



Energy Efficiency in Tennessee: Overview of ACEEE Energy Efficiency Potential Assessments

Presented to TVA IRP EE/DR Workshop

December 10, 2009

Max Neubauer, Research Associate, Policy Program

Harvey Sachs, Senior Fellow, Buildings Program

American Council for an Energy-Efficient Economy

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

30 year old, non-profit 501(c)(3) dedicated to advancing energy efficiency through research and dissemination.

35+ staff in Washington DC, + field offices in DE, MI, WA and WI.

Focus on End-Use Efficiency in Industry, Buildings, Utilities, and Transportation; Economic Analysis & Human Behavior; and State & National Policy

Funding:

- Foundations (34%)
- Federal & State Grants (7%)
- Specific Contract work (21%)
- Conferences and Publications (34%)
- Contributions and Other (4%)

Presentation Objectives:

- EE is demonstrably the least cost resource
- EE is likely to be able to meet all net resource growth requirements – based on other states.
- Other paths reduce economic growth and increase environmental risks.

ACEEE State Clean Energy Resource Project

Funded by Energy Foundation, U.S. EPA, & U.S. DOE to:
Prepare 3-4 state energy efficiency potential assessments for “transitional states” per year

- Completed studies for Texas, Florida, Maryland, Virginia, Pennsylvania, Ohio, and South Carolina
- Working on studies for North Carolina and Arkansas
- Studies co-funded by in-state groups
- Analysis targeted to meet state’s policy needs – e.g., electricity, gas, on-site renewables, transport, water

Assist states with ongoing energy policy implementation

Project Approach

State-specific data collection

Stakeholder outreach:

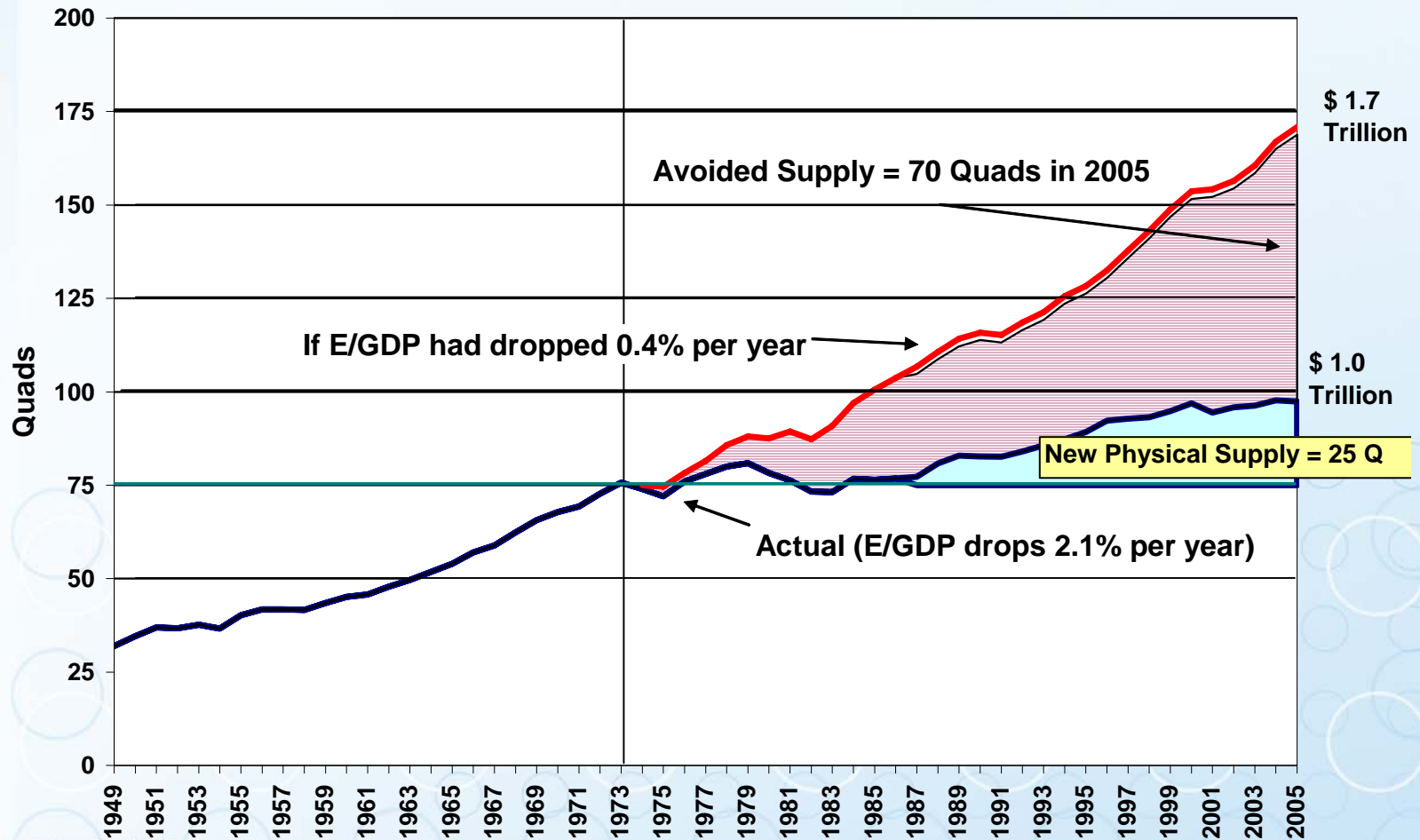
- Utility sector
- Industrial and Business Associations
- Environmental and Low Income organizations
- State Government (utility commissions, energy office, state legislature, and others)

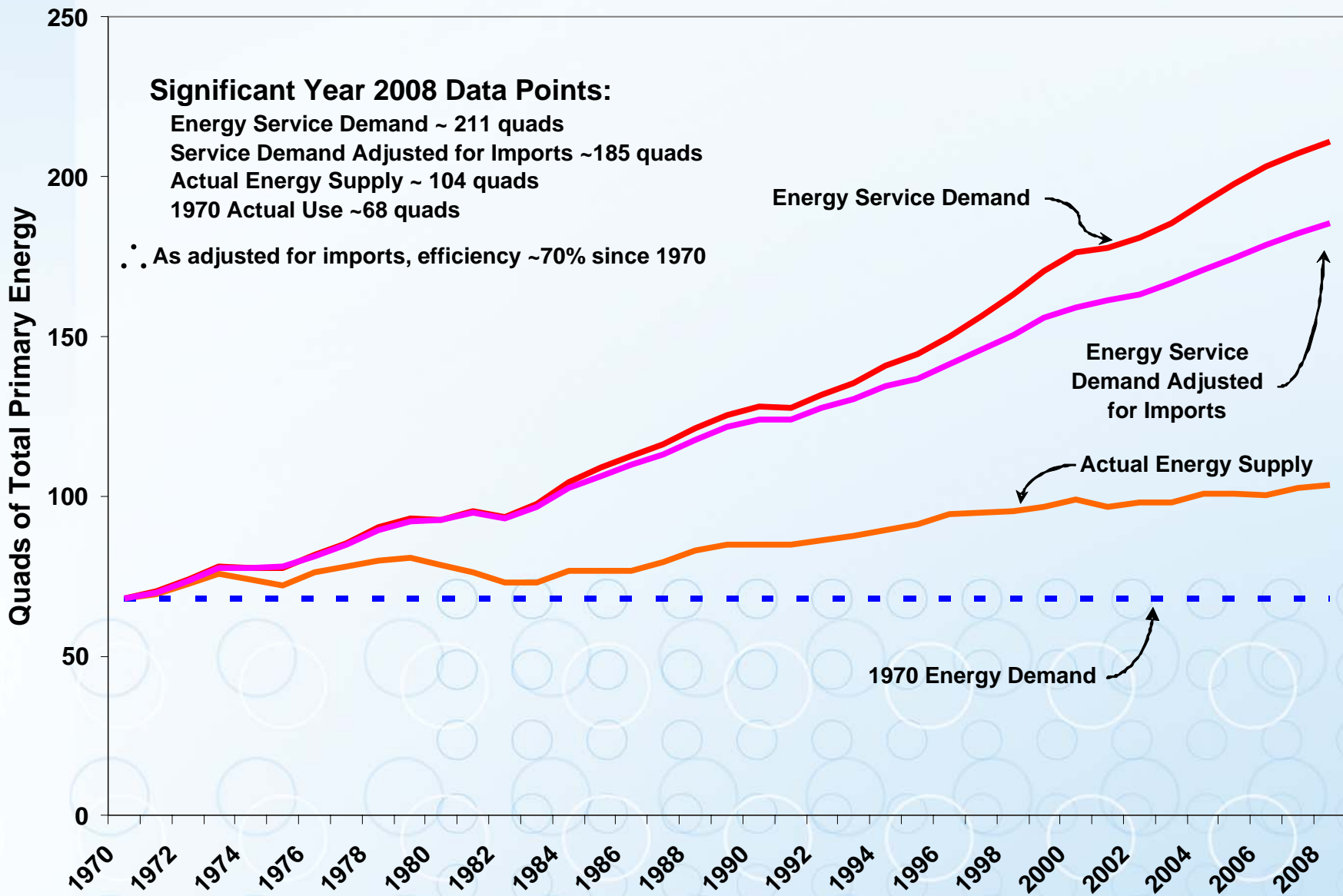
Analysis and report preparation

Report release and media

Policy Implementation Assistance

Energy Efficiency's Past Success



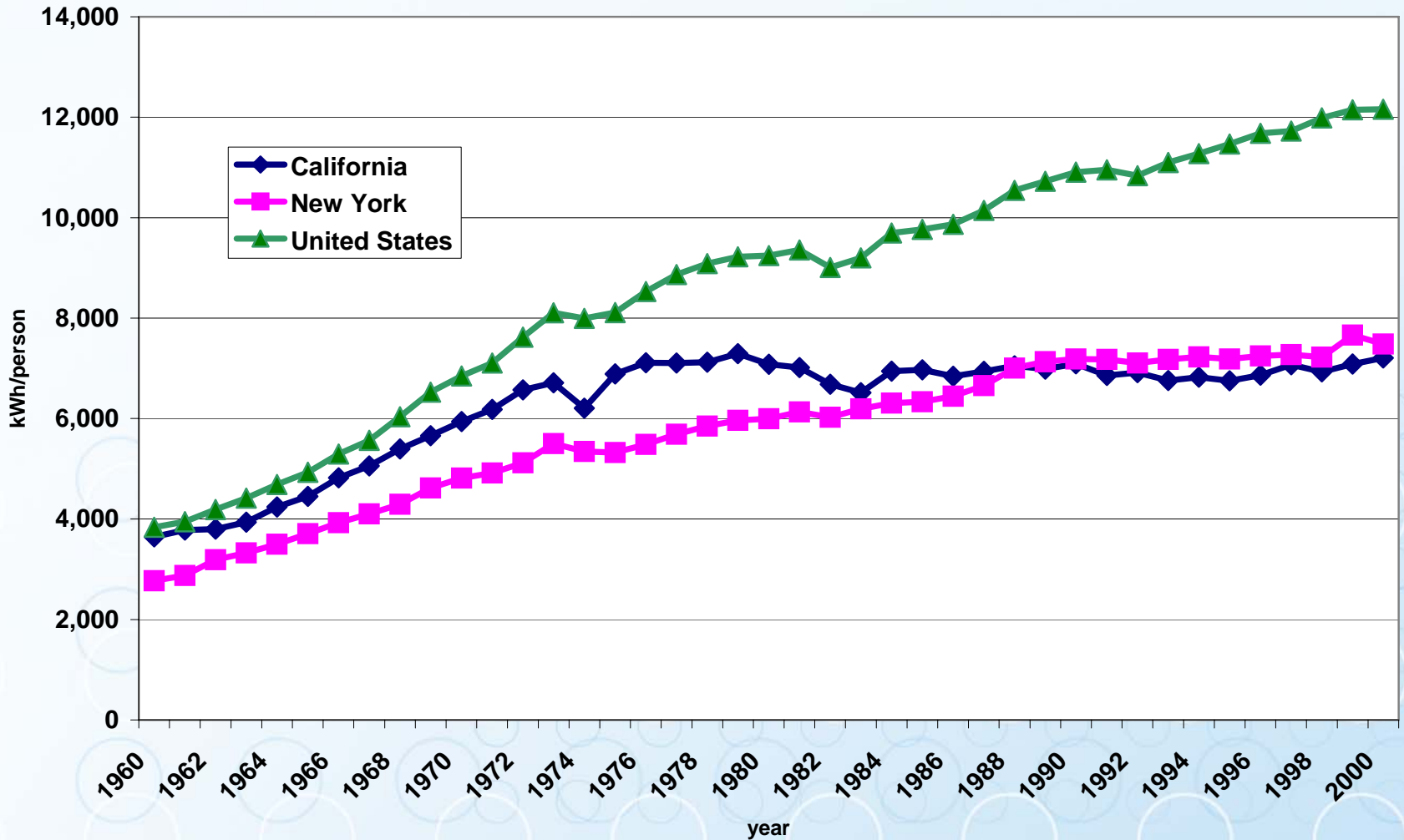




American Council for an Energy-Efficient Economy

Per Capita Electricity Consumption

Source documentation http://www.eia.doe.gov/emeu/states/sep_use/total/csv/use_csv.html



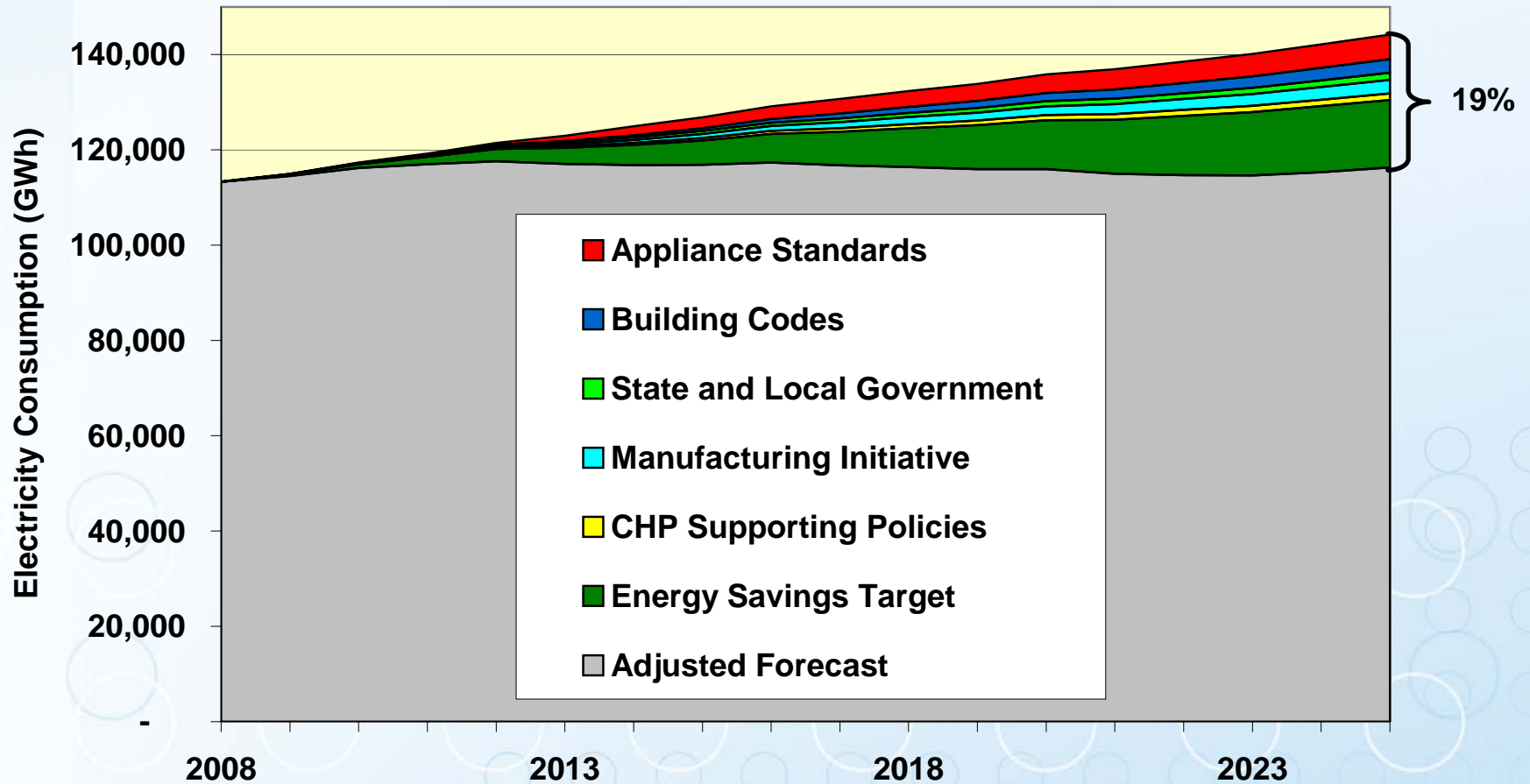
Virginia Analysis: Levels of Energy Efficiency Potential We Analyzed

Energy Efficiency Resource Potential in 2025

- **Cost Effective Resource = ~44,000 GWh (31% of projected sales)**
- **Policy Analysis = ~28,000 GWh (19% of projected sales)**

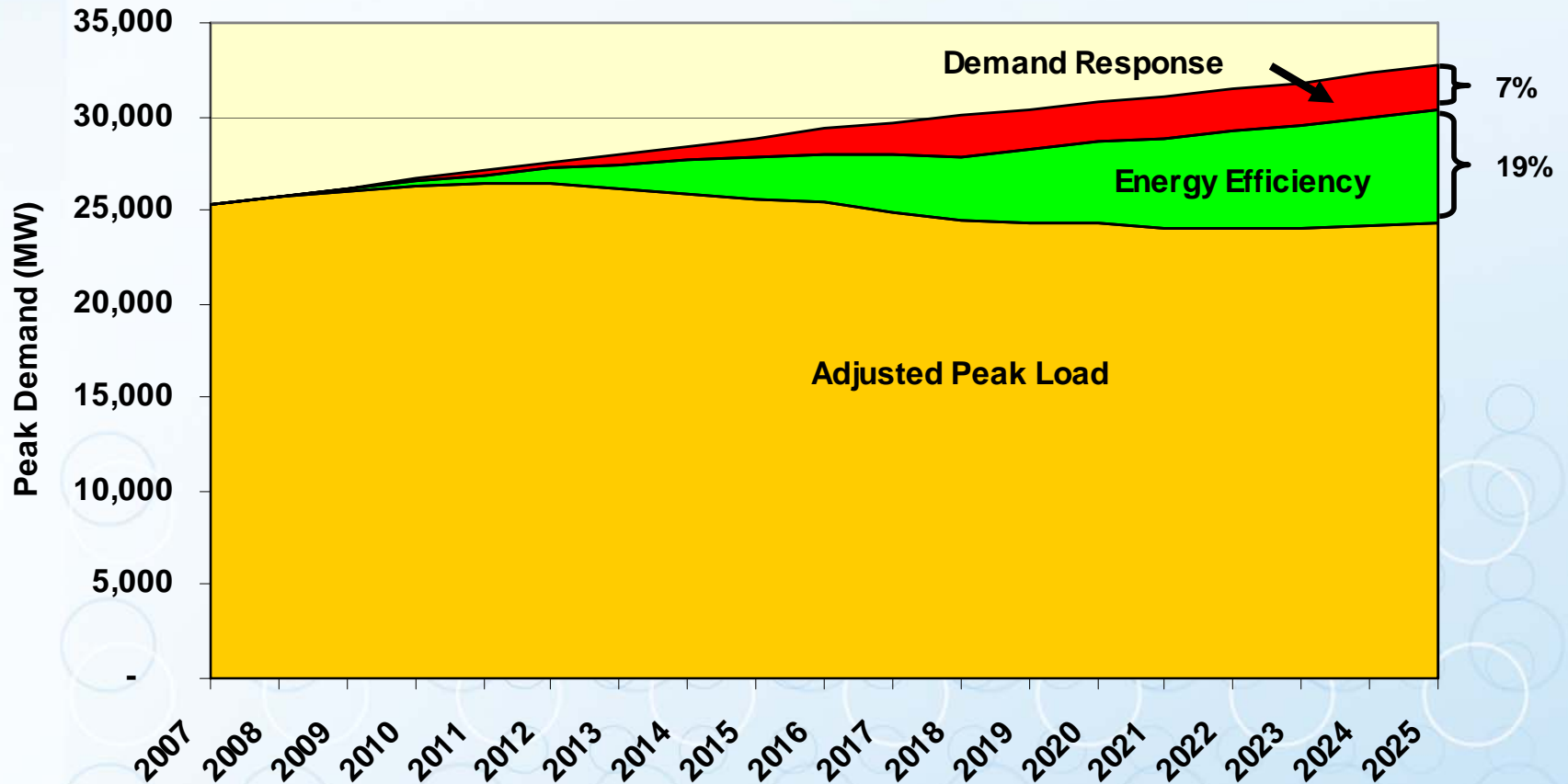


Impact of Efficiency Policies on Electricity Needs in Virginia



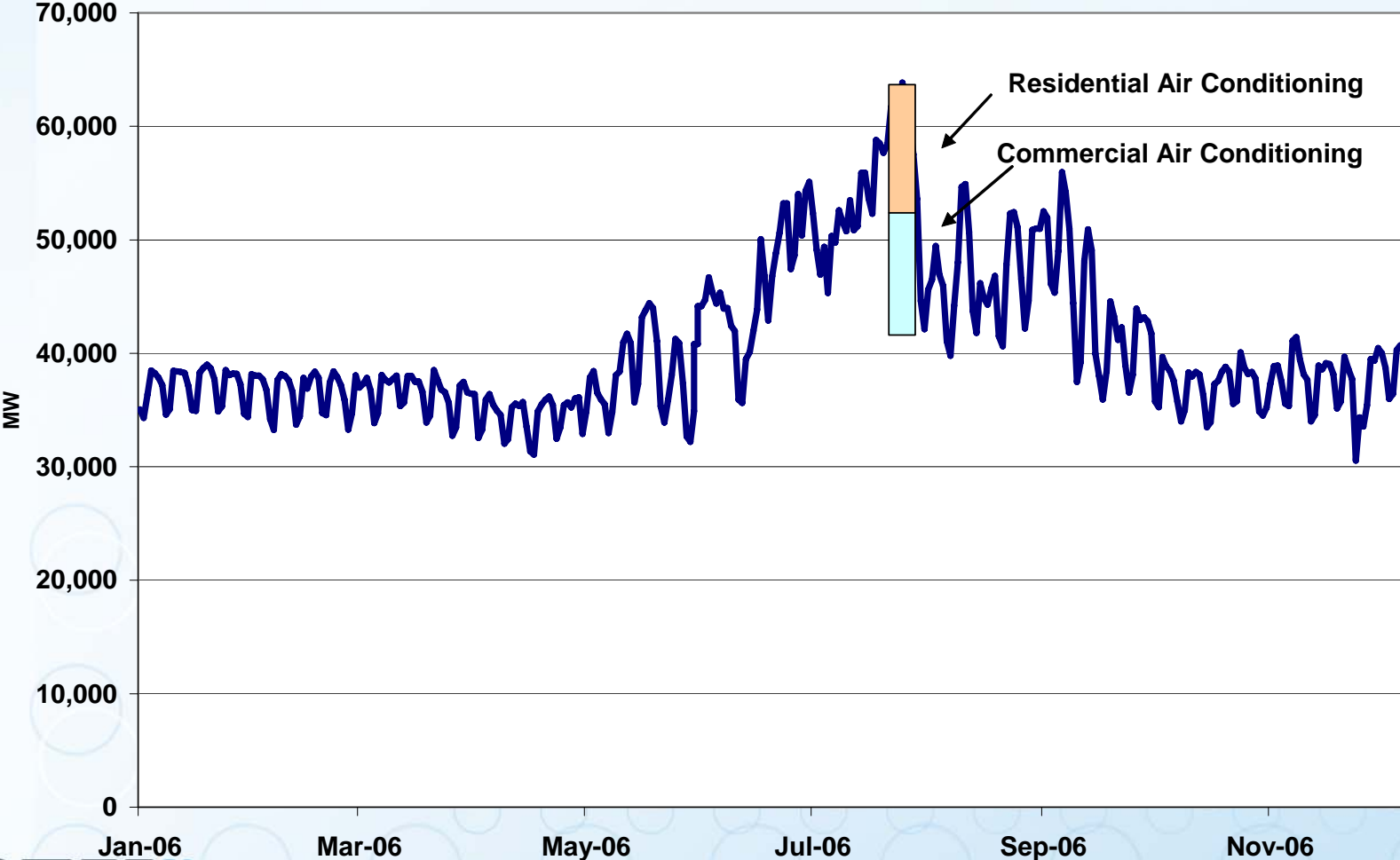
Impact of Efficiency and Demand Response on Summer Peak Demand in Virginia

2025 peak reduction = ~8400 MW (26%)

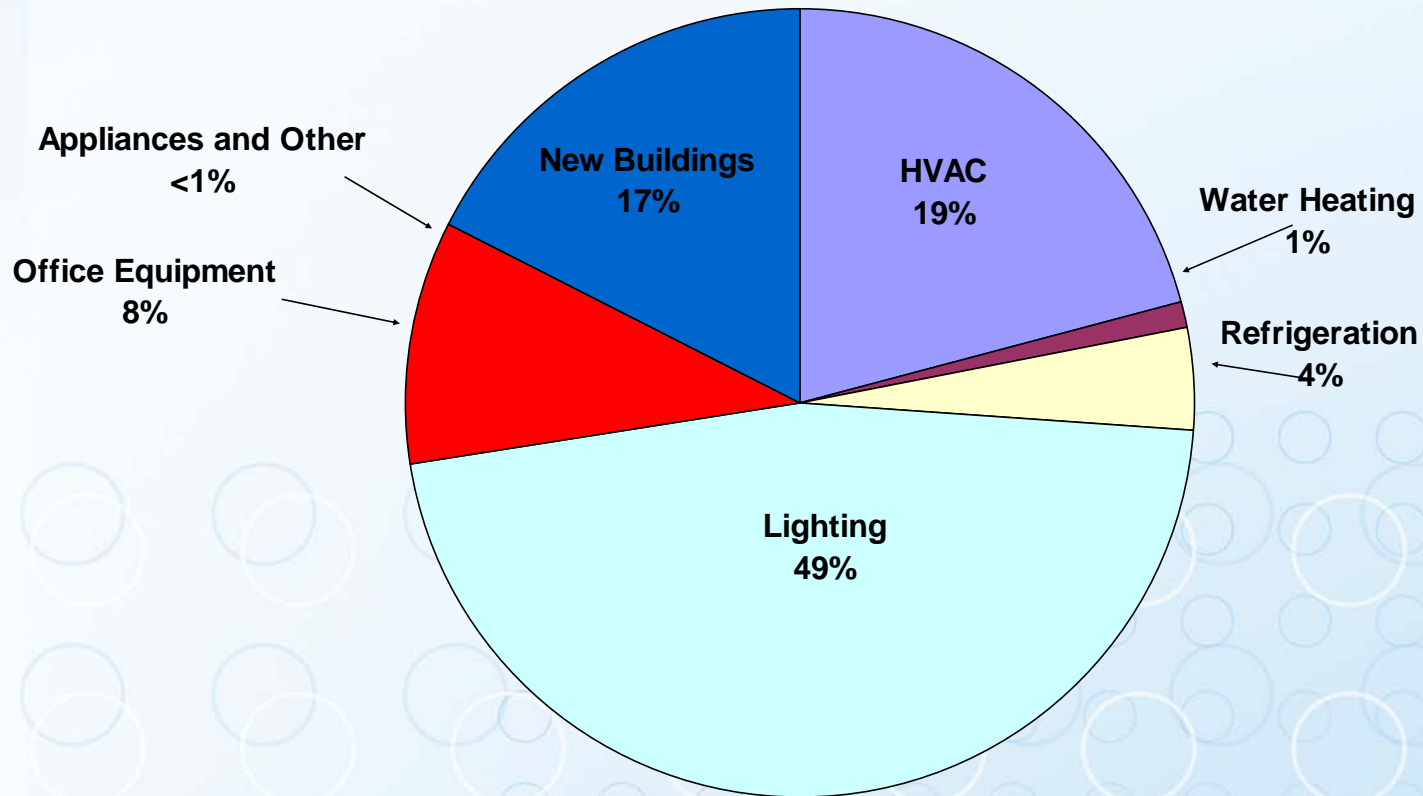


California is VERY MUCH a Summer Peaking Area

California Daily Peak Loads -- 2006



Virginia: Cost-Effective Efficiency Resource Potential in Commercial Buildings



~19,000 GWh in 2025

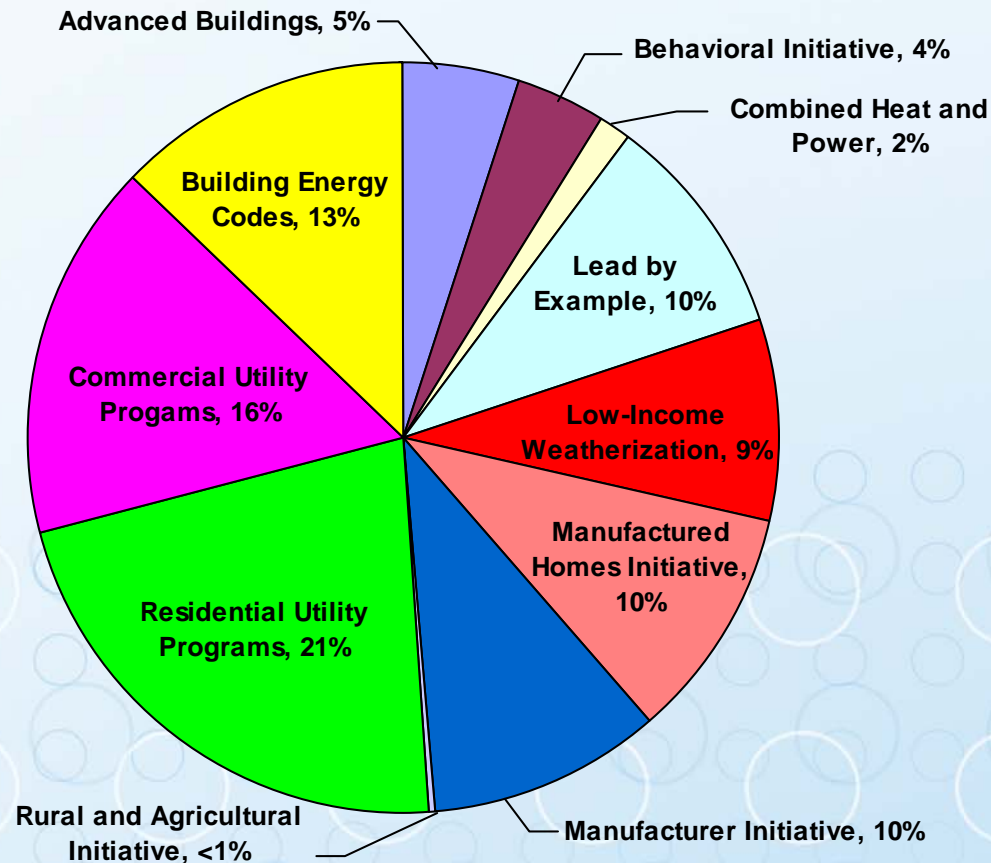
South Carolina: Electricity Savings from Policies Analyzed

2025 Electric Savings = ~20 Billion KWh
or 20% of Projected Sales

- Policies Contributing to EERS:

- Advanced Buildings
- **Behavioral Initiative**
- Combined Heat and Power
- Lead by Example
- Low-Income Weatherization
- Manufactured Homes
- Manufacturing Initiative
- Rural and Agricultural Initiative
- Utility Programs

- Building Energy Codes



Net Impacts of Energy Efficiency Policies on South Carolina's Economy

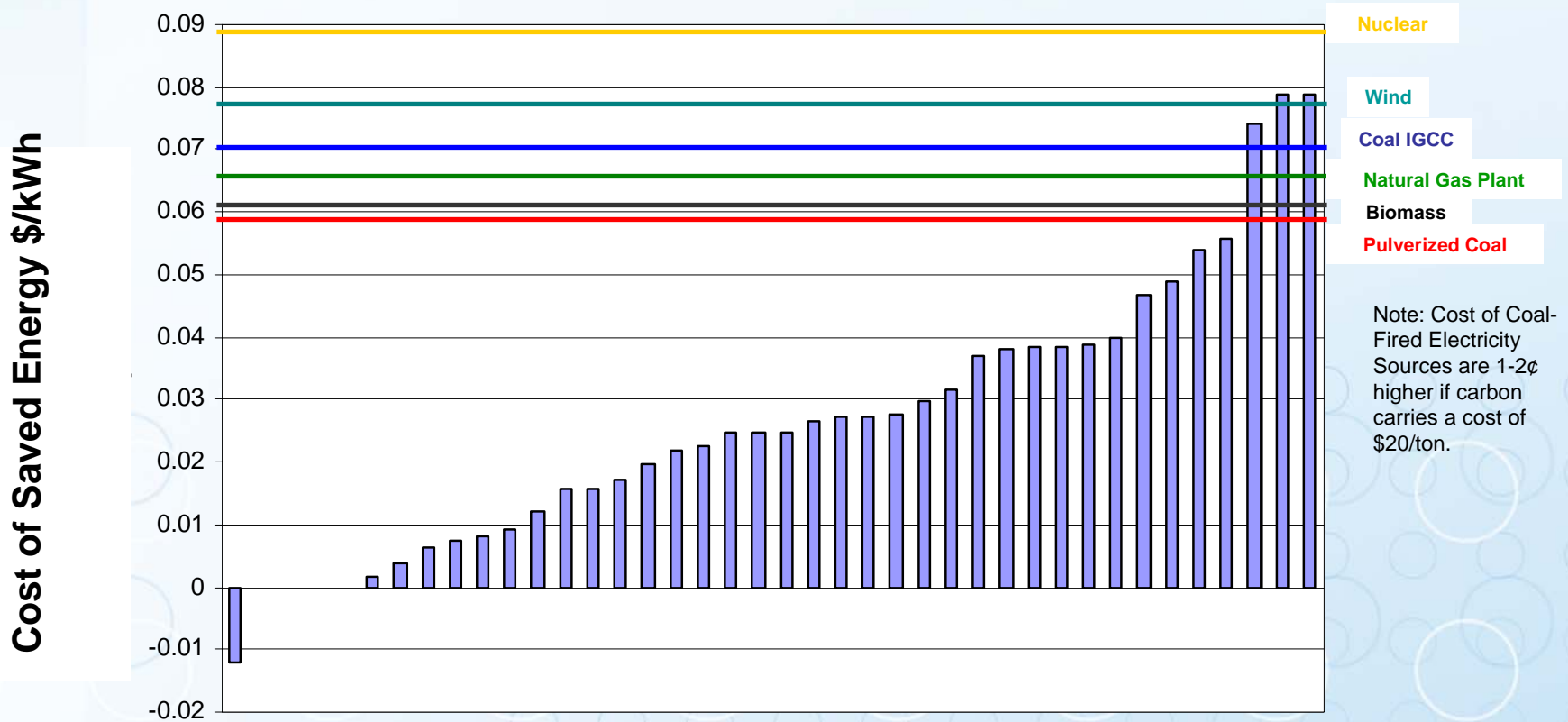
Net Macroeconomic Impacts	2015	2025
Jobs	18,900	21,900*
Wages (Million \$2007)	550	410

* Equivalent to ~ 2% of SC employment in 2009

Carbon Emissions Reductions

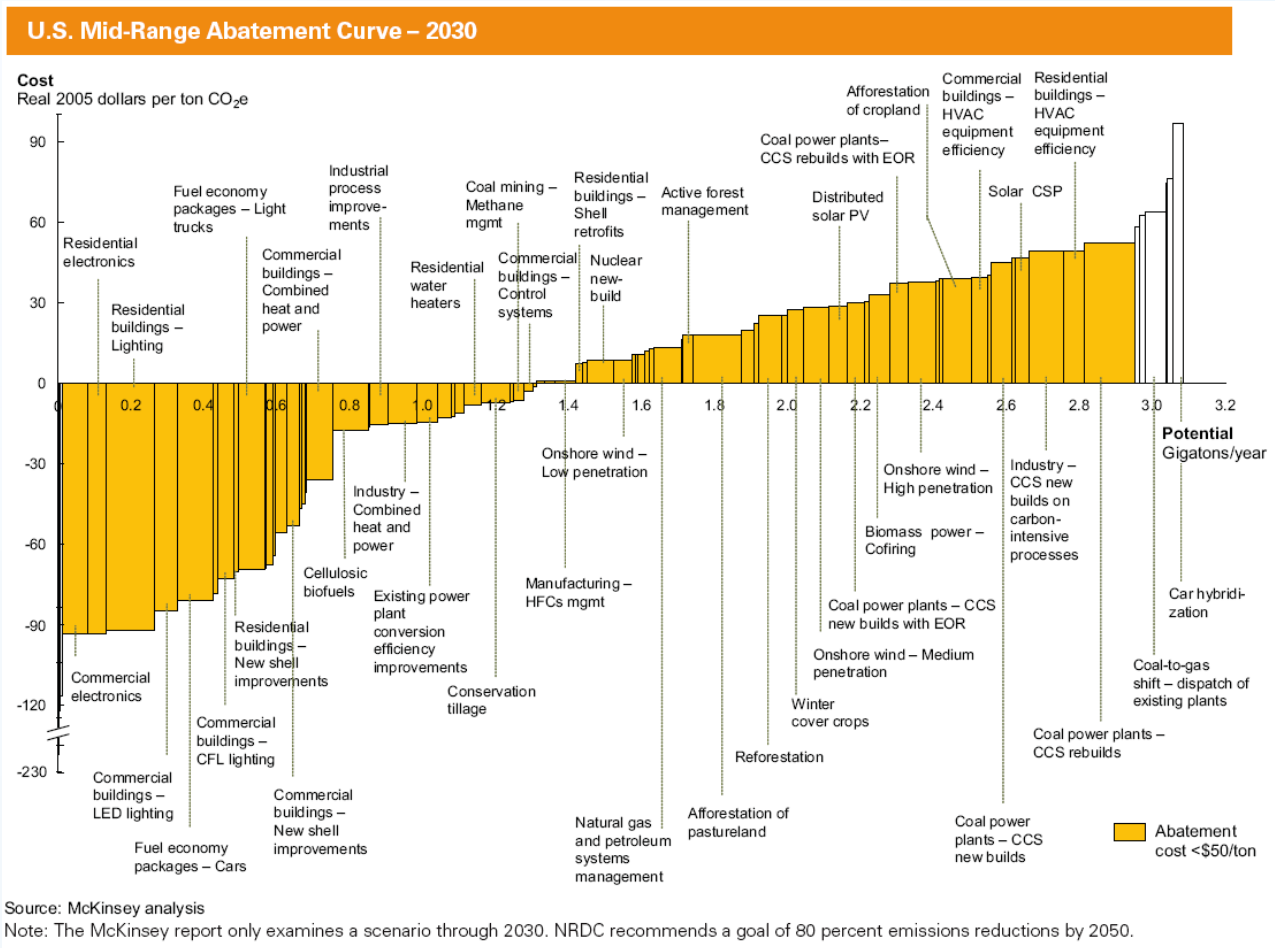
- Annual reduction of 12.5 million tons CO₂ in 2025
- Cumulative reduction of 74 million tons CO₂ through 2025

Efficiency: The Cheapest Resource



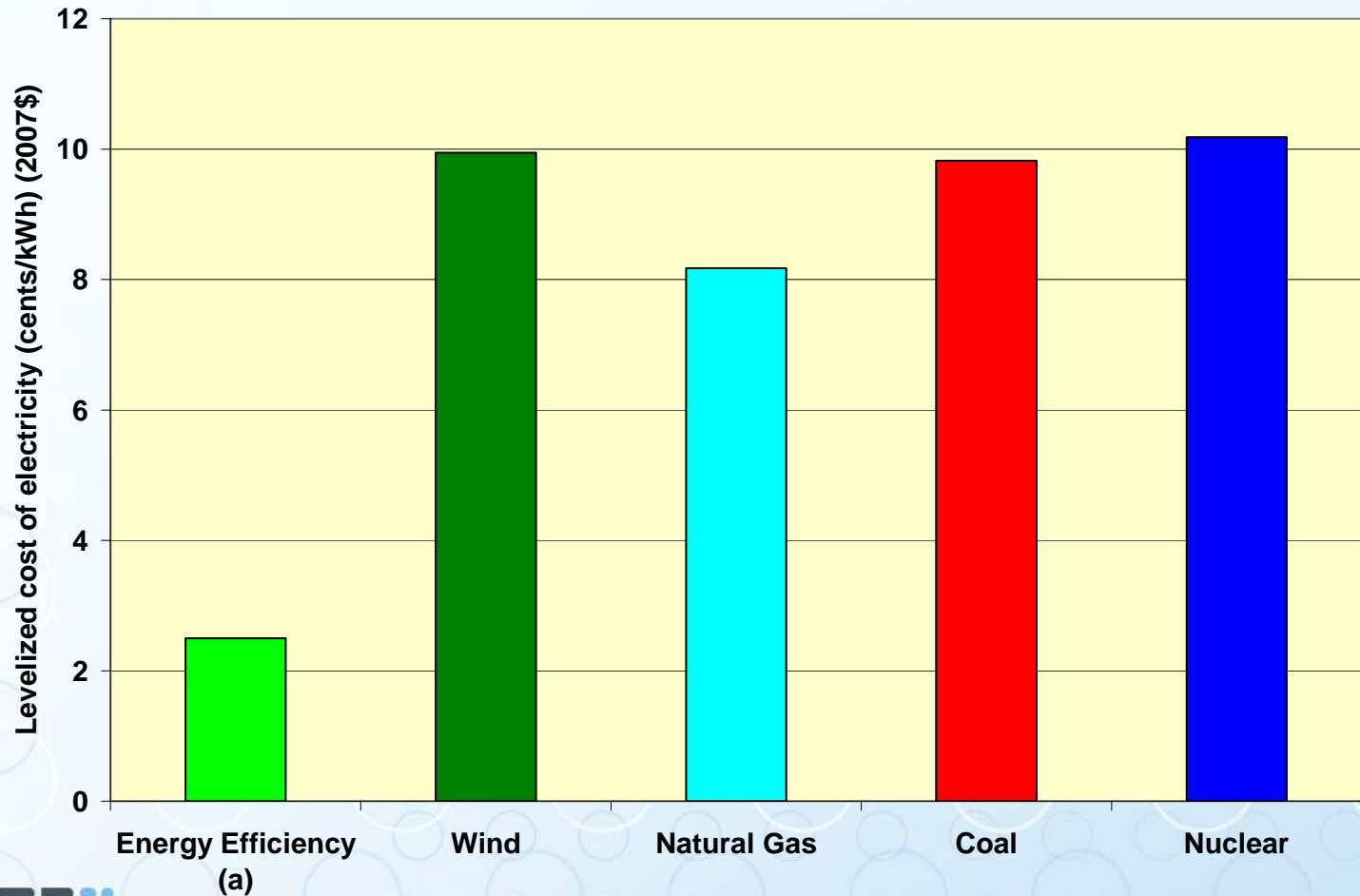
Cost of saved energy for 72 emerging energy-efficient technologies, in order of increasing CSE

McKinsey CO₂ Cost Curve

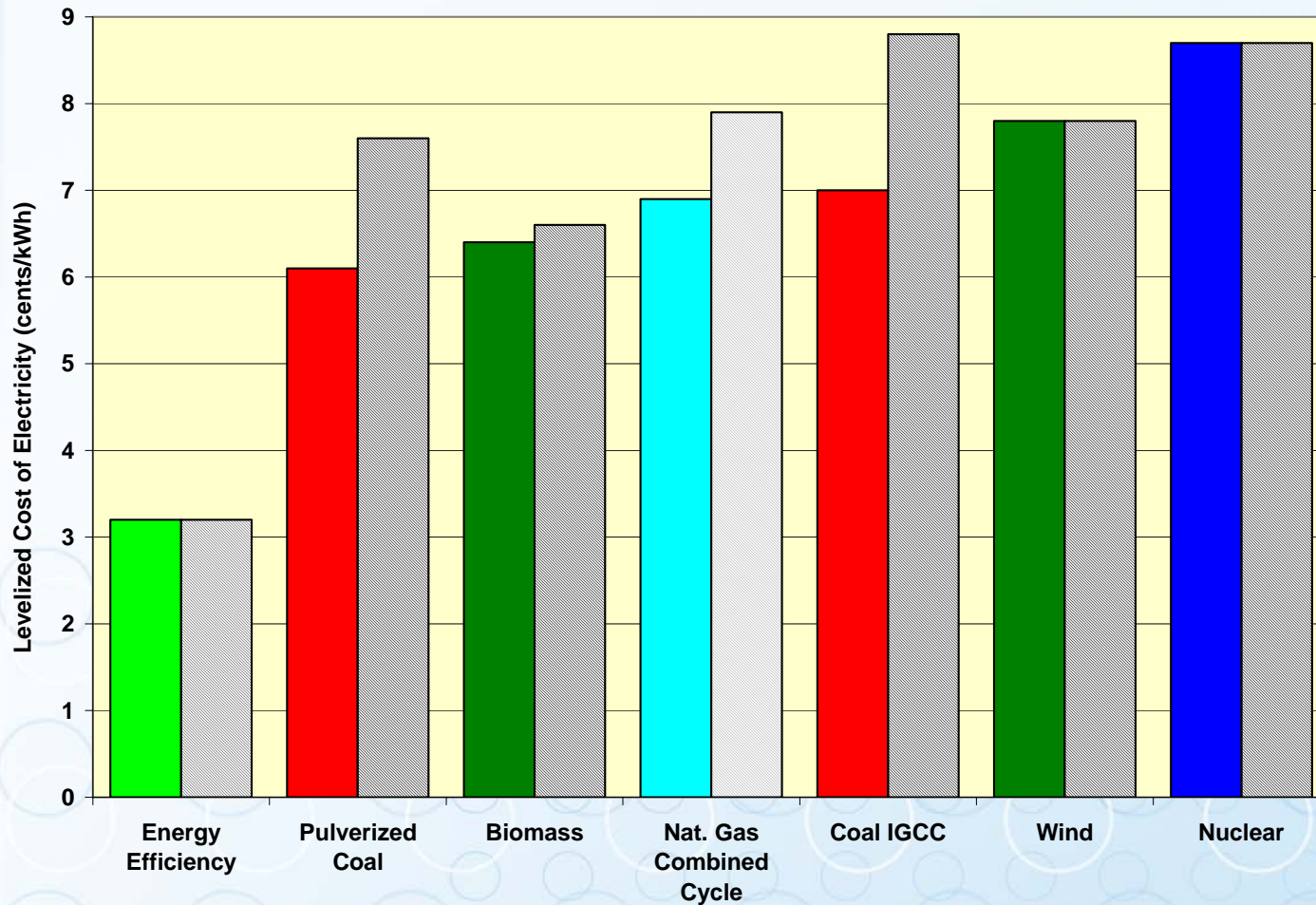


Why Energy Efficiency? The 1st Fuel

Average Cost of New Electric Resources



Cost of New Electricity Resources



Contact and Report Information

Max Neubauer

Research Associate

202-507-4005

mneubauer@aceee.org

Harvey Sachs

Senior Fellow

hsachs@aceee.org

202-507-4014

ACEEE

529 14th Street, NW, Suite 600

Washington, D.C. 20045

For more information visit: www.aceee.org