

Triennial Plan Development: Residential Programs Discussion

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Presentation Outline

■ Part 1

- ▶ Existing programs coverage and gap analysis

■ Part 2

- ▶ Lessons learned from EE leaders for non-LI retrofit programs



PART 1: EXISTING PROGRAMS COVERAGE AND GAP ANALYSIS



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EE Opportunities

EE Opportunities

Market Driven

Discretionary

*New
Construction*

*Natural
Replacement*

*Early
Replacement*

Retrofit

* Presented in more details in Strawman (p.30)



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Overview*

EE Opportunities	Existing Offer	Additional EE Measures	Add'l Savings Opp [‡]
NEW CONSTRUCTION	• None	<ul style="list-style-type: none"> • Building envelope • HVAC, DHW • Lighting, appliances, renewables 	• LOW
NATURAL REPLACEMENT	<ul style="list-style-type: none"> • EML: Appliances (new), CFLs • Unitil: HVAC, DHW 	<ul style="list-style-type: none"> • HVAC, DHW (oil, propane) • Consumer electronics • Electronic thermostats 	• HIGH
EARLY REPLACEMENT	• None	<ul style="list-style-type: none"> • HVAC, DHW (all fuels) • Fuel switching • Appliance retirement/recycling 	• MODERATE
RETROFIT	<ul style="list-style-type: none"> • MH: Low income • EM: mid to high income (new) 	<ul style="list-style-type: none"> • None • Renewables 	• HIGH

[‡] Excluding renewables. * Over Triennial Plan timeframe



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PART 2: LESSONS LEARNED FOR NON-LI RETROFIT PROGRAMS



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Context

- EE industry has strong experience in implementing retrofit programs at no cost to low-income households
- However, limited experience with mid to high-income household
 - ▶ Few utilities have focused on this area until recently
 - ▶ Low take-up rate compared to other EE programs
 - ▶ Ambitious all-fuels programs are scarce
- Program managers face significant challenges
 - ▶ Retrofit programs are expensive due to on-site audits and higher incentive levels
 - ▶ Difficult to convince consumers to accept disruptions
 - ▶ Contractors do not see a clear business case for EE



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Experience

- Although experience is limited, lessons can be learned from exemplary programs targeting all fuels
 - ▶ New York
 - *Home Performance with Energy Star*
 - *State-wide program managed by NYSERDA (excluding Long Island)*
 - ▶ Connecticut
 - *Home Energy Solutions*
 - *State-wide program managed by gas and electric utilities and municipal distributors*
 - ▶ Massachusetts
 - *Home Performance with Energy Star MassSave*
 - *State-wide program managed by gas and electric utilities*
 - ▶ Manitoba (Canada)
 - *Home Insulation/EcoEnergy*
 - *Province-wide programs managed by Manitoba Hydro*



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Four Key Lessons Learned

1. Hassle free process needed for homeowners' participation
2. Broad basket of eligible EE measures to capture maximum of energy savings
3. Auditors and contractors are important allies in promoting retrofits (public –private partnership)
4. Efforts required to build a high-quality industry (capacity building)



Lesson 1: Keep it Simple

■ Hassle-free process needed for homeowners' participation



- ▶ Easy access to pre-selected auditors and contractors
- ▶ Low-cost / high-value audits “to get through the door”
 - *Auditors provide detailed information on recommended measures and costs and savings estimates*
 - *Auditors install low-cost measures or give coupons for “light” measures (e.g. duct sealing, CFL, furnace tune-up)*
- ▶ Rapid follow-up and bid ("valley of death")
- ▶ Assistance in filling incentive forms (grants and/or low-cost financing)



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Lesson 2: Be Comprehensive

- Basket of eligible EE measures as broad as possible to capture maximum of energy savings

- ▶ Envelope improvements

- *Insulation, exterior doors, air sealing, windows*

- ▶ High efficiency equipment

- *Heating, cooling, domestic hot water*

- ▶ Controls

- *Electronic thermostats, timers*

- ▶ Base load electric

- *Lighting, appliances, consumer electronics*



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Lesson 3: Allies Matter



- Auditors and contractors important allies in promoting retrofits (public –private partnership)
 - ▶ Make business case for contractors
 - ▶ Develop coop marketing, other value added
 - ▶ Performance-based incentives can work
 - *Encourage deeper savings and higher volume of installations*
 - ▶ Partnerships take time and results won't come overnight



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Lesson 4: Quality Matters



- Need to invest effort to build a high-quality industry (capacity building)
 - ▶ Quality control
 - *Auditors and contractors meet EE certification standards*
 - Building Performance Institute’s certification or alike
 - *Audits and installations subject to random quality controls*
 - ▶ Training
 - *Auditors and contractors must have an easy access to training (e.g. through Community Colleges)*
 - *Financial support to cover part of training costs*



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Lesson 5: No Silver Bullet

	NY	MA	CT	Manitoba (Canada)
Avg. Savings per particip. *	~ 35%	~ 25%	~ 15%	~ 15%
Program Cost per particip.	~ \$ 5,300	~ \$ 2,700	~ \$ 2,800	~ \$ 2,900
ANNUAL PARTICIP. RATE **	~ 0.2%	~ 0.2%	~ 0.3%	~ 0.2%

* Based on household's total energy consumption

** Based on housing stock

N.B.: All numbers are approximate and refer to participants who have implemented EE measures



Results: Highlights

- Annual participation rates similar across regions
- Average energy savings higher in NY and MA
 - ▶ NY
 - *Turnkey one-stop-shop approach*
 - *Depth-of-savings incentives to contractors*
 - *Strong partnership with auditors/contractors*
 - *Low incentives to consumers (10 - 50% of installed costs)*
 - ▶ MA
 - *Turnkey one-stop-shop approach*
 - *High incentives to consumers (e.g. 75 % of insulation and sealing costs)*
- Average program costs much higher in NY



Conclusion

- Experience in retrofit programs is relatively limited
 - ▶ for mid- to high-income households (60% of Maine)

- Lessons learned from EE leaders
 - ▶ Good ideas for designing future strategies in Maine
 - ▶ Deep savings are achievable
 - ▶ **but... LOW PARTICIPATION RATES = CHALLENGE**
 - *Experience: ~0.2% annual participation rate*
 - *Maine: ~ 5.0% annual participation rate*

- **Urgent need to go beyond current practice to meet Maine's long-term savings goal**



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Next Steps: Innovate

- Considering several options
 - ▶ Build on NY/MA/CT strategies
 - ▶ Community-based strategies
 - ▶ Direct install
 - ▶ Do-it-yourself assistance

- Others
 - ▶ Assistance resources for auditors

- Likely a multiple track approach

Questions?

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