

# CROSS-CUTTING TOPICS FOR THE 2016-2018 PLAN

**EEAC Consultant Team**

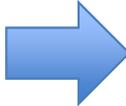
**February 25, 2015 (revised draft, February 21)**

# INTRODUCTION



- ▶ For the planning process, “cross-cutting” topics are those that bridge across all sectors, at the portfolio level
- ▶ Initial list of cross-cutting topics was reviewed briefly at the December 9 EEAC meeting
- ▶ For today, we selected a subset of cross-cutting topics to summarize and discuss with the EEAC
- ▶ Focus is on the early steps of planning and key planning issues, for the process for developing and reviewing the 2016-2018 Plan

# PLANNING SCHEDULE PER THE DATES IN THE GCA STATUTE



PAAs jointly prepare the draft plan in coordination with the EEAC	April 30
EEAC submits its approval or comments to the PAAs	July 30
PAAs submit the plan together with EEAC approval or comments to the DPU	October 31
DPU issues a decision on the plan	January 31

# KEY CROSS-CUTTING AND RELATED TOPICS IN THE PLANNING PROCESS

- ▶ Program penetration/market share
  - ▶ Participants and improved definitions
  - ▶ Assessment of EE potential (outline)
  - ▶ Savings goals framework
- Today**
- ▶ Priorities for 2016-2018 Plan
  - ▶ Organization of programs and initiatives
  - ▶ Assessment of EE potential (findings)
  - ▶ Savings goals (analysis and numerical levels)
  - ▶ Budgets and funding
  - ▶ Cost to achieve savings (cost drivers analysis)
  - ▶ Cost effectiveness
  - ▶ Performance incentives for the PAs
  - ▶ Key terms included in the Term Sheets
- Later – see estimated schedule at the end of the slides**

# PROGRAM PENETRATION OR MARKET SHARE

- ▶ **Penetration or market share = the % of recent installations or purchases that are energy efficient**
  - Efficient installations or purchases divided by total = %
- ▶ **Penetration is important for assessing the potential available**
  - Important input for the Assessment of EE Potential
  - Some PAs have prepared penetration and potential studies; draft PA studies are being reviewed
- ▶ **Recommendations:**
  - For perspective, review past/current penetration to more clearly understand the 2013-2015 program impacts
  - Use findings from EM&V studies to learn about program penetration, where it was studied
  - Determine how to better track and measure program penetration over the next three years

# EM&V STUDIES ON PENETRATION AND EFFICIENT MARKET SHARE

- ▶ **EM&V studies are estimating efficient market share**
  - Efficient installations or purchases divided by the total installed or purchased equals the % efficient market share
- ▶ **C&I on-site study, as one example:**
  - In the current C&I on-site study, EM&V is doing an add-on study identifying measures purchased in the last five years, documenting their efficiency, and analyzing the results
  - Should provide some useful retrospective estimates of efficient market share over the past five years
- ▶ **On-site studies are resource intensive so they cannot be performed frequently**
- ▶ **Product sales tracking also continues to be explored**

# PROGRAM PARTICIPANTS

- ▶ **Need participant counts, to be able to answer the reasonable questions of:**
  - *How many* customers have participated in the programs?
  - *How* have the customers participated? What is the nature of the customer participation?
- ▶ **Goal is to identify unique customers as participants**
  - Not just instances of participation, or participation events
- ▶ **Some challenges (which we acknowledge):**
  - Upstream initiatives and program strategies (cannot necessarily directly identify the customer participating)
  - Participation across multiple fuels (electric, gas, oil, other)
  - Participation in multiple program offerings over time
- ▶ **Recommendation: need a methodology to count and report customer participation more accurately**

# - COUNCIL DISCUSSION -



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- ▶ **Reviewing and tracking program penetration and market share**
- ▶ **Improving the definitions and accounting of program participants**

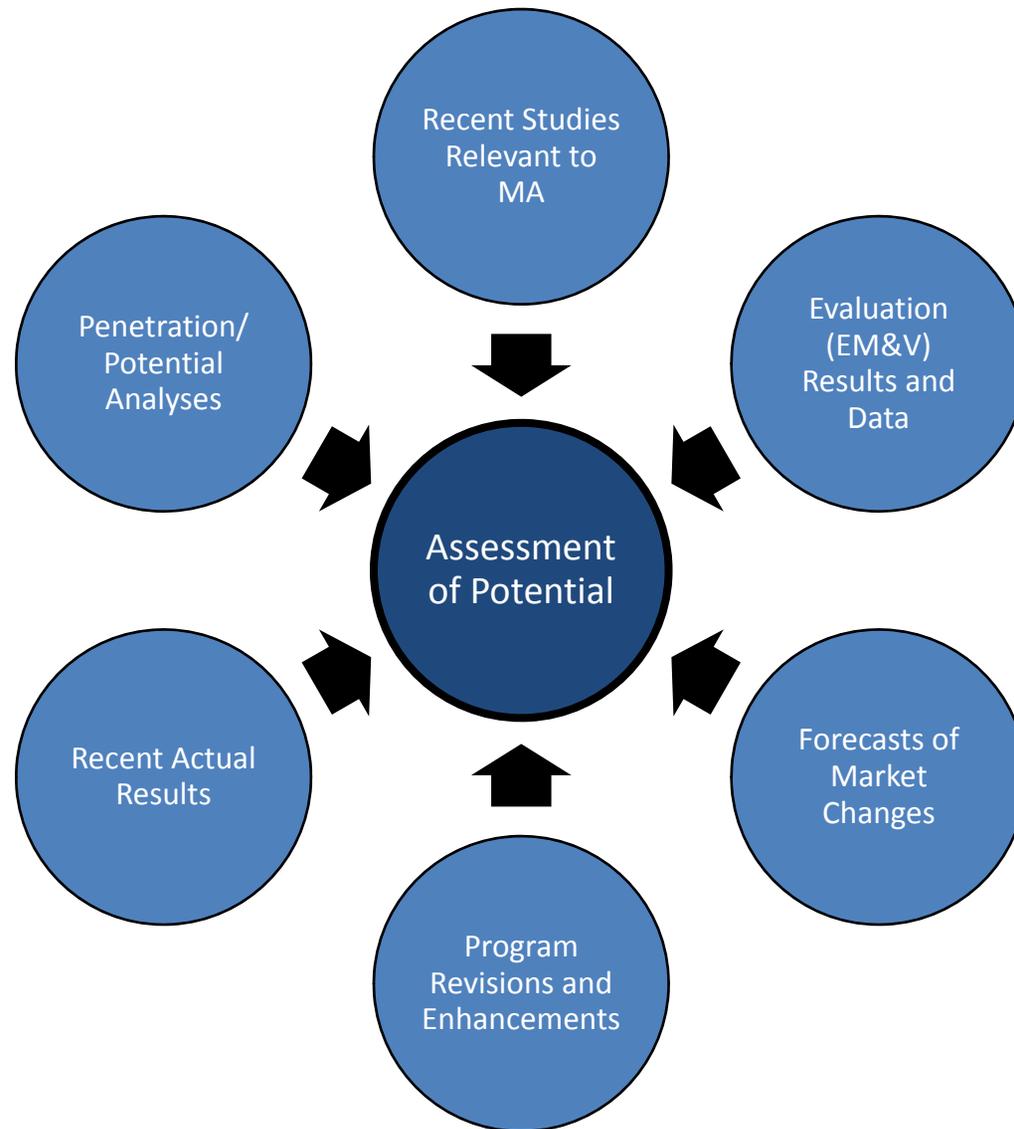
# ASSESSMENT OF EE POTENTIAL: GREEN COMMUNITIES ACT (GCA)

- ▶ **“...electric and natural gas resource needs shall first be met through all available energy efficiency and demand reduction resources that are cost effective or less expensive than supply.” Section 21(a)**
- ▶ **“A plan shall include: (i) an assessment of the estimated lifetime cost, reliability and magnitude of all available energy efficiency and demand reduction resources that are cost effective or less expensive than supply;” Section 21(b)(2)**

The Assessment of EE Potential memo from March 2012 is found at:

<http://ma-eeac.org/wordpress/wp-content/uploads/Potential-Assessment-Final.pdf>

# ASSESSMENT OF EE POTENTIAL



# PRELIMINARY ASSESSMENT OF POTENTIAL, 2016-2018

- ▶ **Purpose: Estimate available cost-effective savings potential in Massachusetts and the costs to attain it**
  - Approach will leverage secondary sources from MA and other jurisdictions and adjust as appropriate based on the best available information
  - Estimate *annual and lifetime savings for electric energy and demand, natural gas, and unregulated fuels* leveraging...
    - Recent potential studies from NY, DE, PA, VT, and MA
    - DRAFT potential studies for small PAs (Berkshire, Liberty, Unitil)
    - Data from recent MA EM&V studies (e.g., PA Differences Study, market assessments, impact evaluations) to supplement estimates
    - Other targeted research to quantify opportunities not reflected in the referenced studies

# PRELIMINARY ASSESSMENT OF POTENTIAL, 2016-2018 (CON'T)

- Compare and discuss available potential relative to...
  - MA Clean Energy and Climate Plan for 2020
  - Planned and historical program performance (2010-2014)
- Estimate costs to attain the identified potential referencing...
  - Planned PA spending
  - Historical program performance and spending (2010-2014)
  - Cost estimates from recent potential studies from NY, DE, PA, VT, and MA
  - Actual energy efficiency spending in other leading jurisdictions
  - Recent MA EM&V studies and other targeted research on cost drivers
- ▶ **Timing (EEAC meeting dates):**
  - Draft Assessment of Potential, March 2 at ExCom
  - Assessment of Potential, March 10 at EEAC meeting

# SAVINGS GOALS ARE INFORMED BY THE ASSESSMENT OF EE POTENTIAL

	Annual Savings (% of Retail Sales)	Assessment of Potential (% of Retail Sales)
<b>Electric</b>	2016: <b>X%</b> 2017: <b>Y%</b> 2018: <b>Z%</b>	<b>TBD</b>
<b>Gas</b>	2016: <b>A%</b> 2017: <b>B%</b> 2018: <b>C%</b>	<b>TBD</b>

Initial goals are developed and negotiated using % savings – i.e., annual energy savings as a % of retail energy sales (which puts all PAs on a normalized basis)

# WHAT GOALS ARE *REALLY* USED? AND HOW?

- ▶ Initially, goals are developed and negotiated using % savings – i.e., annual energy savings as a % of retail sales (in order to put all PAs on a level, normalized basis)
- ▶ BUT, in the Three-Year Plans and Reports, the % savings goals used for goal development and negotiation are translated into the *real* goals, which the DPU acts on:
  - Annual savings (physical units of kWh and therms, not %)
  - Lifetime savings (savings over the measure lives)
  - Benefits (\$, economic value of the savings, from all fuels)
  - Net benefits (\$, benefits minus costs)
- ▶ AND the performance incentives are based mainly on:
  - “Savings” component – based on achievement of benefits (\$)
  - “Value” component – based on achievement of net benefits

# SAVINGS GOALS PER THE GREEN COMMUNITIES ACT (GCA)

- ▶ **“...electric and natural gas resource needs shall first be met through all available energy efficiency and demand reduction resources that are cost effective or less expensive than supply.” Section 21(a)**
- ▶ **“Each plan shall provide for the acquisition of all available energy efficiency and demand reduction resources that are cost effective or less expensive than supply and shall be prepared in coordination with the energy efficiency advisory council...” Section 21(b)(1)**
- ▶ **“The council shall, as part of the approval process by the department, seek to maximize net economic benefits through energy efficiency and load management resources and to achieve energy, capacity, climate and environmental goals through a sustained and integrated statewide energy efficiency effort.” Section 22(b)**

# SAVINGS GOAL FRAMEWORK

## Electric Goals, 2013-2015 Plan (as an example)

	2013	2014	2015
Annual Energy Savings as % of Energy Sales	2.50%	2.55%	2.60%
Annual Energy Savings Goals (MWh)	1,194,114	1,235,761	1,272,969
Benefits (\$)	\$	\$	\$
Lifetime Energy Savings			
Peak Demand Savings (MW)			
Oil Savings			

Additional goals for the EEAC to consider in its framework for goals:

- Lifetime savings, consistent with “seeking to maximize net economic benefits,” and an indicator of savings over time (not just one year)
- Peak demand savings (MW), as an important benefit for the region
- Oil savings, as an important customer and environmental benefit

# LIFETIME SAVINGS AND ANNUAL SAVINGS AS GOALS

- ▶ Lifetime savings are an indicator of savings over time (not just for one year as in annual savings)

Residential Savings (MWh)	Annual	Lifetime	Measure Life
<b>Behavior</b>	139,644	139,644	1 year
<b>Lighting</b>	148,167	1,073,875	7.2 years
<b>Home Energy Services</b>	32,634	294,453	9.0 years

- ▶ Lifetime savings are used in the calculation of benefits, and therefore using lifetime savings is consistent with “seeking to maximize net economic benefits” per GCA
- ▶ **Recommendation:** increase the emphasis on lifetime savings by including both lifetime and annual savings as goals in the savings goals framework and in future reporting

# PEAK DEMAND (MW) SAVINGS OF ENERGY EFFICIENCY PROGRAMS

- ▶ The EE programs are delivering significant peak demand savings, in summer and in winter
  - In 2014, the EE programs provided peak demand savings equivalent to a 172 MW power plant
- ▶ These EE peak demand savings (MW) are another benefit of energy efficiency, in addition to energy savings
- ▶ Peak demand savings are important for the Commonwealth and are a very important contributor to system reliability in the ISO-NE region
  - See forthcoming presentation by Eric Winkler, ISO-NE
- ▶ **Recommendation:** increase the emphasis on peak demand savings by including peak demand (MW) goals in the savings goals framework and in future reporting

# EVALUATION (EM&V) RESULTS ON PEAK DEMAND (MW) SAVINGS

- ▶ **Peak demand savings are generally estimated in impact evaluations**
- ▶ **Loadshape studies also contribute to quantification of peak demand savings**
- ▶ **In individual impact evaluations, uncertainty is often higher for demand savings than for energy savings**
  - Driven in large part by greater variability for demand
- ▶ **However, portfolio-wide peak demand savings have been quantified with high reliability**
  - Driven in part by IOU obligations stemming from EE participation in the Forward Capacity Market (FCM)

# DEMAND RESPONSE CAN ALSO REDUCE PEAK DEMAND (MW)

- ▶ Demand response (DR): programs that encourage energy customers to *temporarily* reduce their demand for electric power or natural gas at certain specified times, to assist with reliability or to mitigate prices, often in exchange for a financial incentive or in response to a market signal.
- ▶ Demand response impacts, if implemented through the existing EE programs (vs. through another mechanism), would be reported on top of the peak demand savings achieved by the EE programs
- ▶ EE programs can also provide DR-enabling technology

# - COUNCIL DISCUSSION -

## ► Include additional goals in savings goals framework

	2013	2014	2015
Annual Energy Savings as % of Energy Sales	2.50%	2.55%	2.60%
Annual Energy Savings Goals (MWh)	1,194,114	1,235,761	1,272,969
Benefits (\$)	\$	\$	\$
Lifetime Energy Savings			
Peak Demand Savings (MW)			
Oil Savings			

Potential Additional Goals in Framework

- Lifetime savings, consistent with “seeking to maximize net economic benefits,” and an indicator of savings over time (not just one year)
- Peak demand savings (MW), as an important benefit for the region
- Oil savings, as an important customer and environmental benefit

# SCHEDULE FOR UPCOMING CROSS-CUTTING TOPICS

Program penetration/market share and participation (including improved definitions of participation)	Feb 25 Feb/March? (PAs are responding)
Assessment of EE potential (required in the Plan per GCA statute)	Feb 25 introduction March 2 ExCom March 10 EEAC
Penetration and potential analyses from PAs, per the prior term sheets	Feb 2-6 Small PAs March CLC
2014 results – preliminary year-end/Q4 results and 2014 Plan-Year Report	Feb 13 Preliminary May 1 Plan-Yr Report
Goals framework (not the numerical levels of the goals)	Feb 25
Goals for 2016-2018 (the numerical levels of the goals)	March 10 draft March 31 final

# SCHEDULE FOR ADDITIONAL CROSS-CUTTING AND RELATED TOPICS

Priorities for the 2016-2018 Plan	March 10
Organization of programs and initiatives	March 10
Budgets (preliminary, high-level)	March 10 draft March 31 preliminary
Budgets and funding sources	May/June
Cost to achieve savings (cost drivers analysis)	March 31 preliminary May/June
Cost-effectiveness analysis and review	May/June
Bill impacts	May/June
Performance incentives for the PAs	March 31 preliminary May/June
Key terms included in the Term Sheets	TBD

# QUESTIONS?

