RGGI Workshop on
Markets, Reliability and Program Design

Issues Relating to Renewable and Distributed Resources

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RGGI Situation

- Renewables and distributed resources (EE, DR, CHP, DG) are key to RGGI's ultimate success
- Restructuring – has undone utilities' portfolio role
- Regional markets now more important but ISOs have limited experience with efficiency, distributed resources, resource diversity policy
- Market and regulatory barriers persist
- Key point: RGGI cannot rely on power markets alone to deliver the benefits of renewables, efficiency and distributed resources

For each of these resources, 4 questions

RE, EE & DR, CHP & DG:

1. What is the realistic resource potential?
2. What are the market and reliability effects of increased reliance on those resources?
3. Can RGGI design address any market/reliability problems?
4. Beyond barriers – how can RGGI ***accelerate*** deployment of low-carbon resources?
   - ❖ Directly through RGGI design
   - ❖ Encouraging actions by others, including ISOs

Renewable generation-reliability, operations issues

- How much new renewable generation is realistic? Can it be built where needed?
  - Only 18 MW RE added in NE since 1990
  - NY wind potential is in central & west – not NYC
- Will RGGI "need" too much wind? What % of intermittent resources can each region integrate reliably?
  - NYSERDA study: "NY State should be able to integrate wind generation to a level of at least 10% of the system peak load" (~3300 MW)
  - Wind output in NY is not coincident with system peaks, but is on when gas is tight

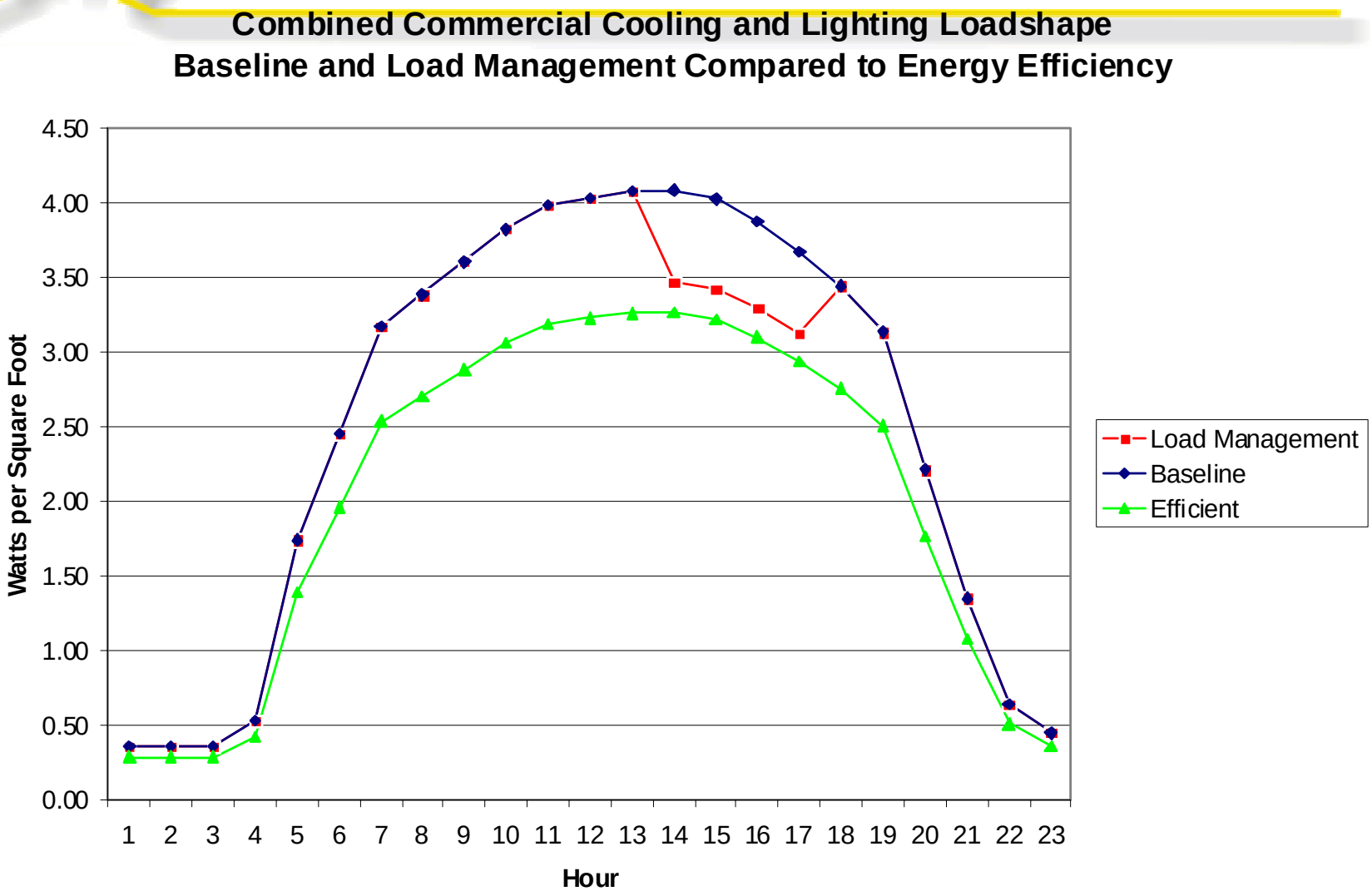
Renewables – RGGI design issues

- Should RGGI urge ISOs to revise rules written for dispatchable generators that tend to penalize intermittent resources?
  - E.g.,under-generation is penalized, while over-generation is not compensated
  - Transmission capacity charges
- Voluntary green markets require carbon credits to be retired – can RGGI allocate them?
- Will RPS alone "get it done" for renewables, or should RGGI actively support RE by allocating credits to renewables generators or purchasers?
  - Options include: Output-based allocations, RE set-asides, consumer allocation of a substantial share of credits

Central role for energy efficiency

- Key power sector lesson: end-use energy efficiency is a ***resource*** to meet power system needs:
  - low-cost,, reduces bills***,*** reduces GHGs, improves reliability generally, can lower peak prices
- Short-term demand response: can lower peak prices (and therefore, bills), and improve reliability when dispatched
- Substantial untapped potential
  - NEDRI study (among many others): EE and DR can supply up to 80% of load growth

Long-term efficiency can reduce peak, improve reliability



Energy efficiency- RGGI and ISO issues

- Should RGGI ***accelerate*** EE investments, or will market forces and individual state actions be enough?
- Deeper EE can lower caps, lower costs, and improve reliability. RGGI design options:
  - EE set-aside; general consumer allocation; allocation to “efficiency power plants”
  - RGGI pro-ration policy should not penalize states for being efficient
- ISO programs to ensure Resource Adequacy could pay for new EE capacity on the same basis as for new generation.

Demand response and RGGI design

- Demand response does not reduce GHG very much
- BUT: Reducing system peaks and high peak prices through demand response can ***mitigate reliability and market impacts of RGGI caps***
- Option: Can RGGI encourage strong demand response programs by ISOs and state PUCs?

Complex resources: CHP and landfill generation

- CHP is a significant resource: at least 70 CHP units >25 MW totaling more than 8,250 MW in RGGI region – and much untapped potential
- Landfill generation: important GHG reduction potential
- RGGI design questions:
  - Are these units eligible for credit allocations?
  - Should they receive extra credit for reducing thermal loads and methane releases?
  - Would a 25MW threshold remove an important incentive to greater development?
  - Should RGGI encourage ISOs to solve interconnection and standby rates barriers to greater use of CHP?

RGGI design elements for EE, RE, DR

- *Output-based allocations* will support renewables, CHP, lower carbon resources;
- *Updating* will keep the door open for new, usually cleaner resources that will help both market and reliability conditions;
- *Allocations* to RE, EE, and/or to consumers generally will accelerate progress;
- Bottom line: RGGI design and ISO rules have to work together to support low-carbon resources.