart home technologies is increasing
- Voice-controlled interface devices are surging in popularity
- Home Security is a motivator for investment



Technology

Barriers:

- Interoperability

Opportunity:

- R&D continues, new and interesting devices entering the market



Grid

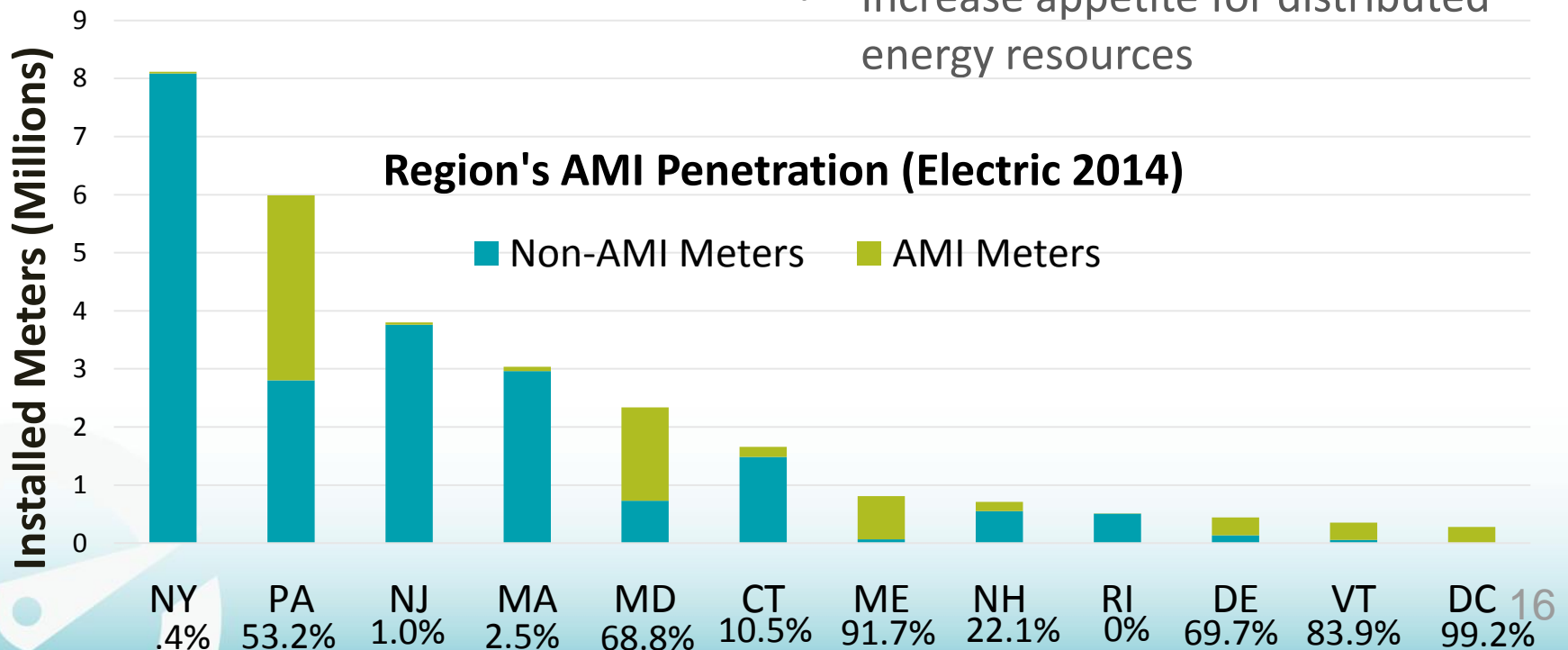


Barriers:

- AMI infrastructure is inconsistent throughout region

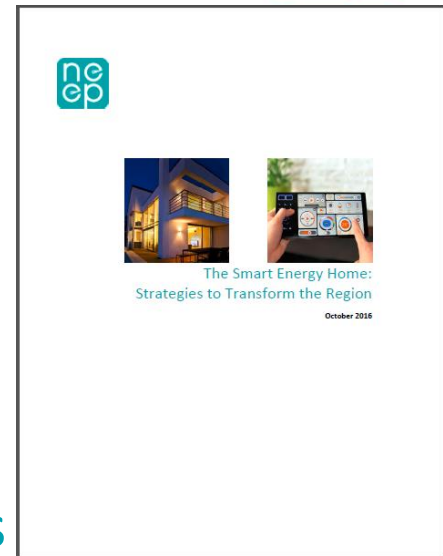
Opportunity:

- Increased need to manage peak electricity use/residential demand response
- Increase appetite for distributed energy resources



What do to now?

- Resources: *The Smart Energy Home*
- Strategies focus on:
 - smart devices driving home performance
 - advancing smart water heating
 - streamlining evaluation of smart thermostats
 - building infrastructure of smart devices in homes through rebate programs
 - engaging with security and service providers in HEMS
 - role of program administrators moves beyond rebates
 - investigating new technologies with potential, such as voice recognition,
 - establishing residential variable-use pricing



#3: Adjust savings expectations for Smart Thermostats, then put into permanent programs



- Studies upon studies have showed that smart thermostats save energy.
 - BUT depending on HVAC types/age, tightness of home, climate zone, previous occupant behavior with thermostat, a home could have
- NEED: data driven savings
- Recommendation: using ENERGY STAR's methodology, manufacturers submit field data from a given state to program providing the incentive, an appropriate savings level claimed.



THANK YOU!

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