MA ENERGY EFFICIENCY ADVISORY COUNCIL

→ CONSULTANT TEAM

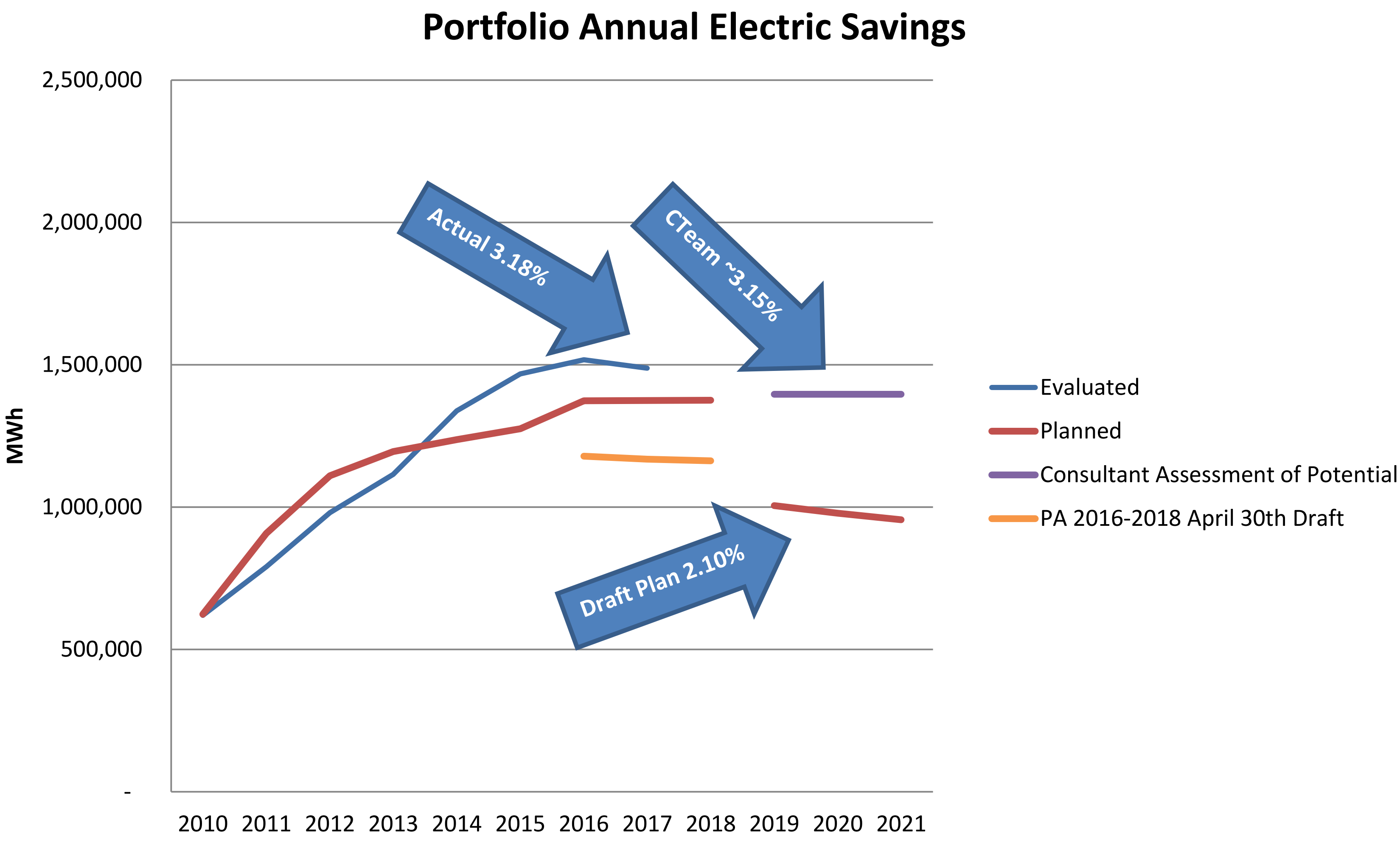
2019-2021 PLANNING UPDATE

▶ June 20, 2018

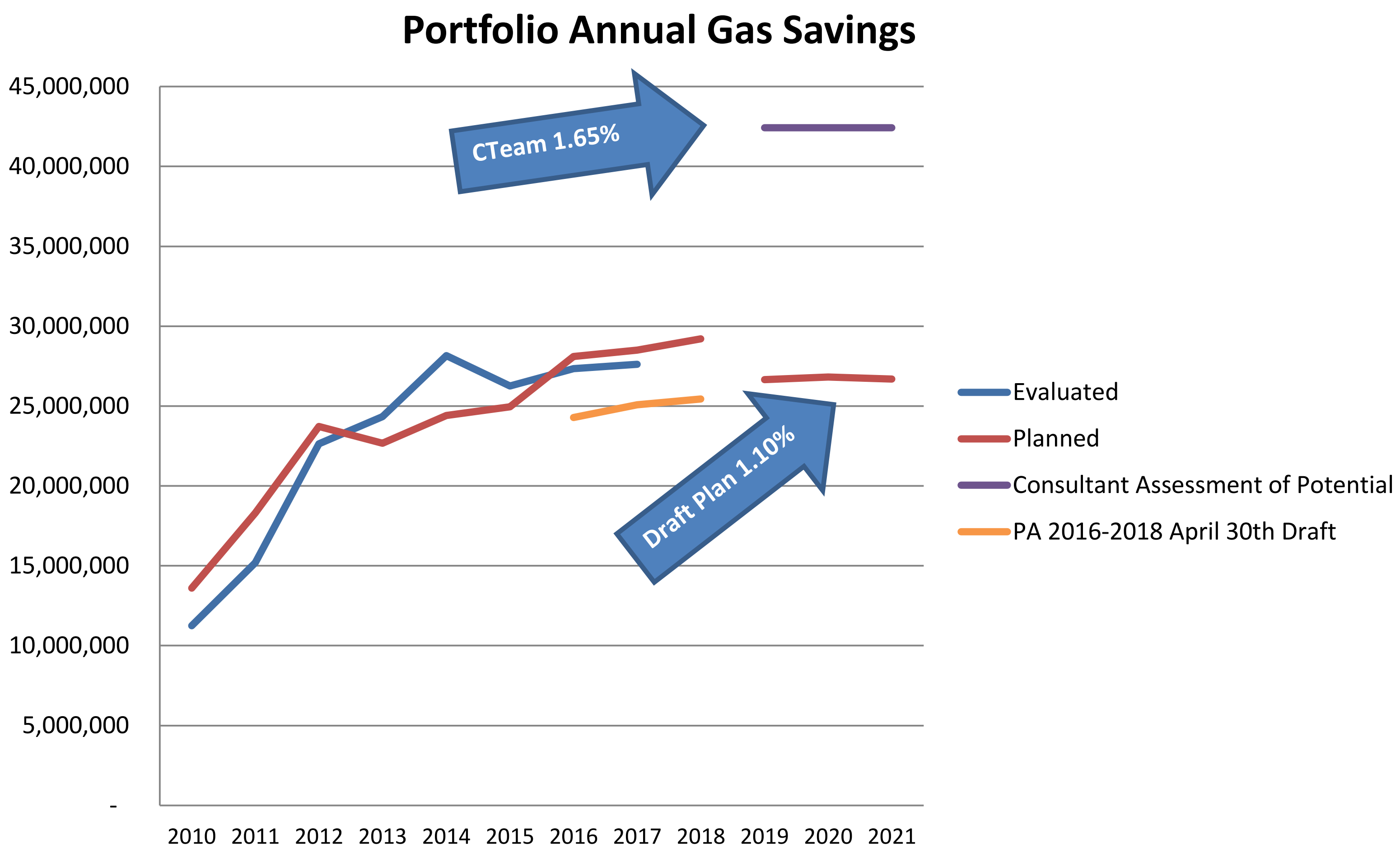
INTRODUCTION

- PA Draft Plan includes significantly lower savings goals and higher costs to achieve than have been achieved in recent years
- Consultant Team working with PAs to understand assumptions that account for lower saving and higher costs to achieve
- Consultant Team also updating analysis to reflect 2017 Plan-Year Report (PYR) evaluated results
- The following slides present an update on the “key drivers” identified by the Consultants and PAs
- Additional analysis and conversations are on-going
- Presentation includes a summary of the PA responses in the Draft Plan to the Council’s priorities

ANNUAL ELECTRIC SAVINGS



ANNUAL GAS SAVINGS



KEY DRIVERS

- **Key drivers process will:**
  - Discuss market trends and opportunities
  - Look at potential data, historical savings, example projects
  - Examine the impact of evaluation changes
  - Work to reconcile the gap in projected savings

C&I LIGHTING

- **Opportunity for greater C&I lightings savings**
  - Market transition from screw-in to other LED types
  - Still opportunity in linear, high/low bay, exterior, and controls
  - Training and overcoming market barriers to fixtures and controls will be key to maximizing savings
- **EM&V has positive and negative impacts**
    - Negatively impacts screw-in lighting the most
    - Positively impacts TLEDs the most
    - NTG and controls savings % are in flux
- **LEDS getting more efficient, but cost declines slowing**
- **Key drivers process will:**
  - Discuss market trends and opportunities
  - Look at potential data and historical savings
  - Work to reconcile the gap in projected savings

C&I HVAC

- **HVAC is the largest end use in existing C&I buildings**
- **Planned HVAC savings lower than past achievement due to changing baselines and NTG**
- **Opportunities for higher HVAC savings:**
  - Innovative program design to minimize baseline erosion
  - Increasing quantity and average savings for custom projects through system optimization and more RCx and MBCx
  - Increasing ability to reduce HVAC loads for small to medium customers through turn-key and trade-ally delivered services
- **Key drivers process will:**
  - Discuss market trends and opportunities
  - Look at historical savings and potential example projects
  - Work to reconcile the gap in projected savings

C&I PROCESS

- **Process has been a significant source of savings**
- **Evaluation Net-to-Gross and Realization Rate numbers will have an adverse impact**
- **Expansion of the industrial initiative across all PAs should have a positive impact**
- **Key drivers process will:**
  - Discuss market trends and opportunities
  - Examine the impact of evaluation changes
  - Discuss the impact of initiative expansion

ACTIVE DEMAND MANAGEMENT

- **ADM savings in Draft Plan are low, with limited coverage of other opportunities**
  - Summer only; no winter ADM
  - Very limited storage
- **Key drivers process will:**
  - Consider ADM goal(s) for use as separate goal for ADM
  - Address winter and summer
  - Determine strategic positioning and value, for summer and winter, and for which purposes
  - Further explore customer-facing program delivery with integrated EE and ADM

Planned Active Demand Management vs. Assessment of Potential

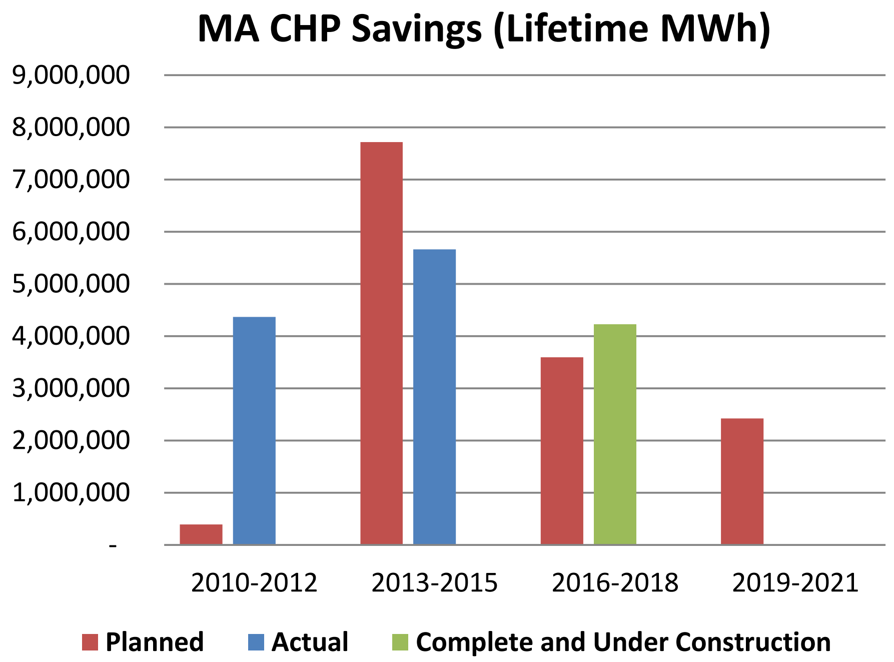
	2019	2020	2021
PA April 30 Draft Plan	50 MW	83 MW	120 MW
Consultant Assessment of Potential (Extrapolated from two PA Potential Studies)	Extrapolated from NG (Without Storage)		245 MW
	Extrapolated from NG (for C&I) & CLC (for Res) (With Storage)		437 MW

RESIDENTIAL RETAIL LIGHTING

- **Draft plan includes significant decrease in retail lighting contribution to lifetime residential savings**
  - 69% in 2017 (evaluated) vs. 30% for 2019-2021 plan
- **Planned unit numbers decrease more and faster than Consultants' assessment of potential**
  - PAs' draft: 6.5 million units in 2019
  - Consultants' assessment: 12.6 million units in 2019
  - 2017 evaluated results: 12.4 million lamps and fixtures
- **Key drivers process will:**
  - Examine planned unit numbers, including timing
  - Address PA differences
  - Assess TRC costs and incentives

CHP

- **CHP lifetime savings in 2019-2021 Plan are low**
  - 2.4M MWh vs 4M+ MWh in past plan periods
  - One large project could represent 2.7M MWh
  - No large EM&V, ISP or other expected impacts
- **Key drivers process will:**
  - Review and weight project pipeline
  - Consider net-to-gross and realization rates



HEAT PUMPS – C&I AND RESIDENTIAL

- **Heat pumps are a way to fuel switch to meet GWSA and EEAC priorities**
- **Assumptions in the draft plan vary amongst PAs in terms of volume ant type of units**
- **Assumptions of oil and propane savings for heat pumps are low or zero**
- **Key drivers process will:**
  - Examine planned unit numbers, including timing
  - Address PA differences
  - Assess TRC costs, program delivery methods, and incentives
  - Discuss likelihood of displacing oil and propane

RESIDENTIAL PROGRAM REALIGNMENT

- **Residential program innovations needed to maintain high savings and participation**
- **In addition to single family retrofit, includes:**
  - Moderate income/hard to reach
  - Multifamily retrofit
  - New construction
  - Data management
- **Key details have not been provided yet (e.g., planned participation numbers, including number of audits)**
- **Key drivers process will:**
  - Seek to reconcile draft plan narrative with quantitative screening tool inputs
    - How do the projected production levels reflect the new program features in the plan?
  - Identify opportunities to bolster EEAC priorities achievement

SMALL BUSINESS AND SMALL NONPROFITS

- **The Small Business initiative will no longer be tracked separately**
- **Insight into savings and participation will be hampered in the next three year plan**
  - Measures designated (Turnkey) are assumed to be delivered to Small Business customers
  - Data at the measure level is not updated as frequently as at the initiative level on MassSaveData
- **Key drivers process will:**
  - Establish a way to keep the EEAC informed of program engagement with small business and non-profits
  - Discuss market trends and opportunities
  - Examine the impact of evaluation changes

LOW INCOME

- **Low income program impacted by many of the same factors (e.g., declining lighting savings) as residential**
- **Draft plan doesn’t provide details on program innovations**
  - Total low income program description is just over 3 pages
- **Key drivers process will:**
  - Address PA differences in 2019-2021 plan period
    - Electric savings as a % of sales range: 0.19%-3.46%
    - Gas savings as a % of sales range: 0.34%-3.5%
  - Examine planned participation levels (not in draft plan)
  - Assess savings and cost implications of increased alignment with residential program and other key drivers

COUNCIL PRIORITIES

PREVIOUS COUNCIL PRIORITIES

1. **Underserved Populations and Geographies**
2. **Active Demand Management**
3. **Fuel Switching**
4. **Integrated Residential Program Design**
5. **C&I Sector Savings Measures**
6. **Zero Energy Ready Buildings and Passivehouse**
7. **Integrated Multi-Family Framework**
8. **Low Income Programs**
9. **Data Management**

PREVIOUS COUNCIL PRIORITIES

1. **Underserved Populations and Geographies**

UNDERSERVED POPULATIONS AND GEOGRAPHIES

- **Previous Recommendation:**
  - *Increase participation by, and savings from, hard-to-reach and underserved populations and geographies, including moderate income, renters, small business, and non-profits*.
- **PAs indicate program realignment will provide opportunities for all customers to improve efficiency**
- **Unclear what specific strategies PAs will use to reach underserved customers**
- **Example Key Indicators:**
  - # of participants for specific customer groups
  - Participants from specific customer groups as a percent of total customers that make up those groups
  - Energy savings as a % of total usage by municipality or zip code

PREVIOUS COUNCIL PRIORITIES

1. Underserved Populations and Geographies
2. **Active Demand Management**

ACTIVE DEMAND MANAGEMENT

- **Previous Recommendation:**
  - *Include goals specific to active demand management and integrate the delivery of active demand management offerings within the EE programs in the 2019-2021 Plan.*
- **PA Plan includes:**
  - A residential direct load control offering targeting customers with connected efficiency equipment
  - A large commercial, technology-agnostic, performance-based load curtailment offering
  - Volume and scope differs by PA
- **Example Key Indicators:**
  - ADM MW in summer, and ADM MW in winter
  - Conversion rate (% of all outreach offers that have enrolled)
  - Penetration (e.g., % of wifi thermostats that have enrolled)
  - Performance (% of enrollments that have performed)

PREVIOUS COUNCIL PRIORITIES

1. Underserved Populations and Geographies
2. Active Demand Management
3. **Fuel Switching**

FUEL SWITCHING

- **Previous Recommendation:**
  - *Promote & incentivize fuel switching strategies, in all sectors, that support the Commonwealth's long term greenhouse gas reduction requirements, as established under the Global Warming Solutions Act.*
- **Energy Optimization intended to help customers make informed decisions to decrease overall energy use**
- **Enabling efficiency services regardless of current fuel if upgrading to efficient, cost-effective equipment**
- **Unclear how savings will be counted and whether oil/propane to gas fuel switch included**
- **Example Key Indicators**
  - Number of heat pump and heat pump water heater installations that displace fossil fuels

PREVIOUS COUNCIL PRIORITIES

1. Underserved Populations and Geographies
2. Active Demand Management
3. Fuel Switching
4. **Integrated Residential Program Design**

INTEGRATED RESIDENTIAL PROGRAM DESIGN

- **Previous Recommendation**
  - *Provide a new, integrated residential program design that maintains strong savings and benefits for all residential homeowner and rental initiatives by:*
    - *Increasing customer capture,*
    - *Providing new methods for realizing savings,*
    - *Expanding HVAC, behavioral, financing, and upstream offerings, and*
    - *Increasing conversion rates for HVAC and weatherization measures.*
- **PAs propose realigned program that integrates elements of the HES and multi-family retrofit initiatives**
  - Many implementation strategies still unclear
- **Example Key Indicators**
  - Recommended to installed major measure conversion rate
  - Customer enrollments by entry channel

PREVIOUS COUNCIL PRIORITIES

1. Underserved Populations and Geographies
2. Active Demand Management
3. Fuel Switching
4. Integrated Residential Program Design
5. **C&I Sector Savings Measures**

C&I SECTOR SAVINGS MEASURES

- **Previous Recommendation**
  - *Increase program savings in the C&I sector from HVAC, process, lighting, and CHP measures.*
- **Plan includes higher electric HVAC and process gross savings than 2016, but suggest evaluation impacts result in lower net savings than 2016**
- **Lighting savings lower than 2016 levels**
- **CHP levels below average of historic achievement**
- **Example Key Indicators**
  - % Growth in savings from lighting or HVAC controls
  - % Increase in process savings statewide
  - % CHP savings growth
  - Number of CHP projects

PREVIOUS COUNCIL PRIORITIES

1. Underserved Populations and Geographies
2. Active Demand Management
3. Fuel Switching
4. Integrated Residential Program Design
5. C&I Sector Savings Measures
6. **Zero Energy Ready Buildings and Passivehouse**

ZERO ENERGY READY BUILDINGS AND PASSIVEHOUSE

- **Previous Recommendation**
  - *Actively promote zero energy ready buildings (ZEBs) & Passivehouse for new construction and major renovations in all sectors.*
- **PAs state support for ZEBs and Passive House through the delivery of targeted education/trainings, technical support and incentives**
- **Unclear how these efforts translate into spending and savings**
- **Example Key Indicators**
  - # or % of new construction projects being built to ZEB or Passivehouse standards
  - Budget spent on Passivehouse training and incentives

PREVIOUS COUNCIL PRIORITIES

1. Underserved Populations and Geographies
2. Active Demand Management
3. Fuel Switching
4. Integrated Residential Program Design
5. C&I Sector Savings Measures
6. Zero Energy Ready Buildings and Passivehouse
7. **Integrated Multi-Family Framework**

INTEGRATED MULTI-FAMILY FRAMEWORK

- **Previous Recommendation**
  - *Establish a multi-family framework that better integrates residential and commercial offerings and is cost-effective.*
- **PAs plan to serve all multi-unit buildings through the Residential Coordinated Delivery Initiative**
- **Still need to enable program tracking and energy benchmarking by building/facility**
- **Unclear from plan whether program:**
  - Addresses market and regulatory barriers
  - Leverages key points in the building life cycle
  - Reexamines pay for performance
- **Example Key Indicators**
  - Close rates (audits to projects)
  - Average change in energy use intensity per building or project

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7. Integrated Multi-Family Framework
8. **Low Income Programs**

LEAN

The Low-Income Energy Affordability Network

LOW INCOME PROGRAMS

- **Previous Recommendation**
  - *Review low-income programs for potential improvements in participation and achievement of savings, and seek additional savings & cost-efficiency opportunities, to ensure continued success.*
- **PAs plan to increase coordination and partnerships between the Low Income and Market Rate programs**
  - Unclear from plan how program will achieve this
- **No clear mention of assessing participation/equity gaps and reaching a wider and diverse population**
- **Example Key Indicators**
  - % of non-WAP/LIHEAP referred program participants
  - Cost to deliver

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9. **Data Management**

DATA MANAGEMENT

- **Previous Recommendation**
  - *Modernize data management across all PAs and sectors, enhance accessibility to and usefulness of the data to the public, and leverage additional data sources to accomplish items above.*
- **Example Key Indicators**
  - Time to completion for EM&V data management tasks
  - Amount of time for publication of reported data
  - Number of different datasets/databases used by PAs and their vendors
  - % of customers using technology to access and manage their energy use information and program activity

PERFORMANCE INCENTIVES

- **Performance incentives not addressed during workshop process**
  - By design, PI intended to be addressed as part of ongoing planning process
- **Several councilors requested to discuss performance incentive design and mechanism**
  - To be scheduled after July when the Council Resolution on the Draft Plan is complete
- **Consultants have proposed an additional component be added to the PI mechanism**
  - Additional component for specific, quantifiable key performance indicators such as
    - Volume of active demand management
    - Number of heat pumps and heat pump water heaters
    - % of renters served

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THANK YOU

Question?

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