ACEEE 30
30 Years of Energizing Efficiency

US Building Energy Efficiency Policies and Onsite Power Production Credit through the Energy Rating Index

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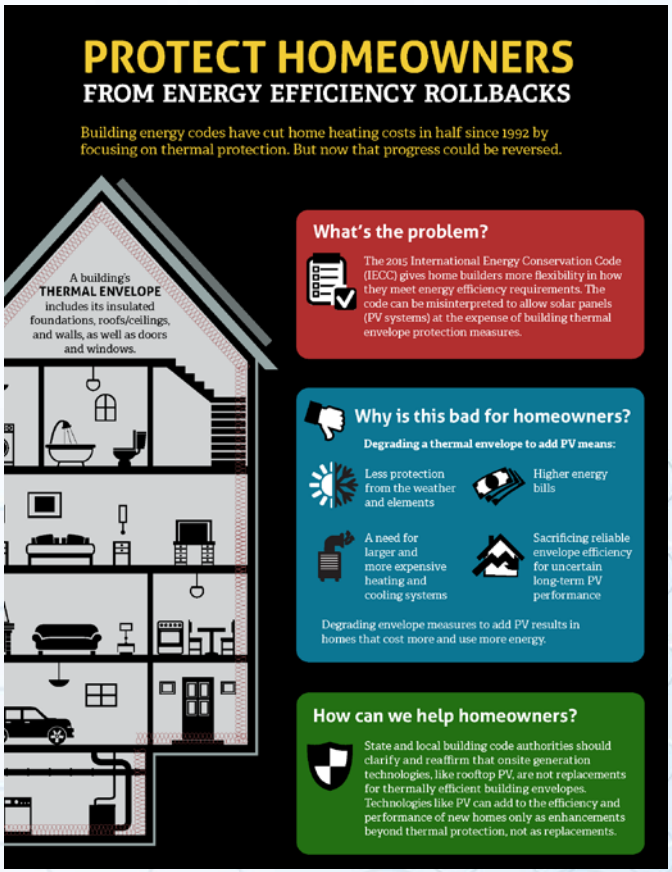
Today's Topics

- Policy concerns with the ERI and renewable energy credit for compliance
- US Energy Efficiency Policy Review
  - Policy drivers
  - US energy policy
  - US policy on energy codes
- Review of ERI proposals for 2018 IECC
- Remarks on policy guidance

Policy Concerns with renewables in the ERI



- Onsite power not permitted in 2015
- Replacing EE with onsite power not intent of code
- Potential Loophole for minimum code compliance
- Unintended consequences

Energy Policy Drivers in the US

Federal	State	Local
Economic Development • Support broad economic growth **Environmental Protection** • Protect public health • Reduce carbon emissions **Energy Security** • Reduce dependence on oil • Maintain reliability of grid infrastructure	**Economic Development** • Attract jobs and industry • Improve power-supply reliability • Reduce need for large-scale capital investments in power supply • Reduce consumer energy bills **Environmental Protection** • Improve regional air quality • Reduce carbon emissions **Energy Security** • Fuel diversity (electric and transport) • Price stability	**Economic Development** • Foster local economic development • Reduce traffic **Environmental Protection** • Improve local air quality **Energy Security** • Fuel diversity (electric and transport)

US National Energy Policy

“All-of-the-Above includes:

- Reducing Our Dependence on Foreign Oil
- Safe and Responsible Domestic Oil and Gas Production
- Carbon Capture and Sequestration Technologies
- Advancing Clean Energy
- **Advancing Energy Efficiency**
- Developing Clean Fuels
- Investing in Coal Communities, Workers, and Technology: The POWER+ Plan

Building Sector Energy Policy Priorities

- Energy Efficiency Resource Standard (EERS)
- Air Emissions Regulations
- Climate Change Policy
- Utility Regulation and Policy
- **Building Energy Codes**
- Appliance and Equipment Standards
- Retrofits of Existing Building Stock

Building Energy Code Policy as per ECPA (1974, 1976, 1981, 1992)

Congressional Findings

1. Buildings lack EE features & waste energy
2. Energy codes can prevent such waste
3. Failure to provide EE increases costs
4. State/local codes best to implement

Congressional Policy Directives/Purpose

1. Redirect Federal policies and practices to assure EE in Bldgs
2. Achieve ***maximum practicable*** improvements in EE and ***increase use of nondepletable energy***
3. State/local adoption/enforcement

Policy points for ERI onsite power production (OPP) credit discussion

- US energy policy clearly prioritizes EE features in new buildings to reduce energy waste and reduce operating costs
  - The purpose of the IECC is to "***regulate the design and construction of buildings for the effective use and conservation of energy over the useful life of each building.***"
- EE improvements to energy code should be ***"maximum practicable"***
- Energy code should continually improve with no backsliding (i.e. DOE determination criterion)
- Energy code should also increase use of renewables ("additionality")

Recent State Energy Code Actions

- States with ERI as published in IECC
  - NY, MD, MI, IL, NJ
- States with ERI Modified (by rule or legislation) to regulate OPP and credits
  - TX – no OPP credit allowed in score
  - VT – ERI scores with a 5% max OPP
  - FL – Legislation to require study on issue
  - MA – Considering limits for OPP
  - WA – Eliminated ERI path
- States with Modified ERI Index Score
  - AL, TX, UT

Review of the ERI proposals for the 2018 ECC

- A total of 24 proposals affecting Section 406 and the ERI were submitted
- 16 proposals deal directly with the ERI scores, OPP and envelope tradeoffs
- The OPPs include proposals that:
  - Do not allow OPP credits
  - Allow onsite generation, but with limits
  - Allow unlimited onsite generation

Proposals on ERI Envelope Backstops

Prop Num.	Representing	Summary	Policy Test
RE156	NAHB	Modifies thermal envelope backstop of Energy Rating Index to be ≤ the Total UA of current code x 1.15; deletes SHGC requirements.	**Weakens Backstop**
RE157	EECC	Modifies thermal envelope backstop of Energy Rating Index from the prescriptive requirements of the 2009 IECC to the prescriptive requirements of the current code.	**Improves Backstop**
RE158	EECC	Modifies thermal envelope backstop of the ERI from the prescriptive requirements of the 2009 IECC to a requirement that the building thermal envelope comply with section 402.1.5 (Total UA Alternative).	**Improves Backstop**
RE160	LBA	Modifies thermal envelope backstop of the ERI from the prescriptive requirements of the 2009 IECC to a requirement that the building thermal envelope comply with the total UA alternative of the 2009 IECC calculated in accordance with section 402.1.4.	**Backstop Modestly Changed from 2015; Adds More Flexibility**
RE162	Energy Logic	Deletes thermal envelope backstop from Energy Rating Index; requires that ERI be calculated before solar is added into the calculation.	**Removes Backstop**

Proposals for ERI OPP Credit

Prop Num.	Representing	Summary	Policy Test
RE164	EECC	Clarifies that ERI calculation shall not consider or include the effect of on-site power production; requires compliance software to demonstrate that no on-site power production is included in ERI calculation.	**No OPP Credit for ERI**
RE165	LBA	Replaces ERI calculation methodology with reference to RESNET 301; allows a percentage of on-site power to be incorporated in ERI calculation, based on the ERI of the rated design adopted by a jurisdiction. Percentages range from 0% for ERI of 65 and above to 100% for ERI of 45 and below, according to new table. Compliance software tools must also be approved per RESNET 301.	**Limits on OPP**
RE166	RESNET	Replaces ERI calculation methodology with reference to RESNET 301; requires compliance software tools to be approved per RESNET 301.	**RESNET 301 allows OPP Credit**
RE168	NRDC	Replaces ERI calculation methodology with reference to RESNET 301; permits consideration of on-site power production in ERI calculation only if the ERI without on-site power included would meet the ERI values in new table (scores between 57-61, depending on cz); requires compliance software tools to be approved per RESNET 301.	**OPP Credit for more stringent ERI score**
RE170	Craig Conner	Bases ERI reference design on RESNET 301; requires proposed home to have annual energy cost less than energy cost of ERI reference design; includes new equation for calculation of ERI.	**RESNET 301 allows OPP Credit**
RE175	LBA	Allows a percentage of on-site power to be incorporated in ERI calculation, based on the ERI of the rated design adopted by a jurisdiction. Percentages range from 0% for ERI of 65 and above to 100% for ERI of 45 and below, according to new table.	**Limits on OPP**
RE176	RESNET	Includes on-site power production in calculation of ERI in accordance with RESNET 301; allows a percentage of on-site power to be incorporated in ERI calculation, based on the ERI of the rated design adopted by a jurisdiction. Percentages range from 0% for ERI of 65 and above to 100% for ERI of 45 and below, according to new table.	**Limits on OPP**
RE177	IMT	Permits consideration of on-site renewable energy in ERI calculation only if the ERI without on-site renewable energy included would meet the ERI values in new table (scores between 57-61, depending on cz); adds definition of on-site renewable energy.	**OPP Credit for more stringent ERI score**

Proposals to Modify the ERI Scores

Prop Num.	Representing	Summary	Policy Test
RE172	NAHB	Increases maximum ERI scores from (51-55) to (64-70).	**Backsliding on ERI scores**
RE173	LBA	Increases maximum ERI scores from (51-55) to (57-62).	**Backsliding on ERI scores**
RE174	NRDC	Lowers maximum ERI scores from (51-55) to (49-52) to account for hot water efficiency update in HERS.	**Updates more stringent ERI scores**

Recommendations for Policy Guidance on ERI and OPP Credits

- Adhere to national energy code policy principles, and:
  - Support more stringent ERI scores
  - Support strong envelope backstop requirements
  - Disallow OPP credit towards minimum code compliance; no EE tradeoffs
  - Allow OPP credit towards ERI score only for beyond code performance
    - But for EE tax credits, no double-dipping with solar credit

ACEEE Energy Policy Resources

- Policy Briefs
- ACEEE Energy Policy Scorecards:
  - International Energy Efficiency Scorecard
  - State Energy Efficiency Scorecard
  - The City Energy Efficiency Scorecard
- State and Local Energy Efficiency Policy Database
- Policy Toolkits

Thank You for Your Attention!

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