

Assessment of the Renewable Electricity Standard and Expanded Clean Energy Scenarios

**American Council for an
Energy-Efficient Economy (ACEEE)**

December 5, 2007

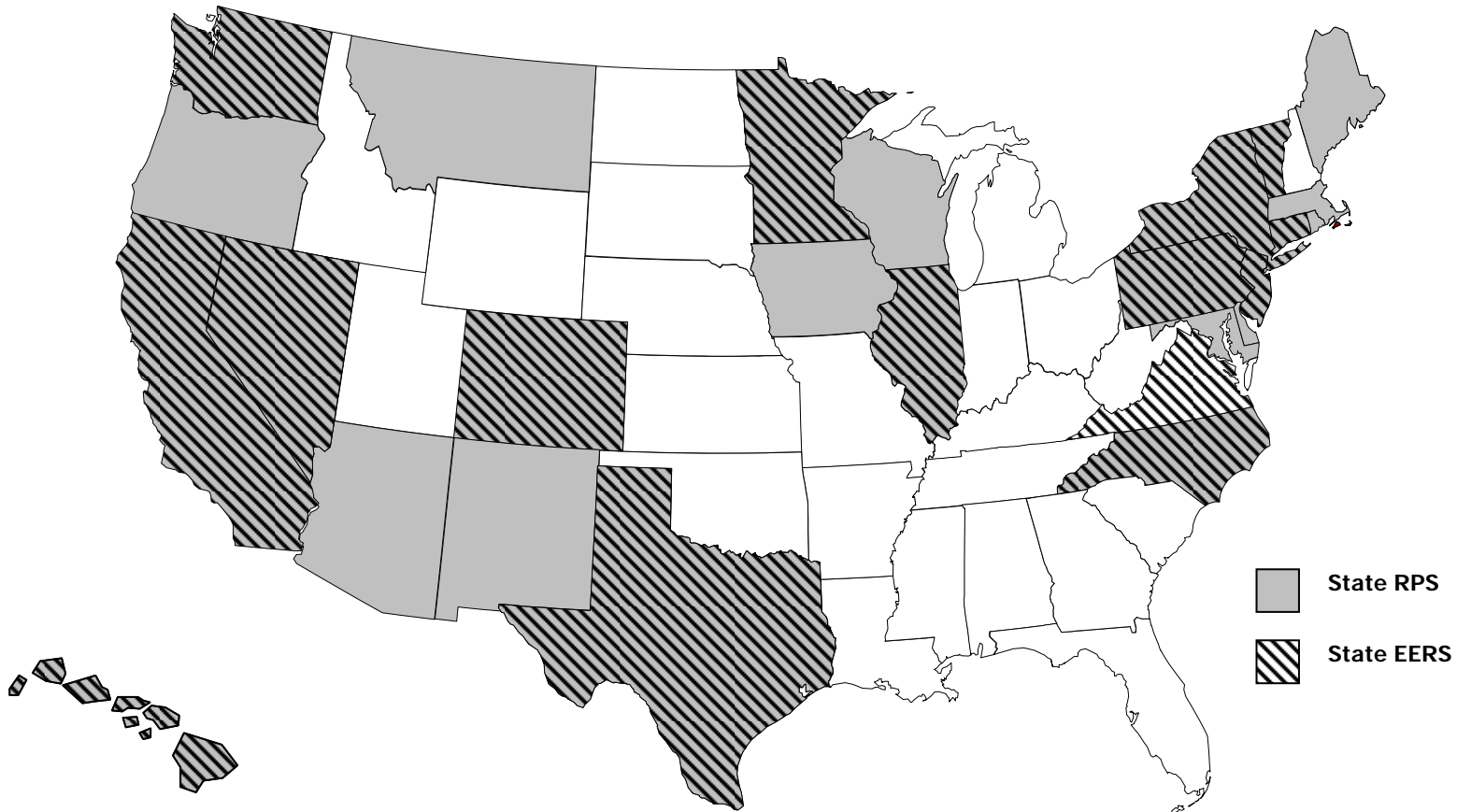


Project Overview

- ACEEE Analysis of Renewable Electricity Standard (RES) included in the August House energy bill (H.R. 3221)
- Given that several states are already pursuing aggressive targets, we also include more aggressive RES-EERS scenarios
- Frame scenarios in a climate policy context



States with EERS and RES Activity



Note: New Jersey and New York have pending EERS requirements.

Source: ACEEE 2007. <http://www.aceee.org/energy/state/2pgEERS.pdf>



Scenario Overview

Nominal Renewable and Efficiency Targets

| | House RES (Scenario 1) (RE,EE) | 10% EE (Scenario 2) (EE) | “15-15” Scenario (Scenario 3) (RE,EE) |
|------|--------------------------------------|--------------------------------|---|
| 2015 | 4.7%,1.8% | 6% | 4.8%,4.8% |
| 2020 | 11%,4% | 10% | 10%,10% |
| 2025 | 11%,4% | 10% | 15%,15% |

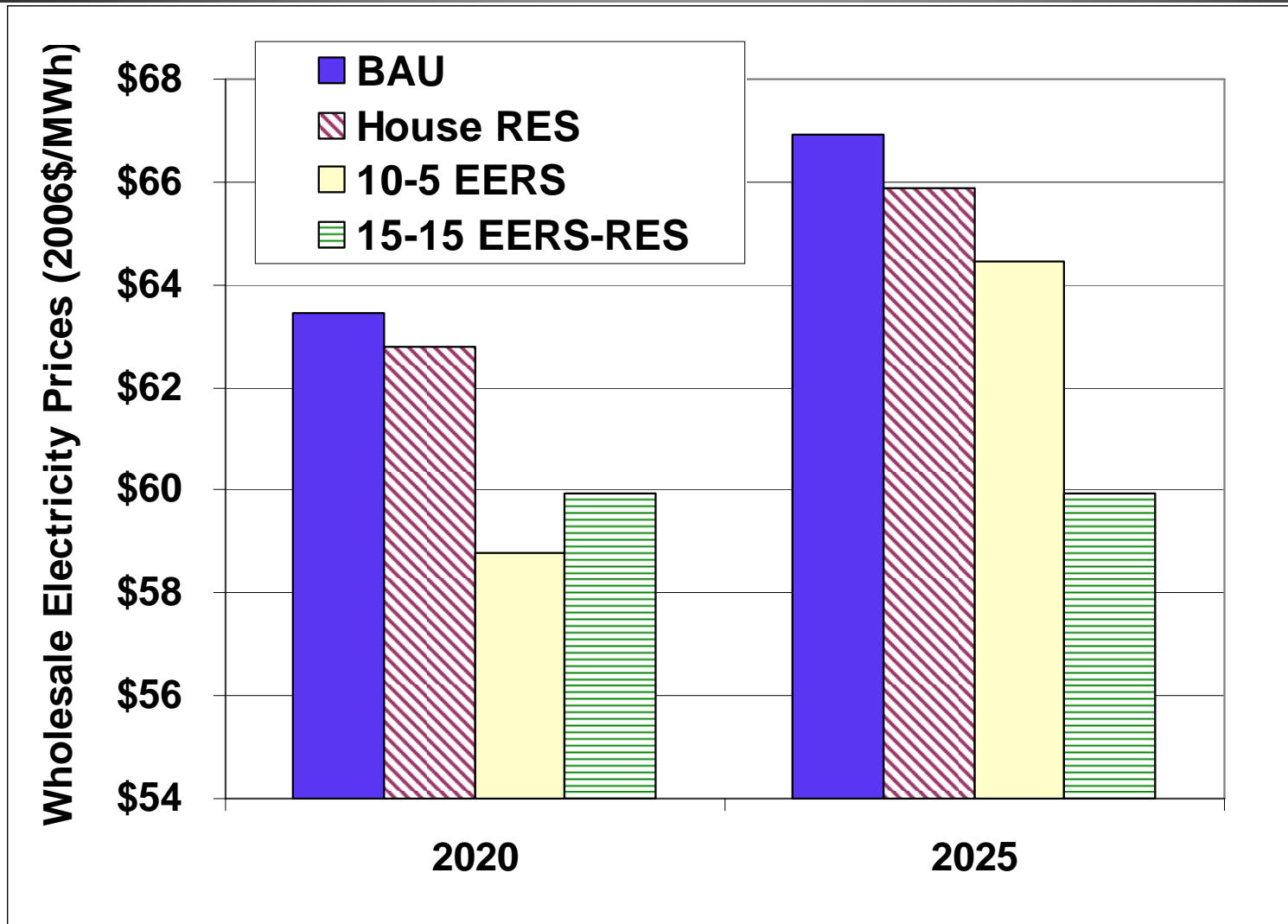
Results – House RES

- House RES
 - 22 TWh reduction in annual electricity usage by 2030
 - 3% reduction in BAU annual CO2 emissions by 2030
 - 16,000 MW of avoided conventional powerplant construction
- In Climate Policy Framework
 - 246 TWh reduction in annual electricity usage
 - 22% reduction in BAU annual CO2 emissions
 - 32,000 MW of total saved capacity

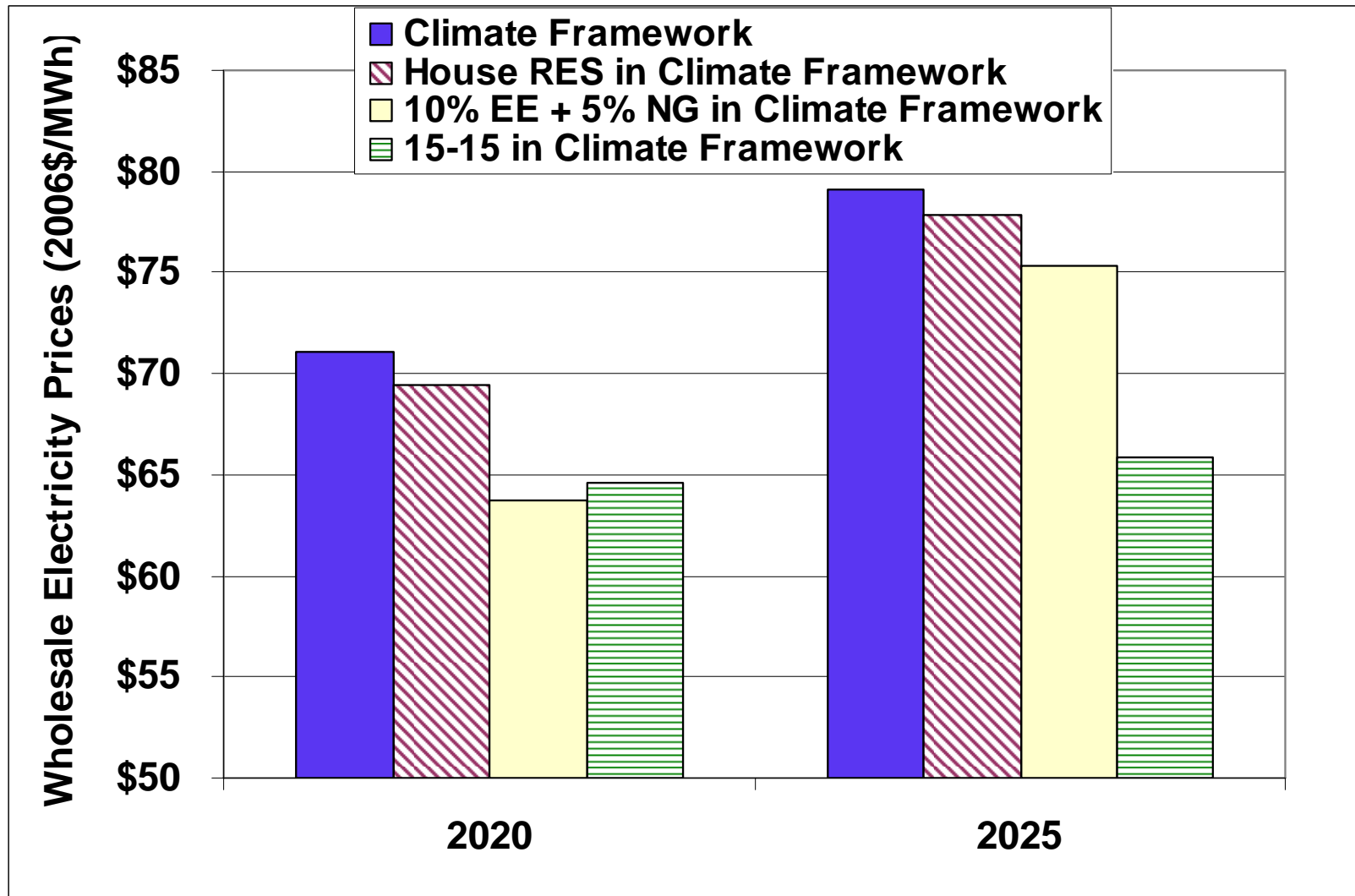
Results – “15-15” Scenario

- “15-15” Scenario
 - 507 TWh reduction in annual electricity usage by 2030
 - 18% reduction in BAU annual CO₂ emissions by 2030
 - 71,000 MW of total capacity savings by 2030
- In Climate Policy Framework
 - 699 TWh reduction in annual electricity usage by 2030
 - 29% reduction in BAU annual CO₂ emissions by 2030
 - 108,000 MW of total capacity savings by 2030

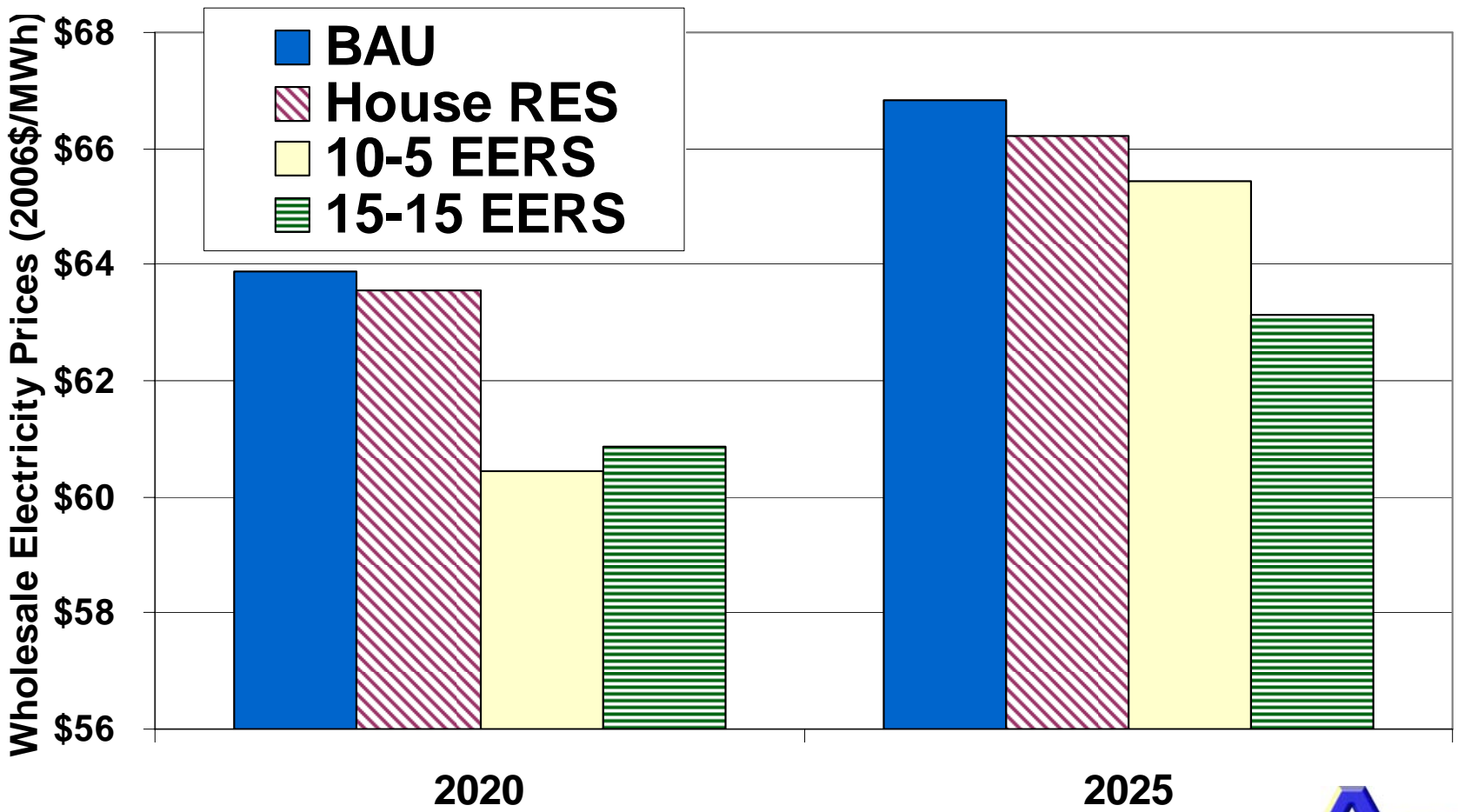
National Wholesale Electricity Prices in BAU and Clean Energy Scenarios



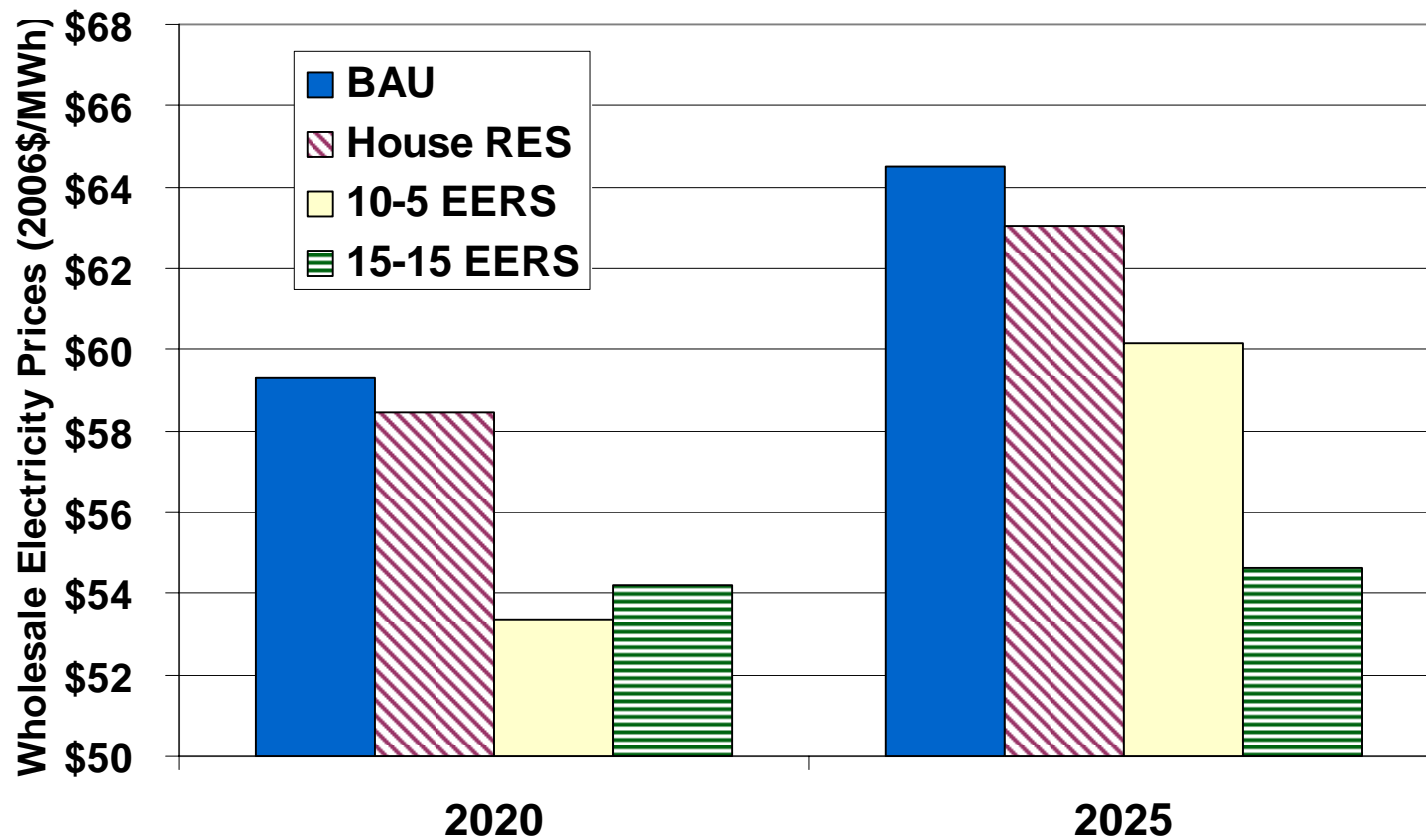
National Wholesale Electricity Prices in Climate Framework and Clean Energy Scenarios



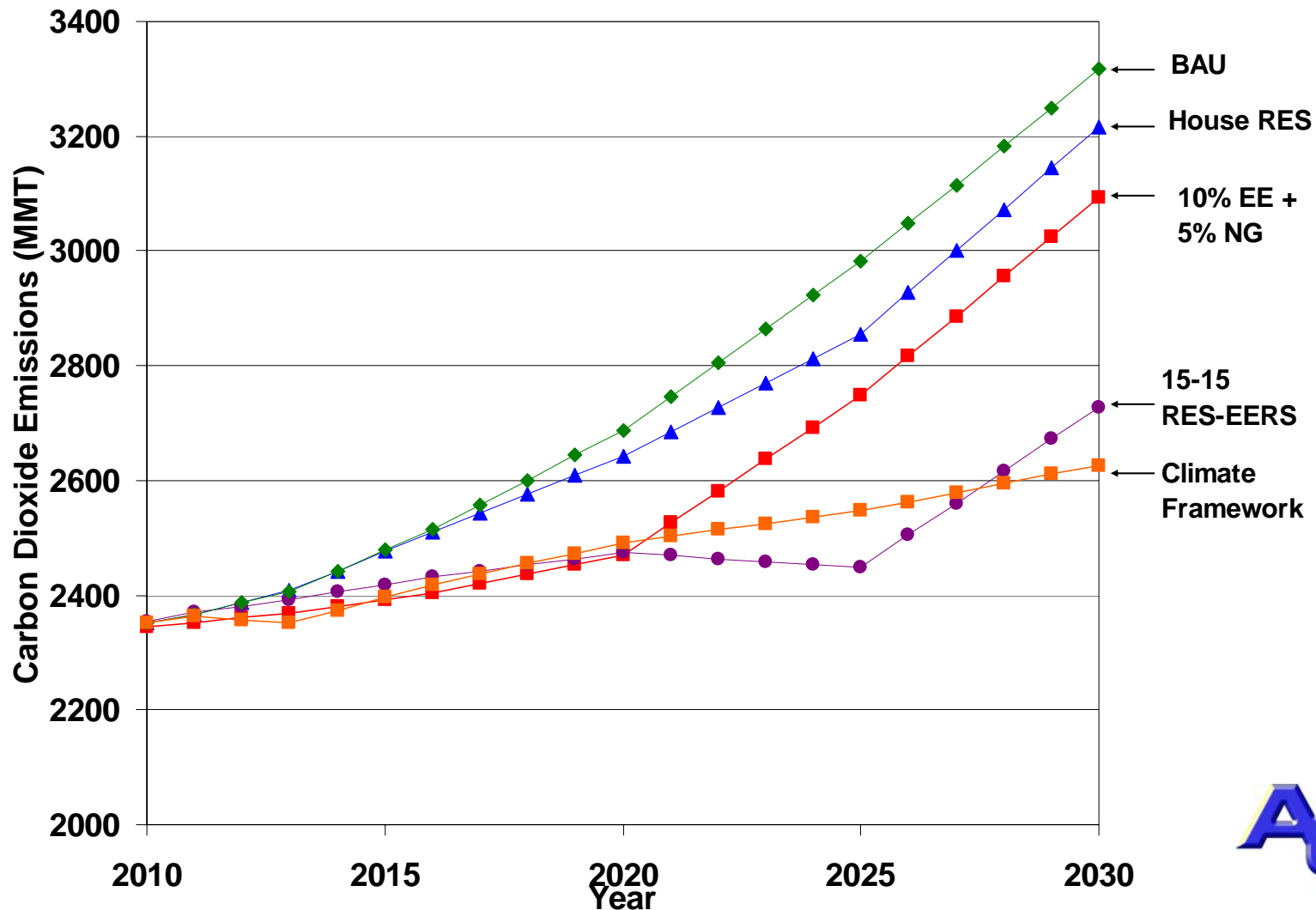
Southeast Wholesale Electricity Prices in BAU and Clean Energy Scenarios



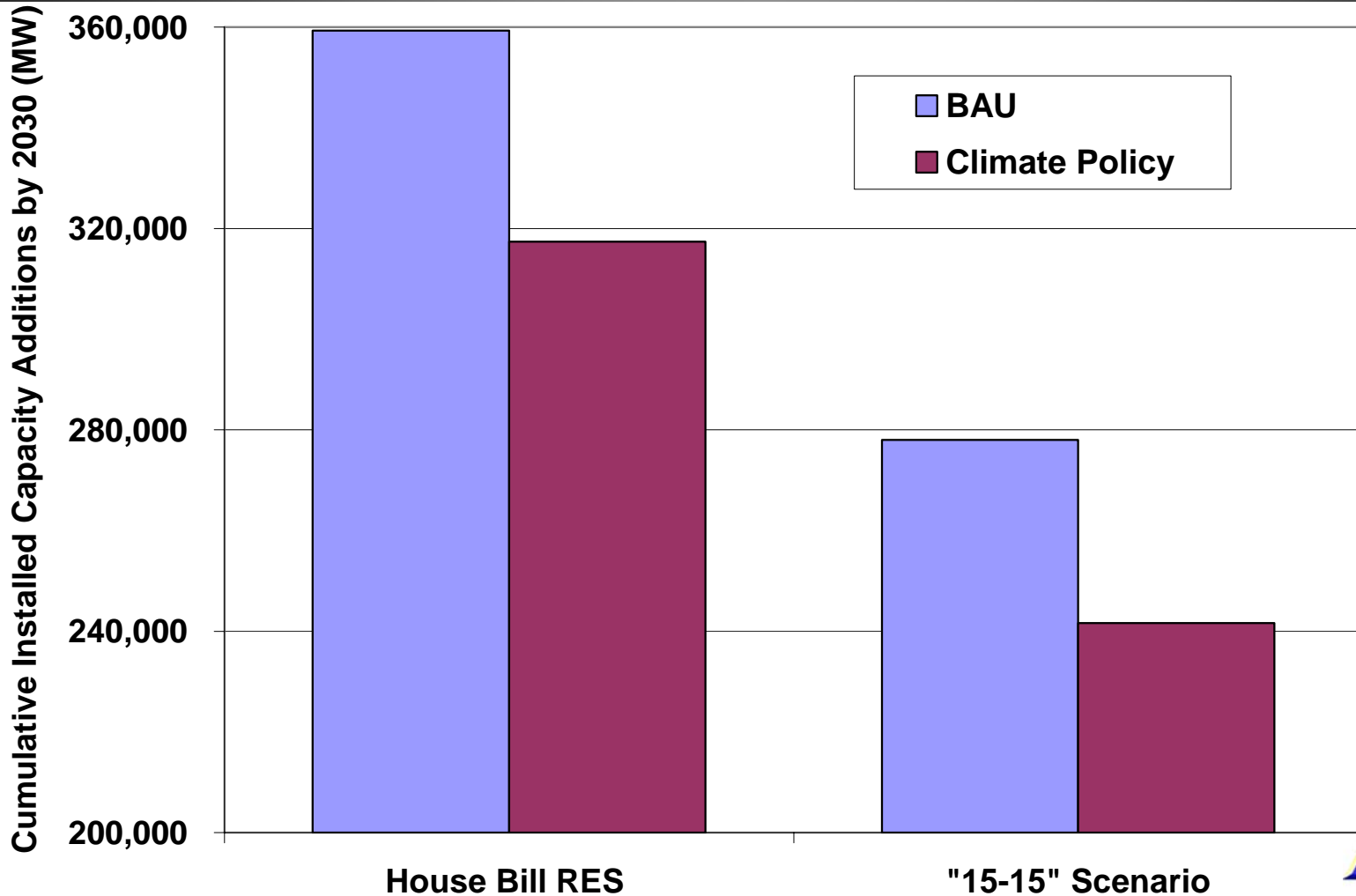
Midwest Wholesale Electricity Prices in BAU and Clean Energy Scenarios



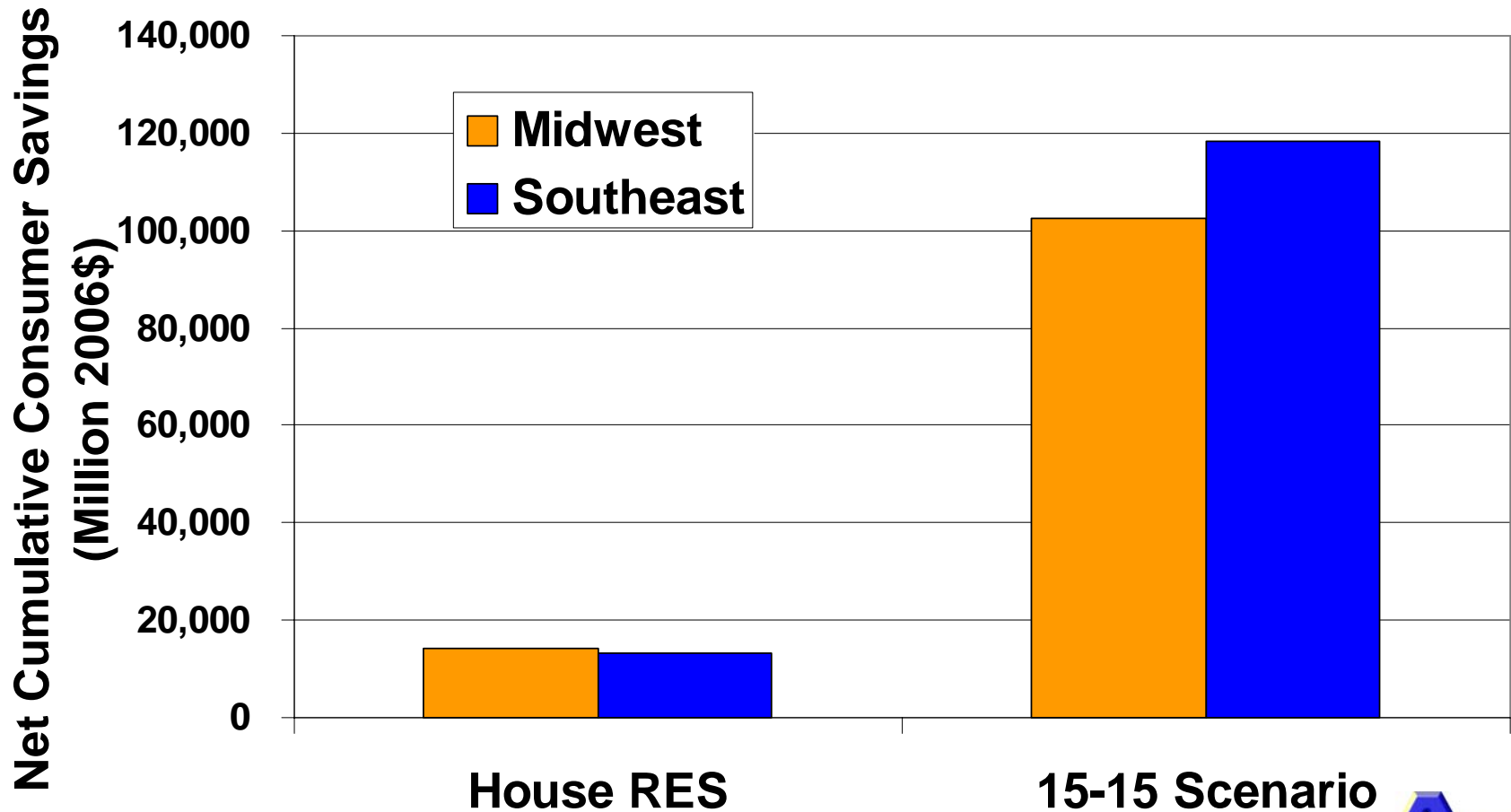
CO2 Emissions in BAU and Clean Energy Scenarios



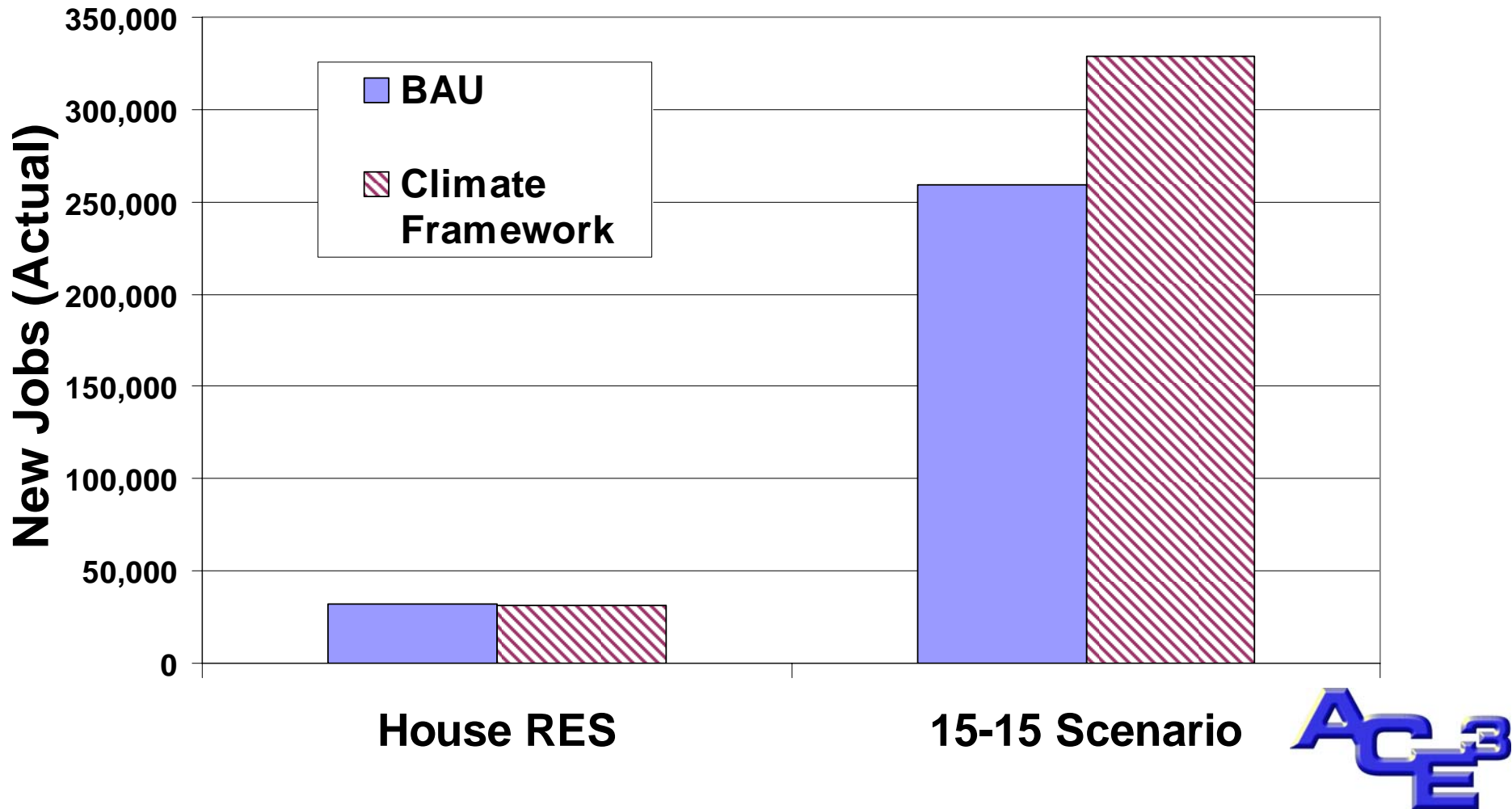
New Capacity Needs in Business as Usual and Climate Policy Frameworks



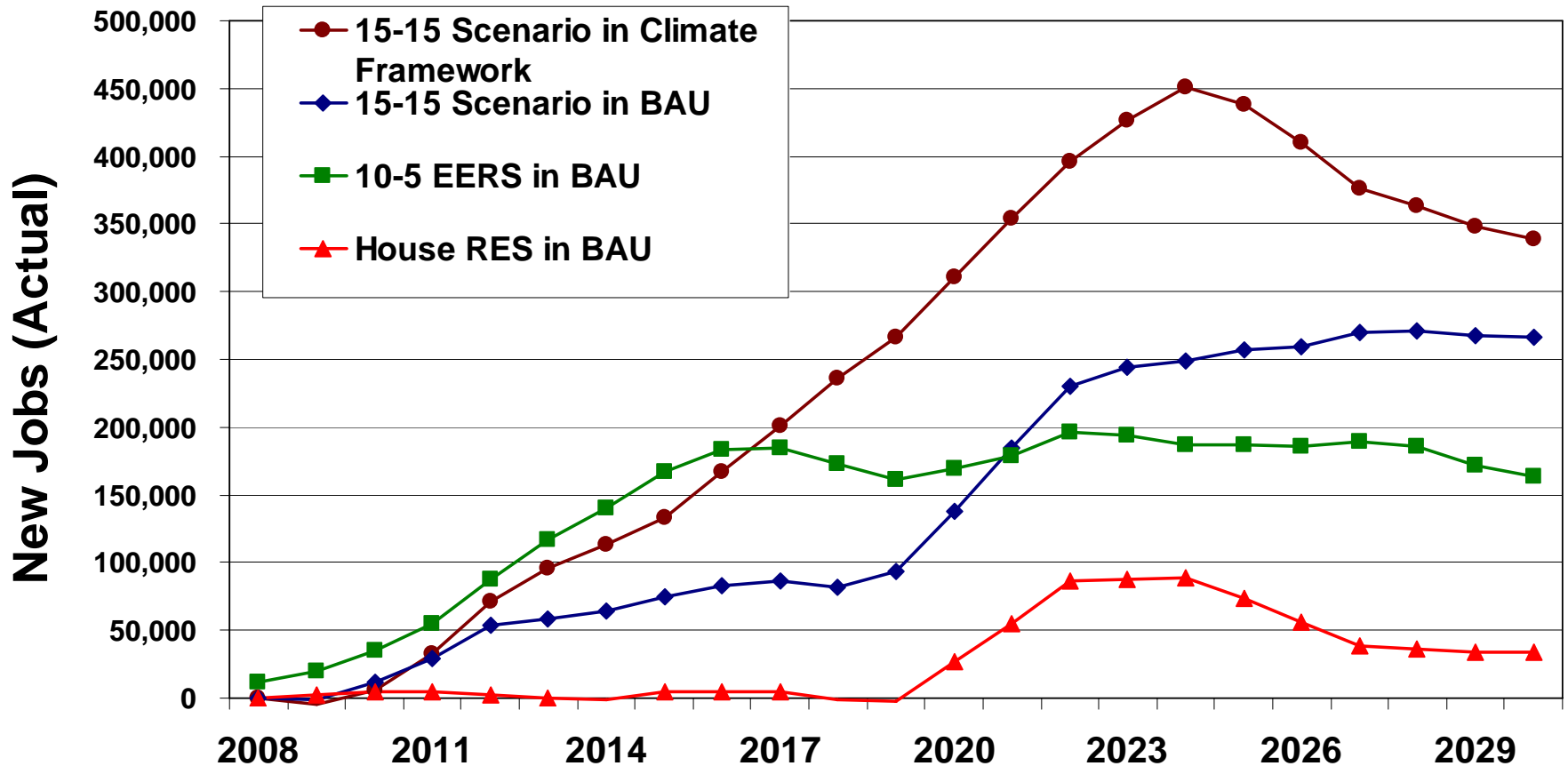
Regional Consumer Energy Savings by Scenario



National Net Employment Impacts in 2030 by Scenario



National Net Employment Impacts By Scenario



Methodology

ACEEE Scenario development

- Three scenarios:
 - House RES (11% renewables, 4% efficiency)
 - 10-5 EERS (10% electricity efficiency + 5% natural gas efficiency)
 - 15-15 RES-EERS (15% efficiency + 15% renewables)
- Two frameworks:
 - Business-as-usual without federal climate policy
 - Climate policy framework (representative of the proposal offered by Senators Bingaman and Specter)



Methodology (2)

- Engaged ICF Consulting to run Integrated Planning Model (IPM) for scenarios.
Outputs:
 - Electric sector impacts of multiple scenarios
 - Policy compliance costs
- Input results into ACEEE's DEEPER macro-economic model. Outputs:
 - Jobs, consumer savings, wages, and GDP impacts

