

ACEEE Market Transformation Zero Energy Roadmaps: A Path to Success April 3, 2017

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National Grid



- National leader in EE – ACEEE annual rankings
- Renewable energy: Late start, AMAZING commitment
- Created ZEB Road Map in 2016
- Recommendation for RI by 2036 (20 years)
 - Ramp to 100% ZEB construction in 2036
 - 10% of all existing converted to ZEB
 - Total 119 million sq. ft.



RI Zero Energy Buildings Task Force

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Multidisciplinary group and advisors consisting of building professionals and government agencies with a focus on zero-energy buildings (ZEBs).

Most lacked real ZEB experience, but not talent.



Renewables Slam Dunk?

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- RI Governor has Clean Energy Plan
- 1,000 MW of renewables generation in RI by 2020!
- Up from 138 Megawatts now
- ZEB Roadmap targets 974 MW for ZEB by 2036!!!!!!!!!!
- Need mechanisms to tie these RE to ZEB projects
 - REC's??
 - Work for Task Force

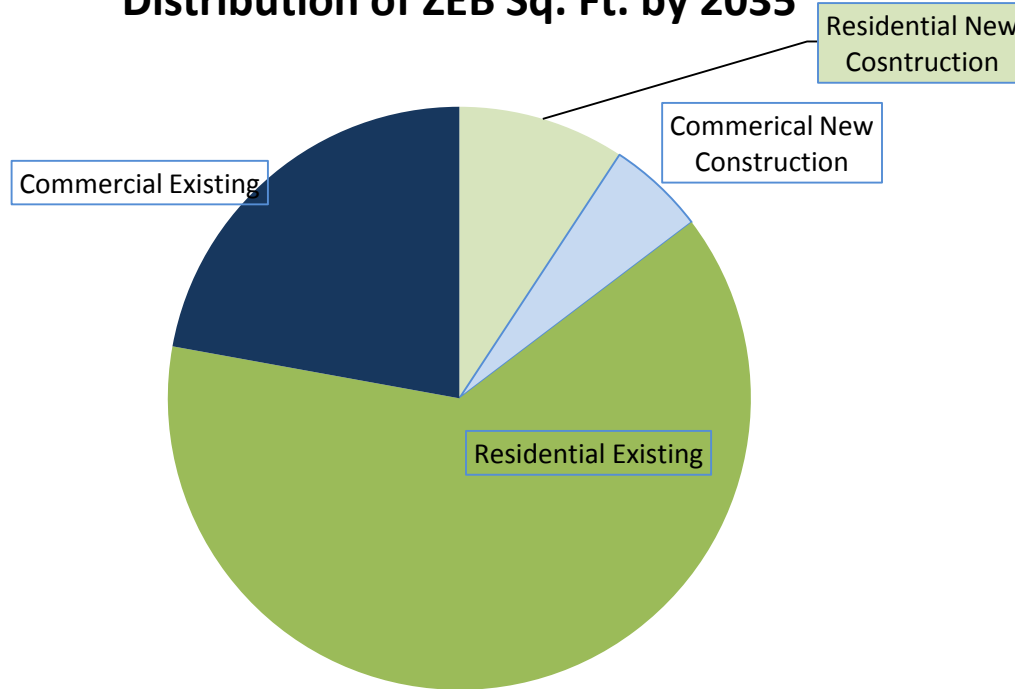


Roadmap and Codes

- Codes are fundamental in RI Roadmap
- RI business and government timid on energy code advancement
- State has endemic economic challenges
- Fear economic competition from neighbor states
- Insufficient resources / training for code officials
- New Stretch Code proposal only approximates IECC 2015
- ZEB code mandate supported by vast majority but unable to win consensus
- Code thinking must go beyond New Construction.



Distribution of ZEB Sq. Ft. by 2035



Only 14% of Roadmap 2036 goal is New Construction!!!!!!!



ZEB Code Worries from Marketplace

- Too few examples of cost effectiveness
- Insufficient market demand
- Insufficient local examples on C&I
- Insufficient exchange of knowledge on residential
- Design professional and trade capability (for volume)

I'll believe it when I see (a lot) it.



Path to a ZEB Code for RI

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- Long term ZEB Taskforce
- State Energy Office co-leaders
- Identifies need to transform code

The Plan

- Move demonstration projects
- Prove ZEB is economical / viable
- Promote public and private growth

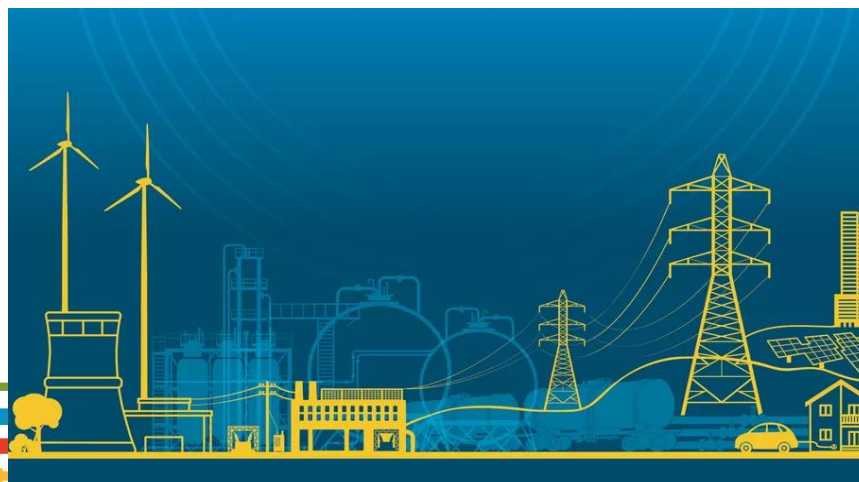


Path to a ZEB Code for RI

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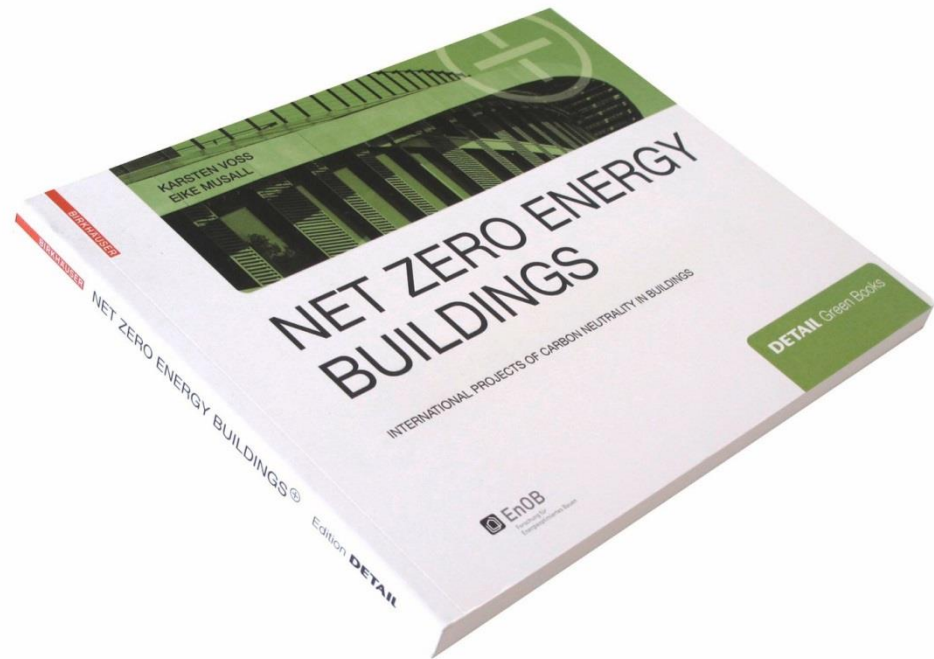
- Codes are fundamental but
 - Passing codes typically require acceptance by market
 - Some market have too many questions / concerns
- Utilities need to lead in education and demonstration efforts
- Continue to lead with technical support and incentives
- Existing homes / buildings are the real need!



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THANK YOU!



The following slides are extra
support materials



A Different Perspective.....

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- National leader in EE – ACEEE annual rankings
- RI Renewable Programs
 - Renewable Energy Growth Program
 - Renewable Energy Fund
 - Net Metering
 - Virtual Net Metering
 - Long-term contract standard for Renewable Energy
- GHG Goal – reduce by 45% by 2035



Rhode Island

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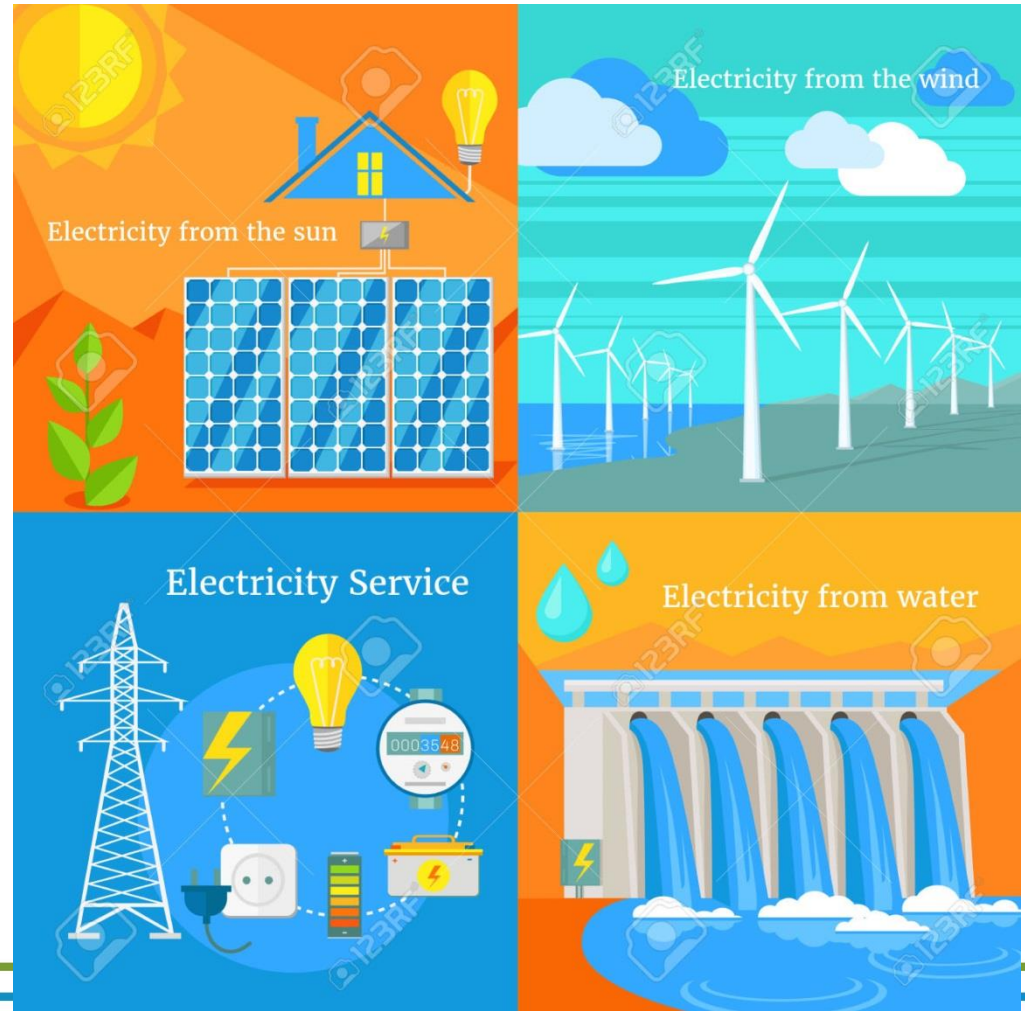
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Currently: 138 MW
Clean Energy

Governor Raimondo

1,000 MW

Clean Energy by 2020!



Multidisciplinary group and advisors consisting of building professionals with a focus on zero-energy buildings (ZEBs).



Need better image

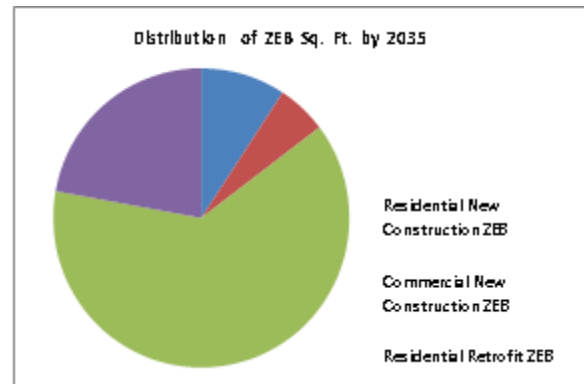


Figure 3: Break down of residential and commercial ZEB square feet to meet ZEB goals of white paper



Need better image

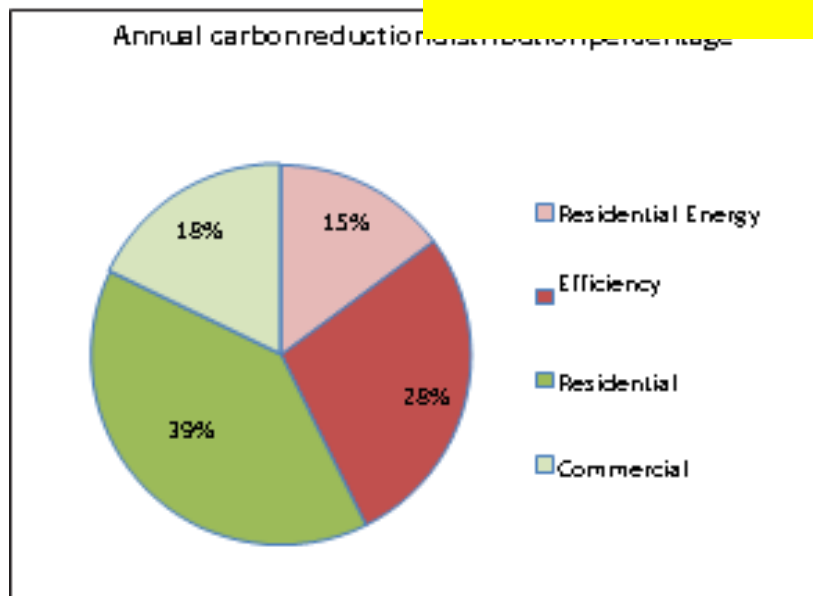


Figure 7: Carbon reduction contribution of ZEBs by sector



20 – Year Pathway to ZEBs

- Establish ZEBs as a State Priority to align with GHG goals
- Launch State-wide ZEB program
- Enhance utility's energy efficiency programs.
 - Integrate between EE and renewables



- Why not codes immediately
 - Code officials not ready
 - RIBA not ready
 - Code impact
 - New cost benefit requirement for adoption of codes
 - Very weak economy
 - High unemployment
 - Strained State budgets



Bottom Up - Residential

- Continuation of strong EE programs
 - Existing homes
 - Retrofit
 - New Construction

	All Homes (without Code Plus)									
	2012		2013		2014		2015		2016	
	#	%	#	%	#	%	#	%	#	%
T1	245	66%	90	32%	46	28%	128	32%	94	31%
T2	122	33%	174	62%	108	66%	258	65%	198	64%
T3	6	2%	17	6%	9	6%	9	2%	16	5%

Bottom Up - Residential

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Next Steps

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Top Down

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