



Energizing Virginia: Efficiency First

The Role of Energy Efficiency and Demand Response in Meeting the Commonwealth's Electricity Needs

**Presented to the Virginia Commission
on Energy and Environment**

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by **Dr. R. Neal Elliott, Ph.D., P.E.**

Associate Director for Research

American Council for an Energy-Efficient Economy

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

Nonprofit 501(c)(3) dedicated to advancing energy efficiency through research and dissemination.

35 staff in Washington, D.C., Illinois, Delaware, Michigan, and Wisconsin

Focus on End-Use Efficiency in Industry, Buildings, Utilities, Transportation, & National Policy

Offer Conferences and Publications

Funding:

- Foundation and Federal grants (50%)
- Specific Contract work (20%)
- Conferences and Publications (25%)

Project Overview

ACEEE State Project funded by Energy Foundation, U.S. EPA, & U.S. DOE to:

- Prepare annual State Policy Scorecard
- Prepare 4 state energy efficiency assessments per year
- Assist states with ongoing energy policy implementation
- VA project co-funded by WestWind Foundation and Agua Fund

Overall Project Goals:

- Build foundation for public education on energy efficiency
- Provide key facts with respect to EE opportunities
- Inform policymakers on best policy practices

Virginia Project Approach

State-specific data collection

Stakeholder outreach:

- State Government (GEPAC, SCC, etc.)
- Utilities and Co-ops
- Industrial consumers
- Public interest groups
- Low-income advocates

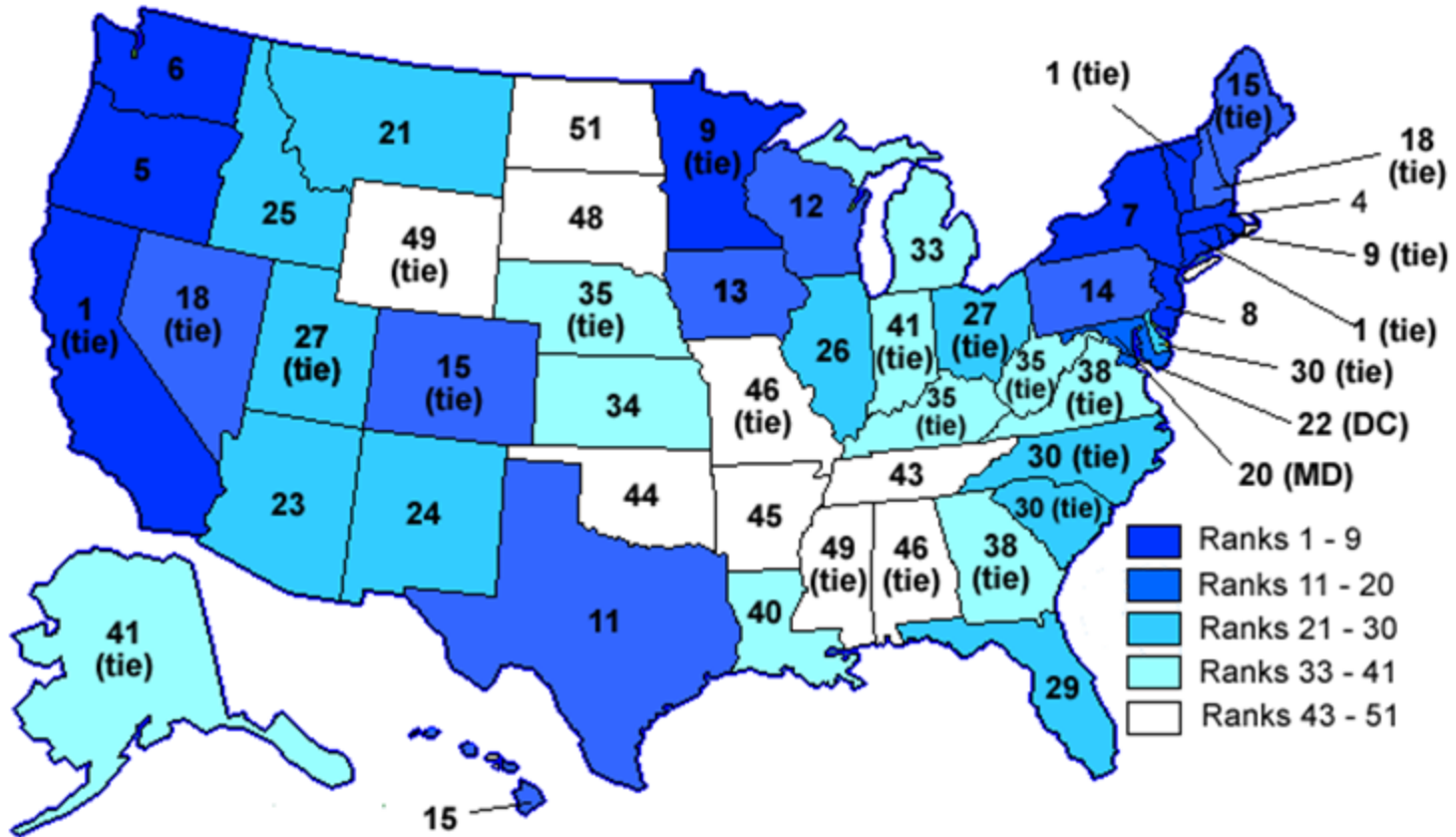
Analysis and report preparation

Report release

Policy Implementation Assistance

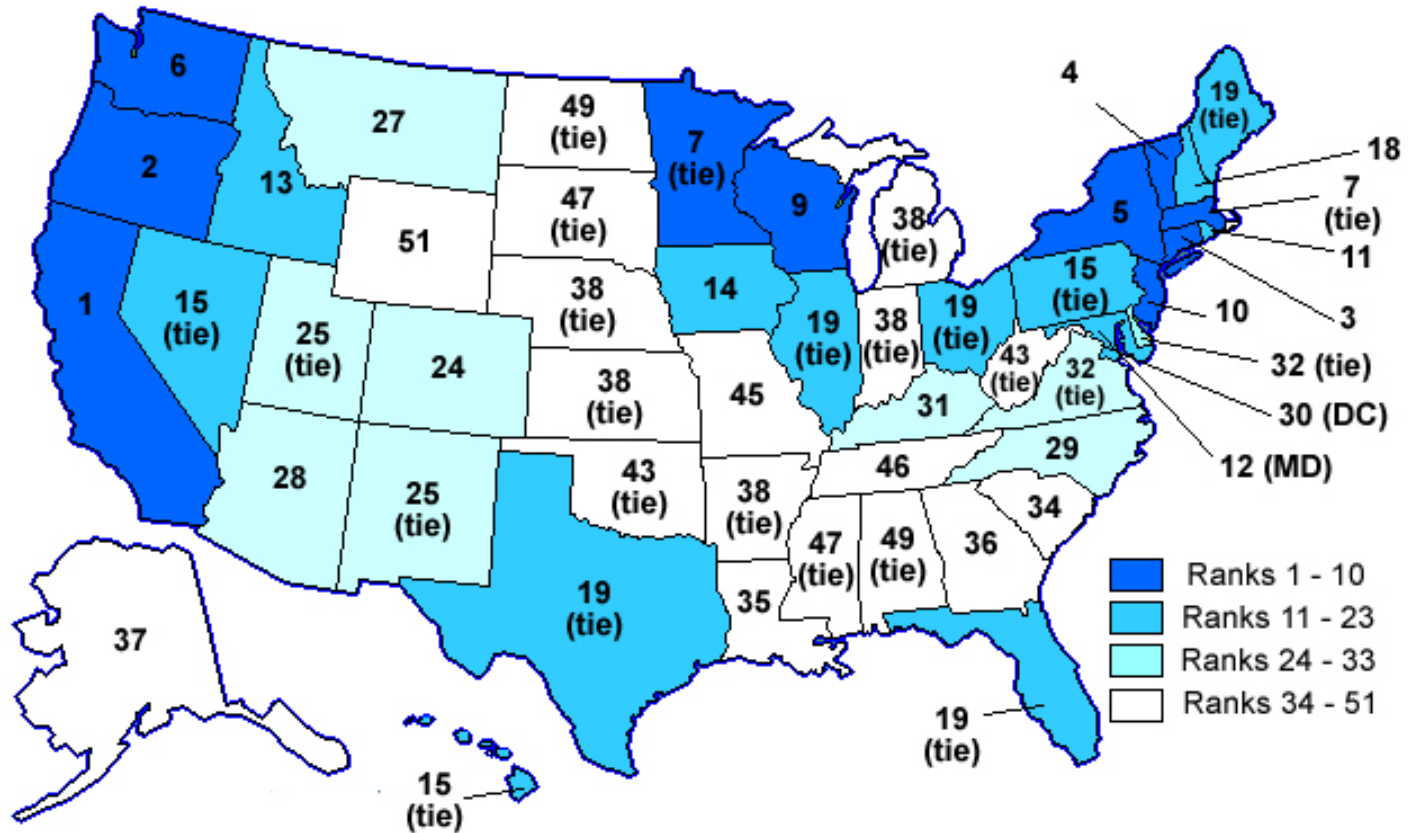
Why Virginia?

2006 ACEEE State EE Scorecard



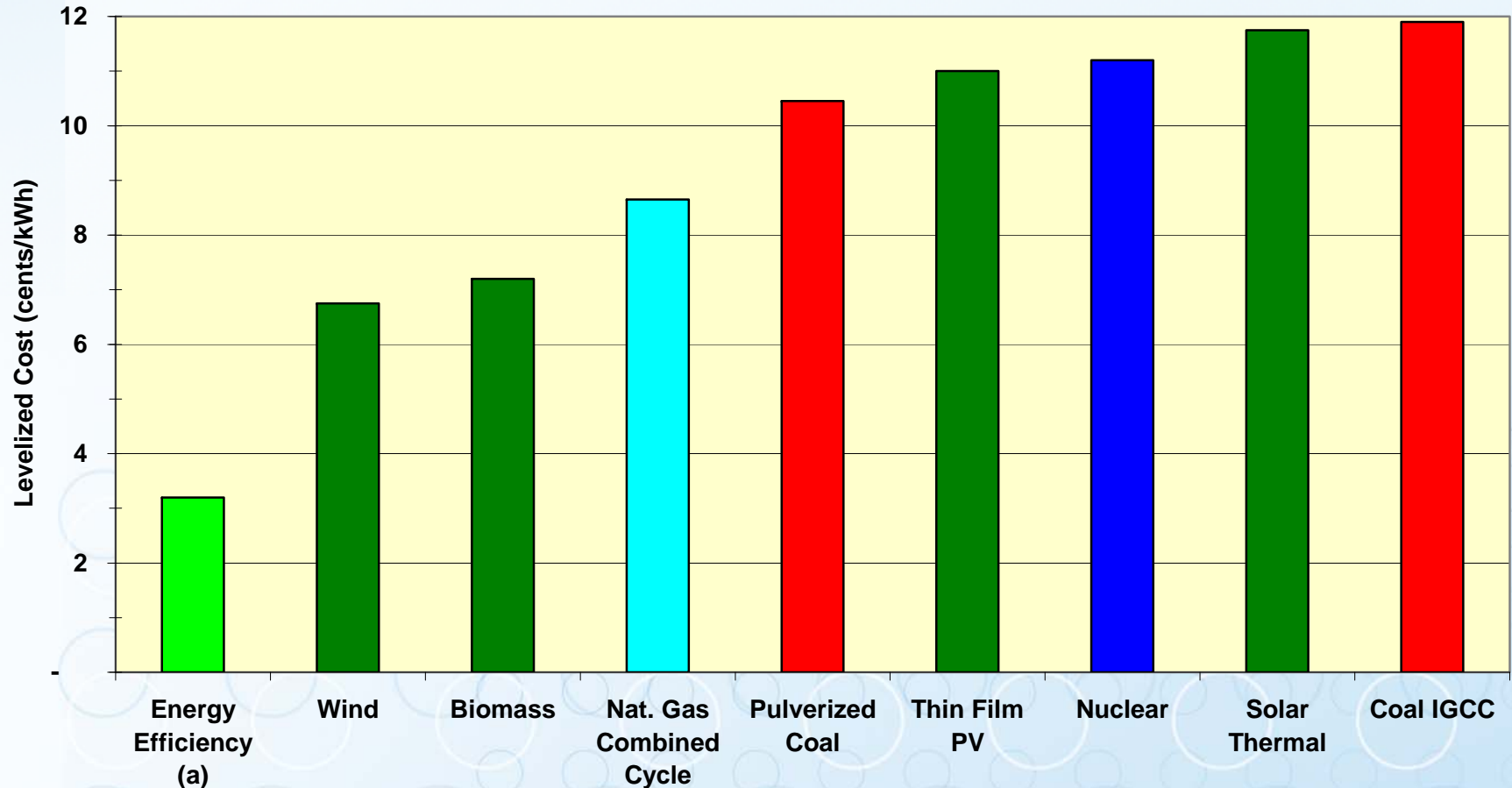
Virginia Today

2008 ACEEE State Energy Efficiency Scorecard



Why Energy Efficiency? The 1st Fuel

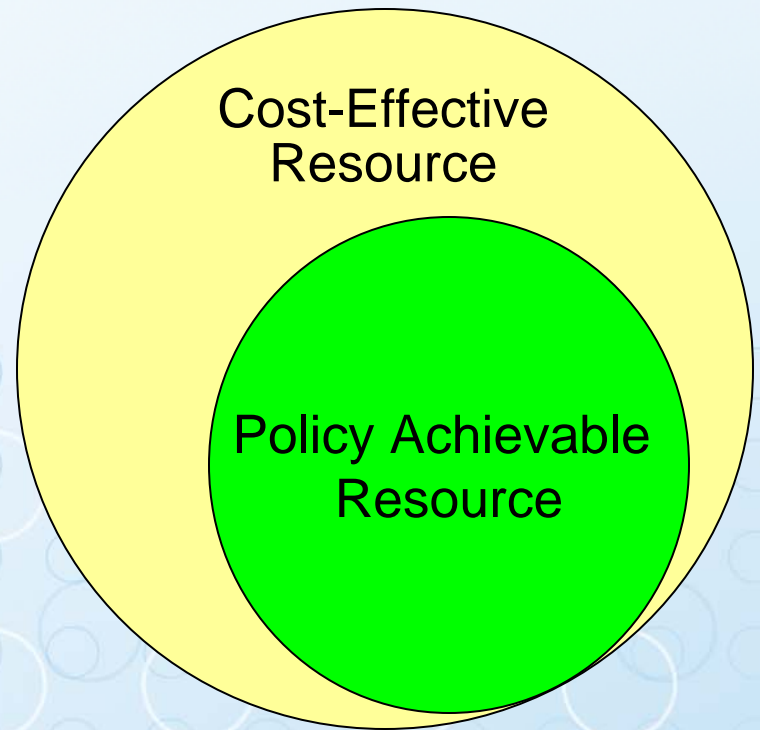
Average Cost of New Electric Resources



Levels of Energy Efficiency Potential We Analyzed

Energy Efficiency Resource Potential in 2025

- **Cost Effective Resource = ~44,000 GWh (31%)**
- **Policy Analysis = ~28,00 GWh (19%)**



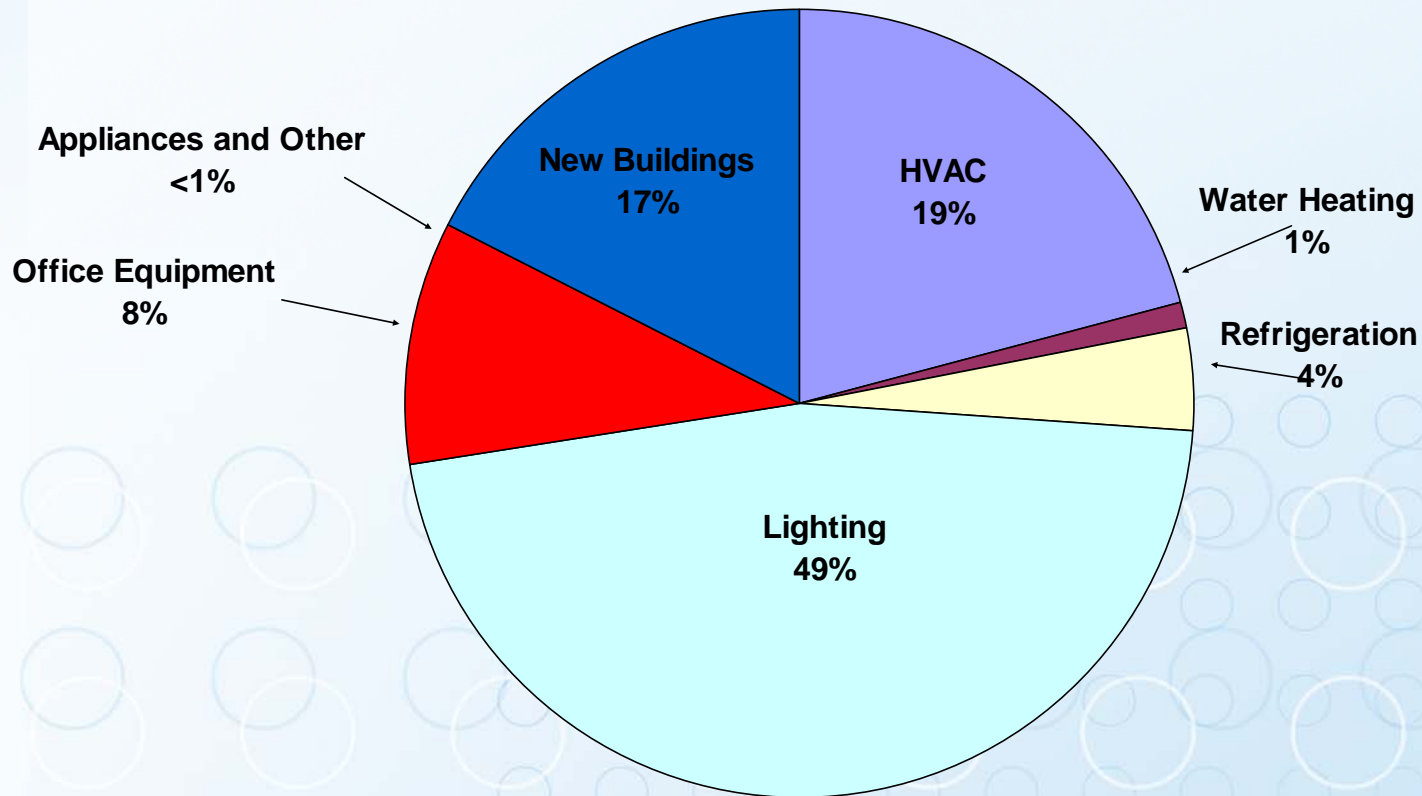
Energy Efficiency Resource Potential

44,000 GWh or 31% of Projected Electricity Use in 2025



Commercial Sector Efficiency Potential

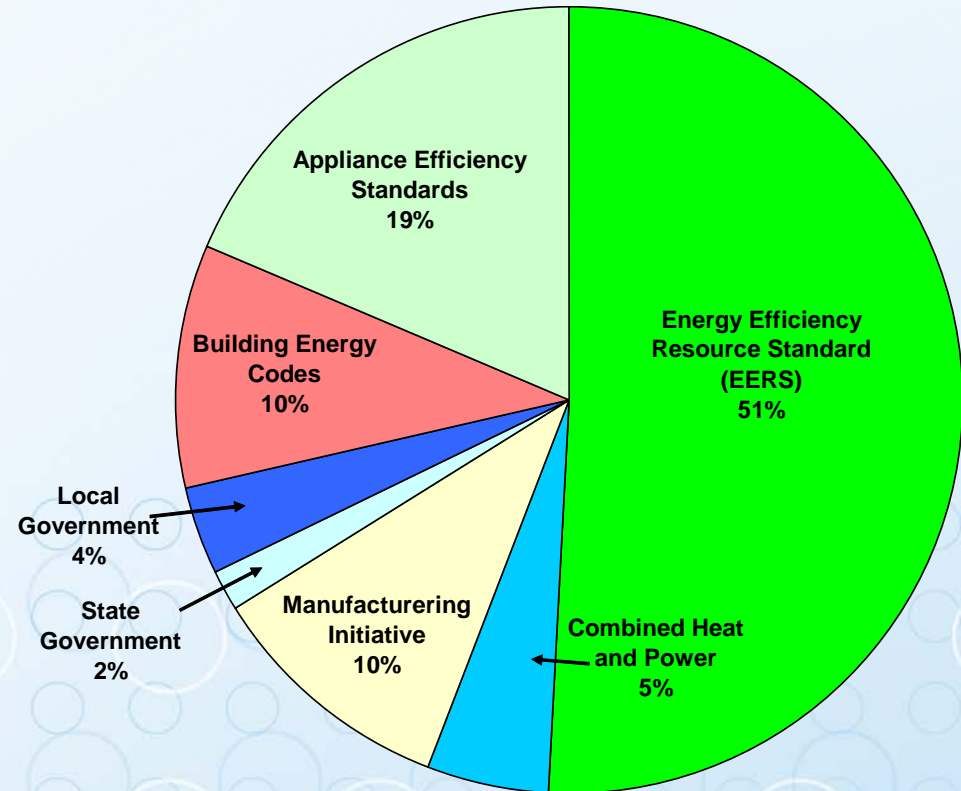
~19,000 GWh in 2025



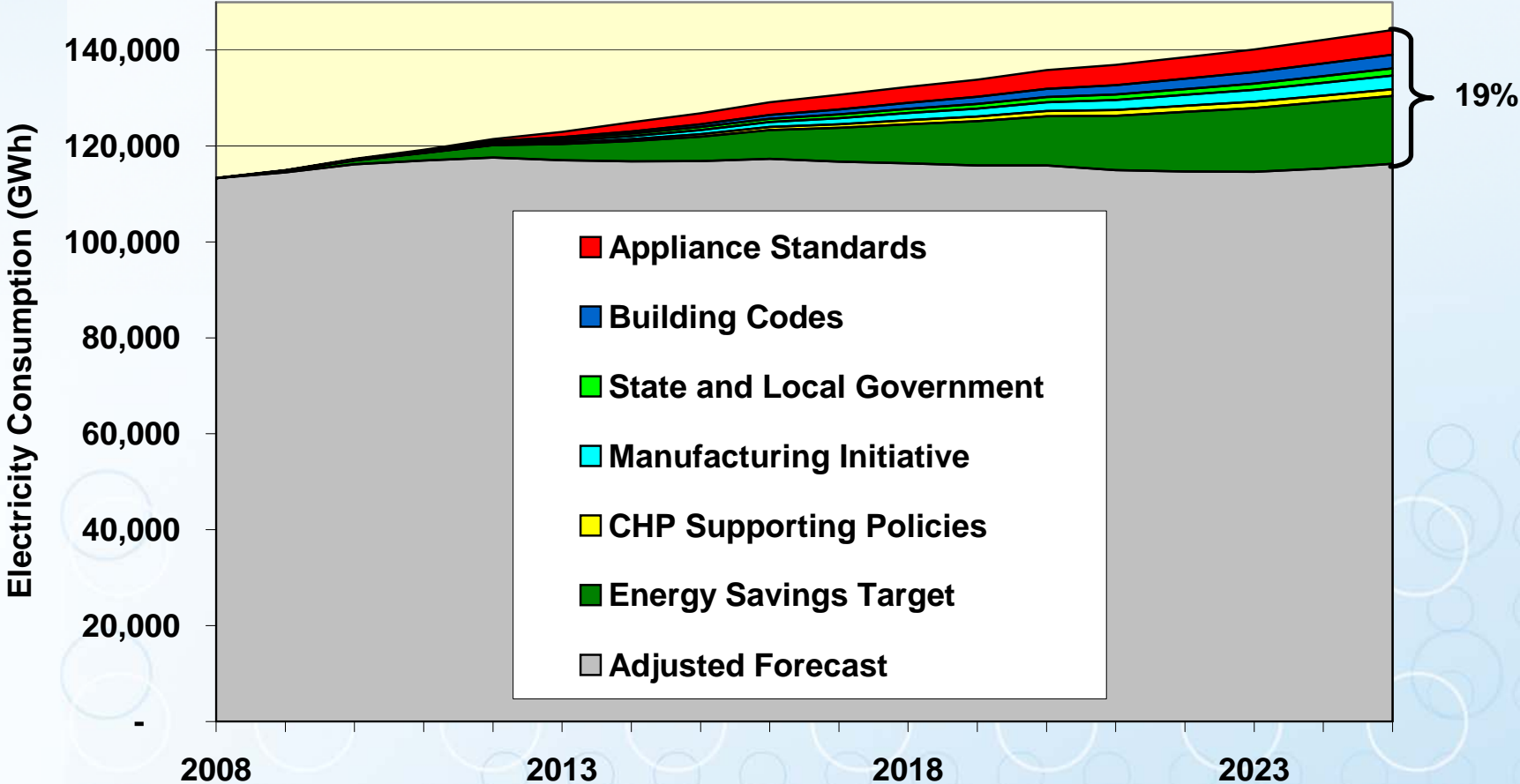
Suite of 11 Policies Analyzed

Policies include:

- EERS
- Mfg Initiative
- CHP
- Codes & Standards
- Gov. Facilities
- Public Education
- Demand Response

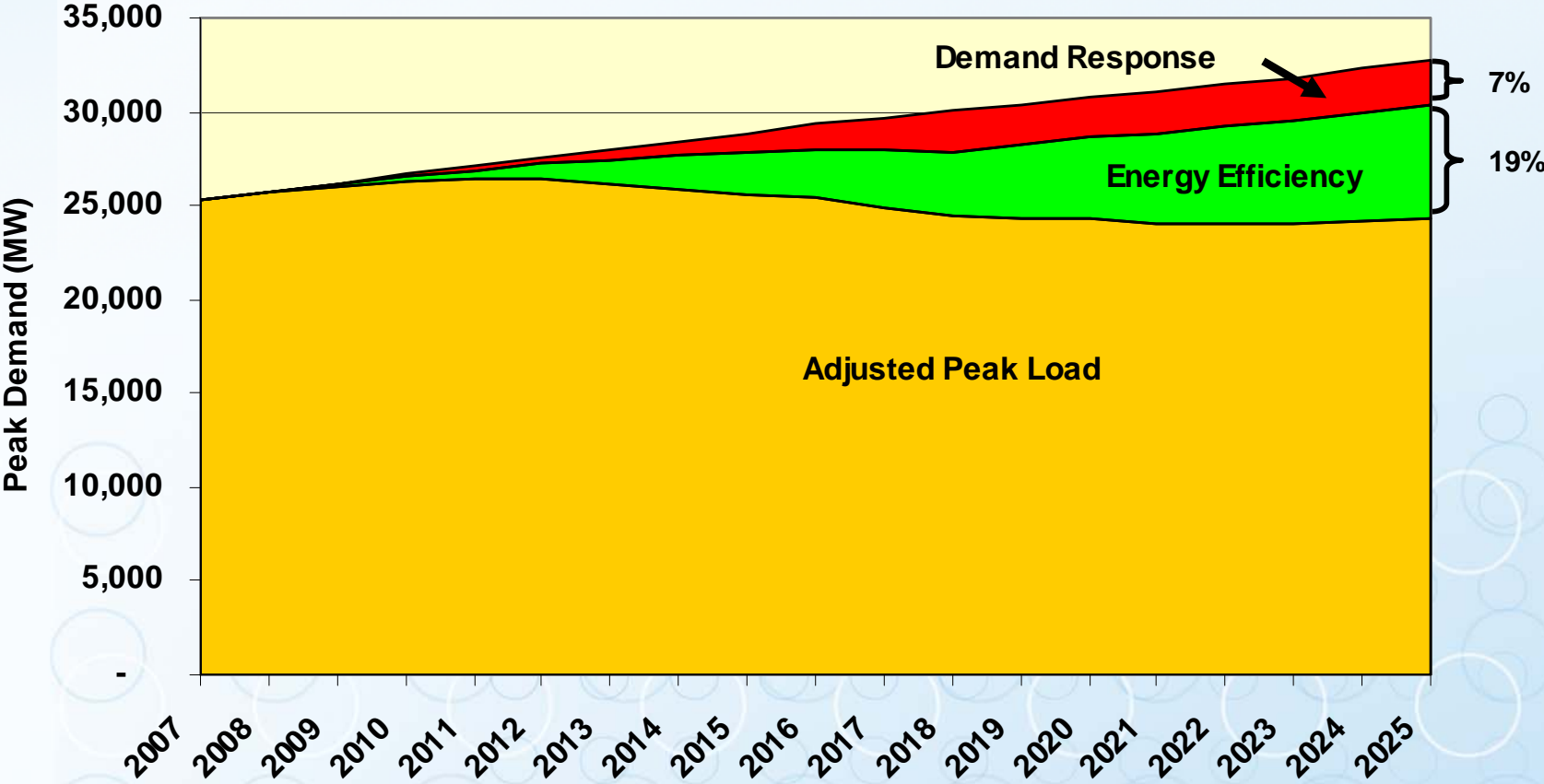


Impact of Efficiency Policies on Electricity Needs in Virginia



Impact of Efficiency and Demand Response on Peak Demand

2025 peak reduction = ~8400 MW (26%)



Impacts of EE Policies

- \$26 billion cumulative gross consumer savings on electric bills by 2025 (on \$220 billion in electric bills in B.A.U.)
- \$11 billion cumulative energy efficiency investments through 2025
- **\$15 billion** cumulative *net* consumer savings on electric bills by 2025

Impacts of EE Policies on Residential Consumers

With EE all residential consumers will see lower bills:

- \$5 net electric bill savings per monthly in 2015—4% reduction in average bill of \$124
- \$20 net electric bill savings per monthly in 2025—16% reduction in average bill

Consumers who invest in efficiency will realize a greater share of the savings.

Impact for Industrial Consumers

- Industrial customers will save over 4000 GWh in 2025 or 19% savings
- CHP contributes about 10% of savings, or 400 GWh in 2025
- Annual cost savings of \$265 million dollars
- An investment of \$800 million by industry from 2009 to 2025 could return a cumulative savings of \$2 billion

Net Impacts on EE Policies on VA Economy

Net Macroeconomic Impacts	2015	2025
Jobs (Actual)	675	9,820
Wages (Million \$2006)	63	583
GSP (Million \$2006)	202	882

Global Warming Emissions Reductions

- Annual reduction of 28 million tons CO₂ in 2025
- Cumulative reduction of 240 million tons CO₂ through 2025

Conclusions

- There are sufficient efficiency resources to meet the Commonwealth's growth in electric needs over the next 15 years
- Investing in efficiency will:
 - Reduce consumer electric bills
 - Ensure stable & reliable electric system
 - Promote new jobs & economic growth
 - Make important contributions to addressing global warming

Contact and Report Information

Neal Elliott

Associate Director of Research

ACEEE

529 14th Street, NW, Suite 600

Washington, D.C. 20045

202-507-4009

rne Elliott@aceee.org

For more information visit: www.aceee.org

Download the report here: www.aceee.org/pubs/e085.htm

Energy Efficiency Resource Standard (EERS)

- Sets a long-term, quantitative energy savings goal with binding targets for utilities or other state-selected entities to meet through energy efficiency programs or policies.
- Currently nineteen states have an EERS in place or pending.

Unique Needs of Manufacturers

- Access to in-plant assessment surveys
- Access to industry-specific expertise
- Workforce development
 - Engineering training
 - Technical certificate programs
 - In-plant skills training
- Access to new technologies through RD&D

Virginia Manufacturing Initiative

- Establish technical support network building on:
 - Best practice seminars and online resources
 - US Department of Energy – Save Energy Now
 - Enhanced Manufacturing Extension Partnership Programs – Centers of Excellence - technical assistance and training
 - Workforce training at community colleges & tech schools for audits and implementation – making it happen
- Coordinate with trade associations and major companies, i.e., mentoring
- Set up *Development Zones* and/or *Energy Improvement Districts*
- Support federal umbrella program at U.S. Department of Energy including RD&D

Combined Heat and Power Policies

- Improve statewide interconnection policy and procedures
- Incentivize new capacity
- Adopt output-based emissions standards
- Include new CHP installations in EERS
- Make utilities whole in terms of their business model