Connecticut Low Load and All-Electric Residential New Construction Study (R2015)

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Study completed by

Ingo Bensch,
Evergreen Economics

Andrea Salazar,
Michaels Energy

Study Context

Intended to inform future updates of Energize Connecticut's residential new construction program

- What does the next generation of residential new construction programs look like?
  - How to adjust to advancing industry practice?
  - How to move to low load and all-electric?
- What are leading programs' approaches / experiences?

Adjusted during reporting phases to all-electric program directive for 2022-2024 CLMP

Putting Energize CT RNC program in broader context

Energize Connecticut is recognized as one of the leading new construction programs nationally (by ACEEE)

Contains many of the elements of leading programs

- Tiered approach toward low (and negative) load
- All-electric component
- Passive House elements for multifamily
- Focused on heat pump technology

Implications

- Program advancement is about adjustments, not fundamentals
- Main need is an orderly transition to all-electric as directed by DEEP
- Four main groupings of recommendations in the report

All-Electric directive brings major implications and some ambiguity

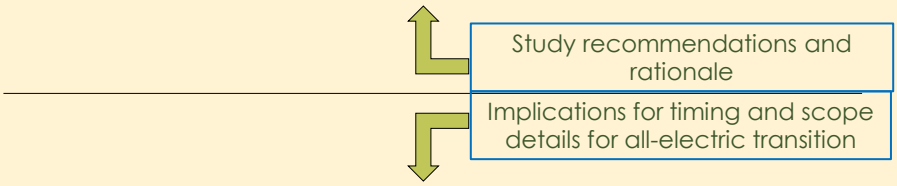
	Determination	Conditions of Approval
Timing	• Transition by July 2023 • Transition by end of 2023	• Begin accepting projects no later than July 2023
Impact on program design	Transition program into an all-electric offering	

- Added a new dimension to the focus of our findings and recommendations
- Different implications for program design and CES if….
  - transition is to be completed in 2023 (*rapid transition*) or begun by July 2023
  - all-electric offerings affect equipment rebates, whole home rebates, or all program-funded activity (*full all-electric*)

Program design details and emphasis – (1 of 3)

Adjust HERS tiers downward (to eliminate 51-60 offering)

- Why? Lowest tier is modestly above industry standard practice and upcoming energy code



If rapid transition to all-electric:

- Higher urgency for very low load. Consider tightening further.

Program design details and emphasis – (2 of 3)

Increase incentives for bonus offerings related to all-electric and ZERH

- Why? Build on existing all-electric components in the transition to an all-electric offering

If rapid transition to all-electric:

- Nature of partner program use changes too (so incentives are given only in all-electric home scenarios)

Program design details and emphasis – (3 of 3)

Expand non-financial offerings to more strongly support transition to all-electric through "market transformation" approaches

- Why? Last end-use transition appears to be barrier-laden; engaged market actors need support (and program will want to maintain the relationships)

If full all-electric program (i.e., no program activity for homes / market actors using other fuels):

- Program emphasis no longer market transformation, but electrification
- Codes and other efforts will need to fill gap
- Program should expect slow adoption while market catches up

Prepare for Future Energy-Home Interaction (PAs)

Continue to promote ZERH, Passive House

- Why? Low load benefits DR and dynamic pricing

Promote DR and dynamic pricing readiness through control systems and interfaces, usage feedback, coordination with PV and storage offerings

- Why? Time and place of usage will become increasingly important, especially with electrification paired with renewable generation

Integrate Policy, Codes, and Programs (1 of 2)

Lay out in Comprehensive Energy Strategy how RNC program is expected to help address state goals

- Specifically: Present share of climate goals; establish roadmap that links goals strategy and mechanisms; allow time for full transition to all-electric
- Why? Ensure linkage between policy and implementation

Integrate Policy, Codes, and Programs (2 of 2)

Coordinate with Office of the State Building Inspector on future code upgrades and all-electric requirements

- Specifically: Plan for future changes, communicate them, and use them to drive interest in the program (for builders seeking to stay ahead of what is coming)
- Why? Leverage future code to create program participation now and use program to increase ability of market to adjust to future code more easily

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If full all-electric program :

- More burden falls on codes and other efforts to push non-electric efficiency

Promote Forward-Looking Program Oversight and Incentives (1 of 2)

Shift substantial share of utility performance management incentive for RNC to GHG metrics

- Also: Include non-participant spillover impacts
- Why? Ensure linkage between main policy driver behind directives for RNC and what is measured and rewarded

Promote Forward-Looking Program Oversight and Incentives (2 of 2)

Facilitate and encourage shift toward greater market transformation efforts by RNC program

- Specifically:
  - Broaden definition of allowable, countable savings as needed
  - Direct program staff to focus on transformation of the new construction market
  - Conduct research to complement through study of indirect impacts (based on a vision from program staff about the likely mechanisms)
- Why? Ensure program focus is on addressing the new construction market as completely as possible rather than just "program participants" for whom rebates are attractive

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If full all-electric program:

- Program becomes electrification focused and preparatory. Market transformation would need to come from other efforts. ➔ Slow traction for all-electric RNC program.

Other Items in the Report

- More detail and discussion on the content above
  - Discussion throughout the report
  - Organized in same order as presented here
- Take-aways from about a dozen leading programs
  - Brief references throughout the report
  - More detail in Appendix B
- Additional concepts for considerations
  - Appendix C

Questions?