Drivers of Appropriate Variations among PAs; Cost and Savings

Presentation to the EEAC

September 11, 2012
Introduction

- **Some** variations in savings goals and cost to achieve are appropriate due to unique characteristics in service territories
  - Both the EEAC and DPU have supported variances for the current plan
  - Sound regulatory policy consistent with the GCA
- Each PA has unique expertise and knowledge regarding their individual customer needs
- Prior to 2012, and to a degree for 2012, multiple different assumptions/EMV results were used and approved for each PA
- Examination of data to date helps inform the core drivers of these variances
Key Trend; Increased Convergence

- Key developing trend: **Fewer variances in 2013-2015**
- Cost to achieve, costs and savings estimates are converging due to an intense effort:
  - Common program designs
  - C&IMC, RMC, LI Best Practices
  - Common assumptions working group
  - Common definition of participants
  - TRM—a major undertaking strongly supported by EEAC
  - Statewide EM&V framework
- These new efforts are having a major effect
- Savings Goals—still some appropriate variances based on service area characteristics, but PAs are increasing goals
Savings Goals and Costs Are Being Refined

- Since July 2 Filing, each PA has been refining and examining goals and costs
  - An iterative process
  - Intensive discussions with stakeholders including DOER and EEAC consulting team
- Each PA—both larger and smaller—anticipates increased savings goals from July 2 draft
  - Need adequate budgets
- Savings, costs and Performance incentives are interlinked
- Savings increases are based on PI approach proportionate to current framework is maintained
Variance in Service Territories

- Demographics
  - Building types
  - Income types
  - Fuel type
  - Population density
- Customer Demand
  - Customers have competing priorities
- Saturation
  - Histories of successes
Three Year Plans:
Variances are best examined over a longer term

- We are in midst of year three of three year plan--most challenging goals yet in place for 2012
- Most effective assessment can be done after three-years. Each PA will have some unique “peaks and valleys”
- Some very cost-effective CHP projects in 2011 can drive 2011 costs downward; savings upwards-but all projects are not replicable; combining 2010-2012 gives a more accurate picture
- By many objective measures, Unitil Electric had the most successful performance of PAs in 2011 by a large order of magnitude, but 2011 performance is not reflective of Unitil’s expectations over three years of 2010-2012
- Over time we expect variances to be smoother for all PAs
Other Drivers

• Variation between PAs in costs to achieve savings can also be attributed to:
  • Historical performance
  • The balance of savings between sectors
  • The balance of savings between end uses (“Measure Mix”)

**Key Takeaway** - PAs with robust C&I customer bases have deeper savings opportunities to mine and those savings can be achieved less expensively than low-income or residential savings
Balance of Electric Savings Between Sectors

• Balance of savings between residential, low income and C&I sectors varies both between PAs and between years.

• In 2011, contrast 51% of CLC savings from C&I with 97% of Unitil savings.

• In 13-15, PAs forecast 83% of savings from C&I and 15% from residential.

*All 2013-2015 figures (costs and savings) are internal draft projects, subject to internal review; final figures may vary.
Balance of Gas Savings Between Sectors

- Balance of gas savings between residential, low income and C&I sectors varies less than electric.

- In 2011, the PAs ranged from 30% to 50% of savings from C&I.

- In 2013, PAs forecast 54% of savings from C&I and 37% from residential.
Cost of Electric Savings
Variation By Sector

- Commercial savings cost less than residential and low income.
- In 2011, residential cost of savings ranged from $52 to $117 while the commercial cost of savings ranged from $6 to $33.
- In 13-15, PAs forecast $82 residential and $25 commercial cost of savings.

### Cost of Lifetime Savings (MWh)

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Cost of Gas Savings
Variation By Sector

- Although commercial gas savings cost less than residential and low income, variance is less than electric.

- In 2011, residential cost of savings ranged from $.46 to $.75 while the commercial cost of savings ranged from $.17 to $.58.

- In 2013, PAs forecast $.82 residential and $.34 commercial cost of savings.

*The cost of lifetime savings 2013-2015 figures now INCLUDE RCS costs that were previously excluded (because revered through the RCS charge separately).*
Drivers of Cost Variation
By Electric Sector

- Participant incentives are the key drivers, 2011 residential participant incentives were $42 while commercial participant incentives were $12.
- Commercial also had a lower cost of marketing, sales, technical assistance & training and evaluation.
- Participant Incentives drive costs; PPA, Marketing and EMV are not sources of material variances
- Commercial typically has larger projects which drive the lower cost per savings.
Drivers of Cost Variation
By Gas Sector

• Similar to electric participant incentives are the key drivers, 2011 residential participant incentives were $.43 while commercial participant incentives were $.18.

• Commercial also had a lower cost of marketing, sales, technical assistance & training and evaluation.

• Participant Incentives drive costs; PPA, Marketing and EMV are not sources of material variances.
Balance of Electric Savings
Within the Residential Sector
This balance affects costs to achieve and benefits

- Balance of savings between Products and Whole house varies both between PAs and between years
- In 2011, contrast 66% of National Grid savings from Products with 84% of Unitil savings

![Graph showing Distribution of Lifetime Annual Savings (MWh)]
The cost to achieve electric savings also varies by program within the residential sector. Products costs less than Whole house. In 2011, Products cost of savings ranged from $19 to $37 while the Whole house cost of savings ranged from $100 to $450.

*The cost of lifetime savings for whole house represents the cost of electric savings only. Whole house achieves a large percentage of non electric savings.*
Variances Between PAs Within Programs

• Costs/participant are similar, costs to deliver do not vary significantly
• Benefit/participant drive the variance
• Demographics and project size drive the variance in benefits/participant rather than program design variation
• Example; Mix of electric heat participants
Cape Light Compact (CLC) is a municipal aggregator, M.G.L. C. 164, Section 134, consisting of 23 town/county members. CLC has a 23 member Governing Board.

- Almost 45% of residential customers currently have oil or propane heat
- Less than 2% on the commercial electric space heating rate code
- CLC Governing Board sets policy direction for the CLC Energy Efficiency Plan
- The overarching goal of the CLC - to comprehensively and cost effectively serve Cape Cod and Martha’s Vineyard customers regardless of fuel type for maximum benefits – was established by the Cape Light Compact Governing Board at their April 2012 Board meeting.

- Municipal customers receive 100% incentive for all cost effective measures (overcomes implementation barriers and continues current 2010-12 plan incentive)
- Non-energy benefits are a significant portion of CLC savings. In 2010, CLC percentage of annual non-electric savings across all sectors was approximately 75% electric and 25% non-electric
- Incentive levels may differ from other PAs due to CLC Board direction. Different incentive levels = different cost per lifetime MWh savings
- CLC Residential and Low Income programs have more non-electric, non-lighting savings due to whole house, fuel blind approach and the customer demand
• Unitil has a unique service area, ~70% of Unitil’s customer base is in one community
  • That community is significantly different from statewide averages in all key demographic and economic factors, such as income level, economic opportunity, and building stock.
  • 6 Communities - 38,000 residential and 5,200 C&I Customers, 32 Industrial customers ~40% of electric sales, 28 gas customers ~55% of gas sales.
• Lower economic well-being than the Commonwealth as a whole
  • High poverty rate - Median income is lower at all household sizes and age levels
  • One of the highest proportions of households with public assistance income
• Significant hard to reach / serve population
  • High penetration of renters, aging population, high poverty
  • 4.2% of households have no-one over the age of 14 who speaks English as a first language
  • Only 10% of heads of households have a college degree or higher
• Building Stock / Non-Electric Savings
  • 90% of all buildings are “occupied” (residential housing). Smaller and much older stock - median age is 65+ years. Little or no new construction activity
  • High penetration of oil heat - Non-electric benefits are a significant portion of Unitil savings in the Residential & Low-income sectors. For example; Unitil HES residential electric savings were 7% of total HES program savings in 2010 compared to the statewide average of 33%. As a result Benefits per unit of spending is a more meaningful measure since Oil savings (93% of total in 2010) are not considered when calculating total cost per kWh.
• “High-Touch” implementation approach – to overcome implementation barriers and increase participation in a challenging service area Unitil employs implementation methods in some programs that require a higher investment. (example results, Unitil has a very high close rate on major Residential measures per audit.)
Challenging economic conditions which have not turned around. The original 3 Year Plan was built on the premise that the economy would bounce back at the end of the third year.

- 7th worst region of the country to find employment
- Historically, Fall River consistently has the highest unemployment in the Commonwealth.
- Textile based workforce although jobs in this sector are no longer in demand.
- New Home Construction has declined 70% over the past 6 years.
- Gas Throughput is almost flat due to manufacturing closing or relocating.
- For the next 3 Year Plan, the Company continues to aggressively seek savings while remaining mindful of economic challenges and bill impacts. Balance is key.
- Potential to introduce behavioral program to residential customers in 2013.
- Work with the Business Organizations to promote Energy Efficiency Programs to C&I customers.
- Work with National Grid and the City of Fall River to create an “Energy Challenge” through the City’s Neighborhood Associations in 2013. The goal is to increase weatherization measures and overall participation in the program.
• Unique Territory
  • Covers two non-contiguous rural areas, making in-the-field efficiencies challenging
  • Company serves 20 cities and towns with combined population of 190,000
• Unique Customers
  • Berkshire Gas serves approx. 32,000 heating customers, approx. 5000 commercial customers, only 2% are large C&I
  • Large C&I customers account for only 0.31% of heating customers, yet they contribute 27% to annual portfolio savings goals
  • Many customers use readily available and low cost alternative fuel sources, such as wood, rather than taking advantage of our energy efficiency programs
• Economy
  • In the past few years, the Company experienced certain plants or parts of plants closing, moving or simply shutting down
  • Some commercial customers have been uncertain about the future of some satellite locations in the area, making it challenging for them to commit to energy efficiency projects
• Budget increase since 2009
  • Berkshire’s 2013 energy efficiency budget shows two and a half fold increase since its 2009 budget