

Utility Incentive Programs Energy Efficiency Opportunities

CHP/MAEEP
Boston, MA

June 19th, 2013



Benefits of Utility incentive programs

- **Benefits to the Customer**
 - Financial incentives reduce construction costs
 - Added value enhances investment
 - Lower operating costs help sustain operations
 - Improved building performance good for employees, shoppers, students
 - Fewer Emissions
- **Benefits to the Energy Efficiency Program Provider**
 - Avoid higher cost power (peak hours/days) and avoid transmission and sub station upgrades and expansions.
 - DRIPE – Demand Reduction Induced Pricing Effect
- **Benefits to the Environment**
 - Reduced emissions
 - Impact climate change

Mass save[®] Utility and Energy Efficiency Program Sponsors

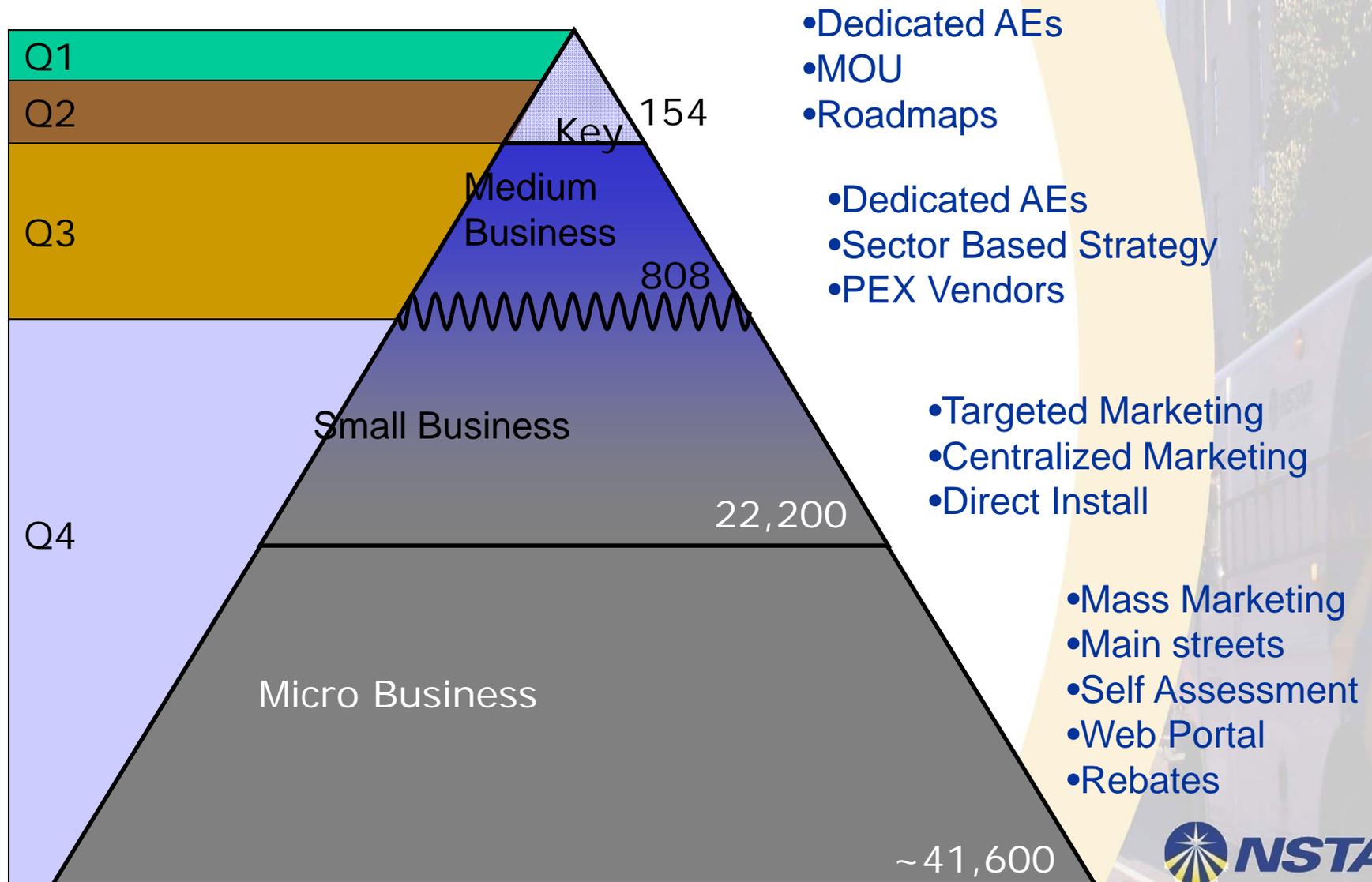


NSTAR Energy Efficiency Team

- Outside In, data driven approach to business
- Segment focused go-to-market strategies
- Sales & Implementation team aligned around those strategies
 - Large C&I
 - Small C&I
 - Micro-business
- Product Management
 - New Technology & Strategies
 - Segment & Channel



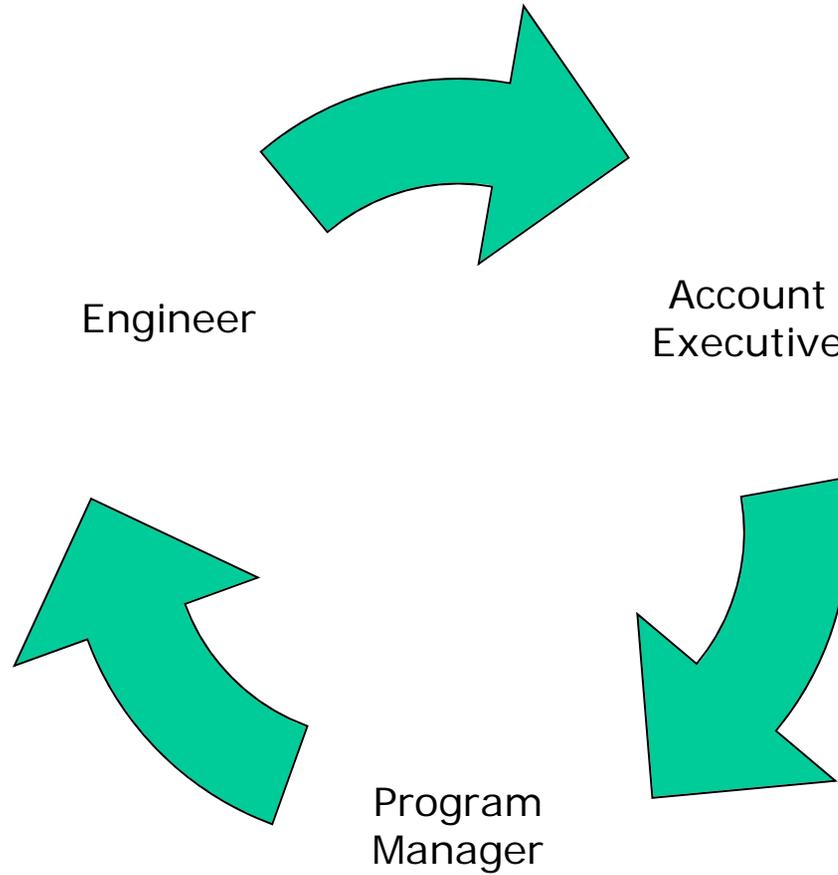
NSTAR Electric Customer Go-To-Market Model for 2013



Teams Are Assigned to Specific Segments

Team	Market Segments	
1	Pharmaceuticals & Medicines Healthcare	Retail (Except Mall)
2	Colleges & Universities Research Laboratory	Pharmaceuticals & Medicines
3	Government Agency Public Schools (K-12)	Private Schools
4	Commercial Property Management Hotels & Motels Professional Service	Mall Residential Property Management
5	Commercial Property Management Data Center Professional Service Communication &	Entertainment Food & Beverage Software & Internet Financial Other Industrial Computers & Electronics

Teams Are Cross Functional



We have MOUs with Key Customers

- NSTAR

- Harvard
- MIT
- Boston College
- City of Boston
- Partners Healthcare
- Stop & Shop
- Genzyme
- Boston University Medical
- AstraZeneca
- Gillette/ P&G
- EMC
- Whole Foods
- South Coast Hospital Group
- Mathworks
- Town of Acton
- Suffolk University
- Boston Properties

- WMECO

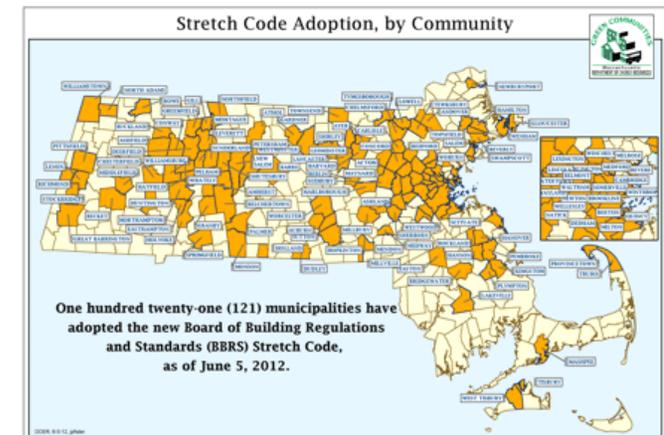
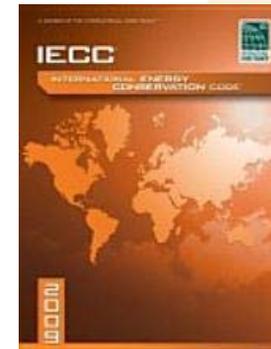
- UMass Amherst
- Bay State Health
- City of Springfield



Commercial and Industrial Program

NEW CONSTRUCTION OUTLOOK

- Energy savings for New Construction is **baseline Massachusetts code**.
- Massachusetts and Rhode Island have adopted the **International Energy Conservation Code IECC 2009** (IECC 2012 coming) for commercial projects.
- Massachusetts Stretch Code enforces a 20% savings beyond baseline code (adopted by 123 communities)
- **Our strategy:** use our programs to help advance the new construction market
 - *Promote technology and design features that are “above” code.*
 - *Prepare the marketplace for the next code change (e.g. **Stretch Code in MA**)*
 - *Promote **LEED** for building design (**MA CHPS & LEED** for schools)*



Integrated Custom Projects NSTAR/NGRID

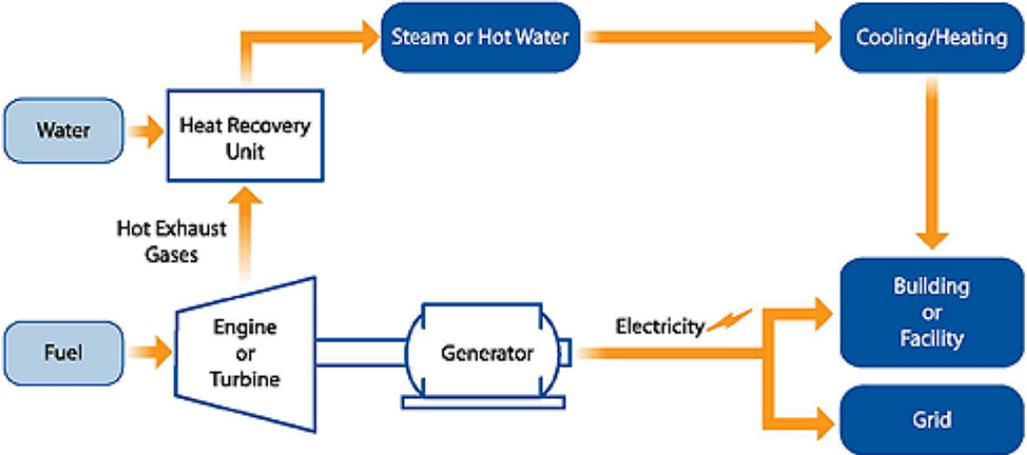
- Engineering study to establish savings, sometimes to develop scope as well. PA's TA share up to 50%
- Each PA buys down its share of the total cost according to their program
- Large Electric & gas projects are generally custom, larger, more comprehensive – preferred approach
- Joint PA support maximizes customer return and chances of projects moving forward



MA



CHP



Project Considerations

- Passes Massachusetts' Benefit/Cost Model
 - Installed Cost
 - kWh and heat utilization
 - Incremental fuel usage
 - Run hours with on site use of thermal energy
- Maintenance Costs
- Combined Electric and Thermal Efficiency (HHV basis)
 - Projects with less than 60% combined efficiency unlikely to be cost effective or will not have a good payback for the customer.
- Building energy efficiency measures that have higher B/C ratios should be implemented first or at the same time
 - Lower hanging fruit first
 - CHP design could be affected by EE measures - design CHP based on the assumption that other measures will be implemented.
- Incentives
 - 150 kW or less, incentive is \$750 per kW
 - Over 150 kW, see your account executive
 - Maximum incentive up to 50% of Installed Cost



Third Party Review and TA Studies

- Customers may request a TA Study
- PA pays a portion of the study performed by an agreed upon independent TA vendor.
- Not All feasibility studies performed by CHP Vendors are subsidized by the PAs – will be reviewed by the PAs or their TA Vendor at their own cost.

Factors to Consider

- Interconnection requirements and schedule
- Gas availability
- Right sizing the CHP unit
- Ability to operate and maintain
- Ability to manage the project implementation



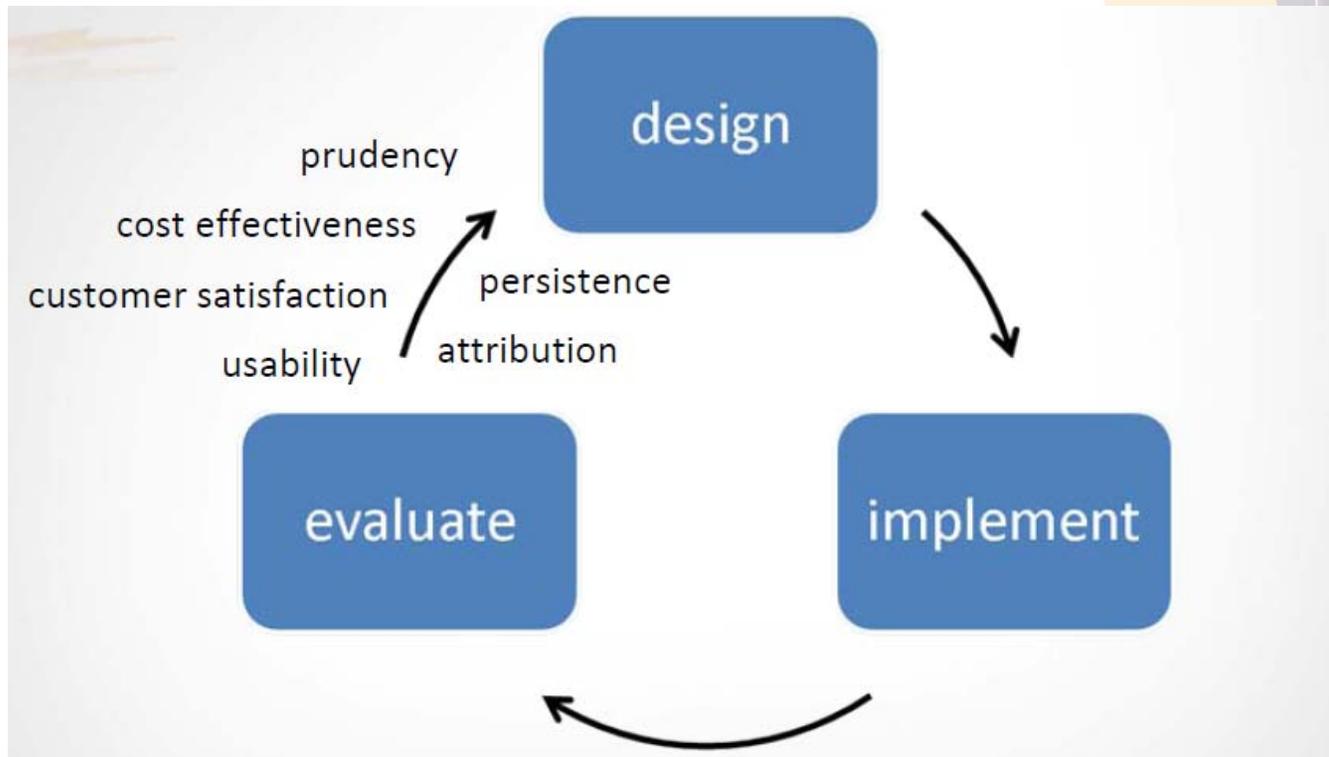
New Policy Changes

- Incentives for replacing existing (older than measure life) operating CHP which was not previously incentivized by any PA programs
 - Consider New Construction. Base case will be as if the CHP was not installed.
- Replacement of the existing incentivized units
 - Incremental cost = (cost of new unit - salvage value)
 - Incremental KW, kWh, fuel, etc.
 - Pass BCR test
 - Incentive = (Based on new unit size – incentive paid for old unit)
- M&V Metering
 - Customer to install as required by the MRD. PA may subsidize

Summary

- CHP can be a good energy savings opportunity for certain customers
- Careful analysis is necessary to ensure the facility's thermal and electric needs and profile are consistent with CHP equipment selection
- System needs to be properly controlled to minimize thermal dumping and exporting of power
- Obtain early involvement of Program Administrator!

Things to think about



Application Types

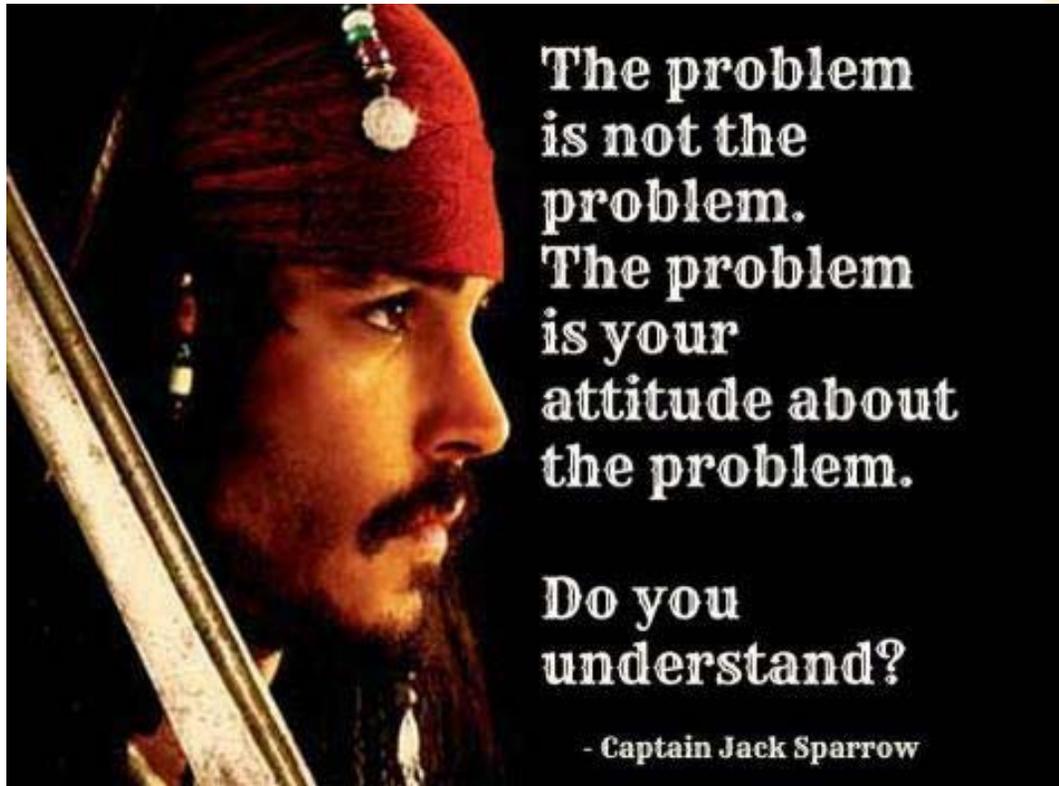
- Prescriptive application for most common EE prescriptive measures.
 - Easy to use applications
 - Pre-determined incentives per measure

- Custom application for all other measures assuming higher savings.
 - Incentive based on analysis and energy savings
 - Emphasis on comprehensiveness, the interaction of building systems, and building performance.
 - Submitted for program incentive consideration including base and proposed systems including savings and incremental costs.
 - Some vendors/Engineers firms to assist in the custom application process.

- Comprehensive Design – Multiple measures
 - Custom approach for comprehensiveness.
 - Increased incentives for reducing 15% or more of the facilities total energy consumption.

Why Energy Efficiency Programs & Services?

- **More efficient customer operations**
 - When our customers use energy more efficiently, they are more profitable and more competitive.
 - This means they stay in Massachusetts and stay in our service territory.
- **Increased asset value**
 - Installing energy efficient equipment modernizes customers' facilities and manufacturing equipment.
 - By investing in customer's facilities, NSTAR is able to reduce electrical infrastructure expenditures, benefiting all customers.
- **Fewer emissions**
 - With each kwh saved, less CO₂, NO_X, and SO₂ are generated. Using energy wisely means we all get to live and work in a better, healthier environment.



**The problem
is not the
problem.
The problem
is your
attitude about
the problem.**

**Do you
understand?**

- Captain Jack Sparrow