



The Cost of Energy Independence, Climate Change, and Clean Energy Initiatives on Utility Ratepayers

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Session on Energy Independence



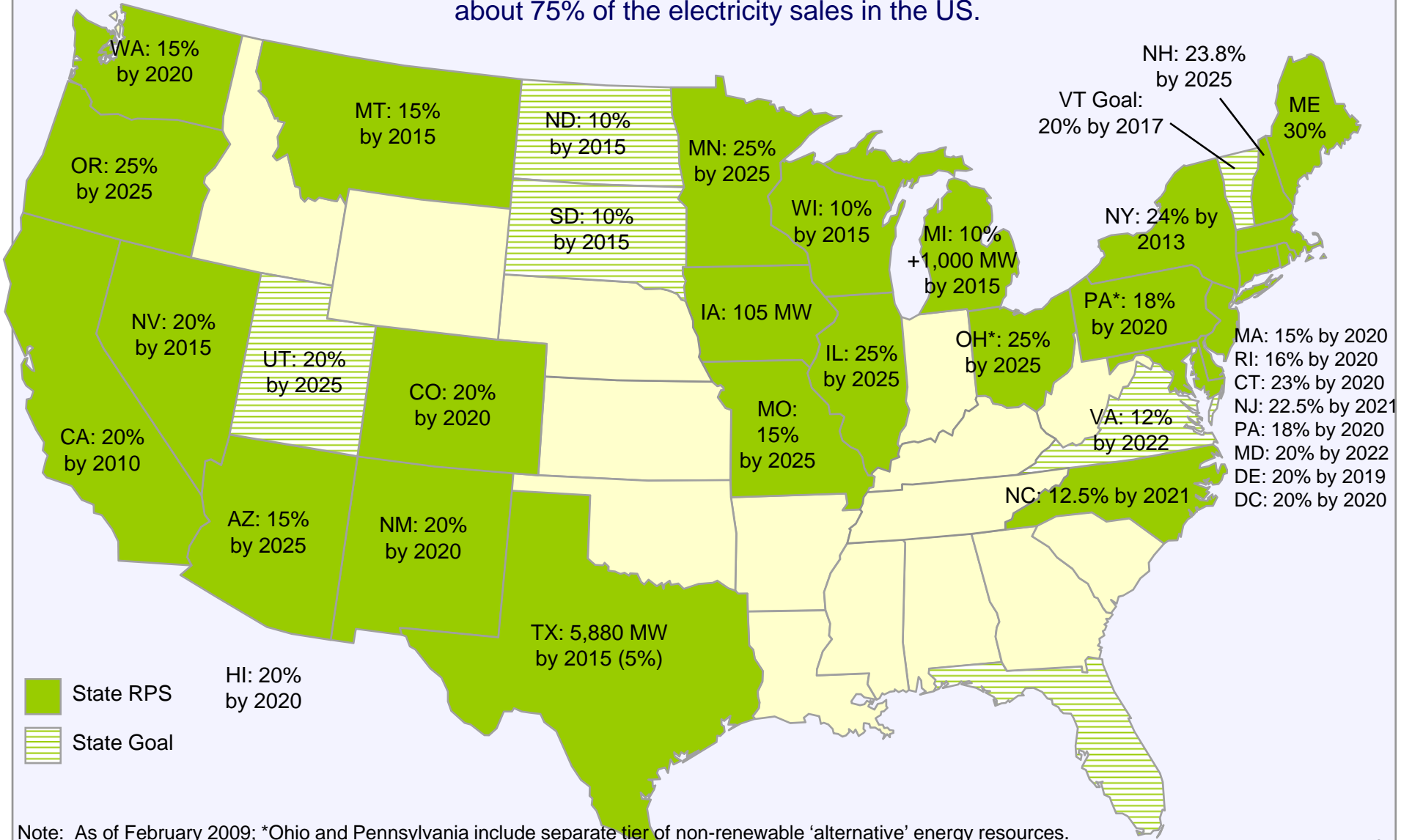
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- **Renewable Energy**
- **Energy Efficiency**
- **Climate Change**
- **Fuel Diversity**
- **Regulatory Policy & Risk Shifting**

Renewable Energy

States with Renewable Portfolio Standards

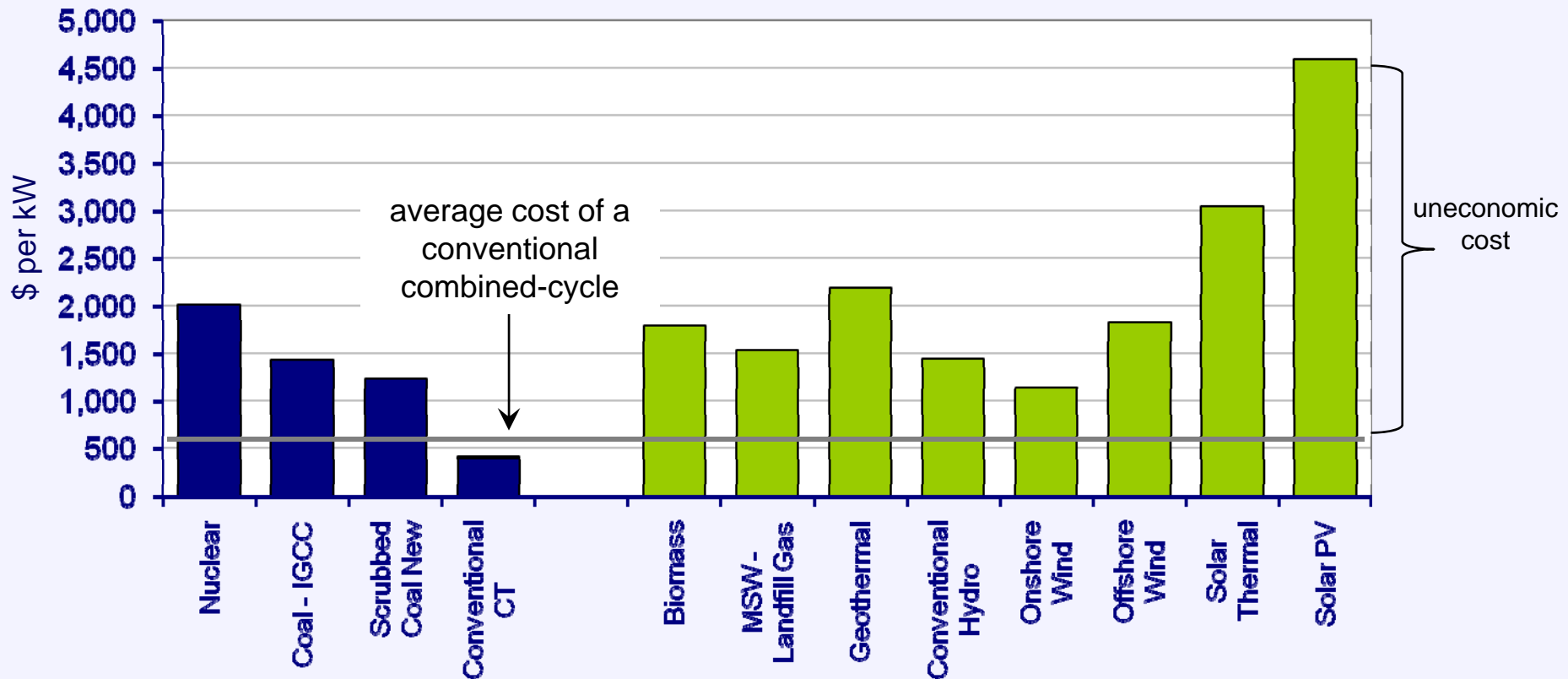
Currently there are 33 states that have RPS policies in place. Together these states account for about 75% of the electricity sales in the US.



Note: As of February 2009; *Ohio and Pennsylvania include separate tier of non-renewable 'alternative' energy resources.
 Source: Database of State Incentives for Renewables and Efficiency.

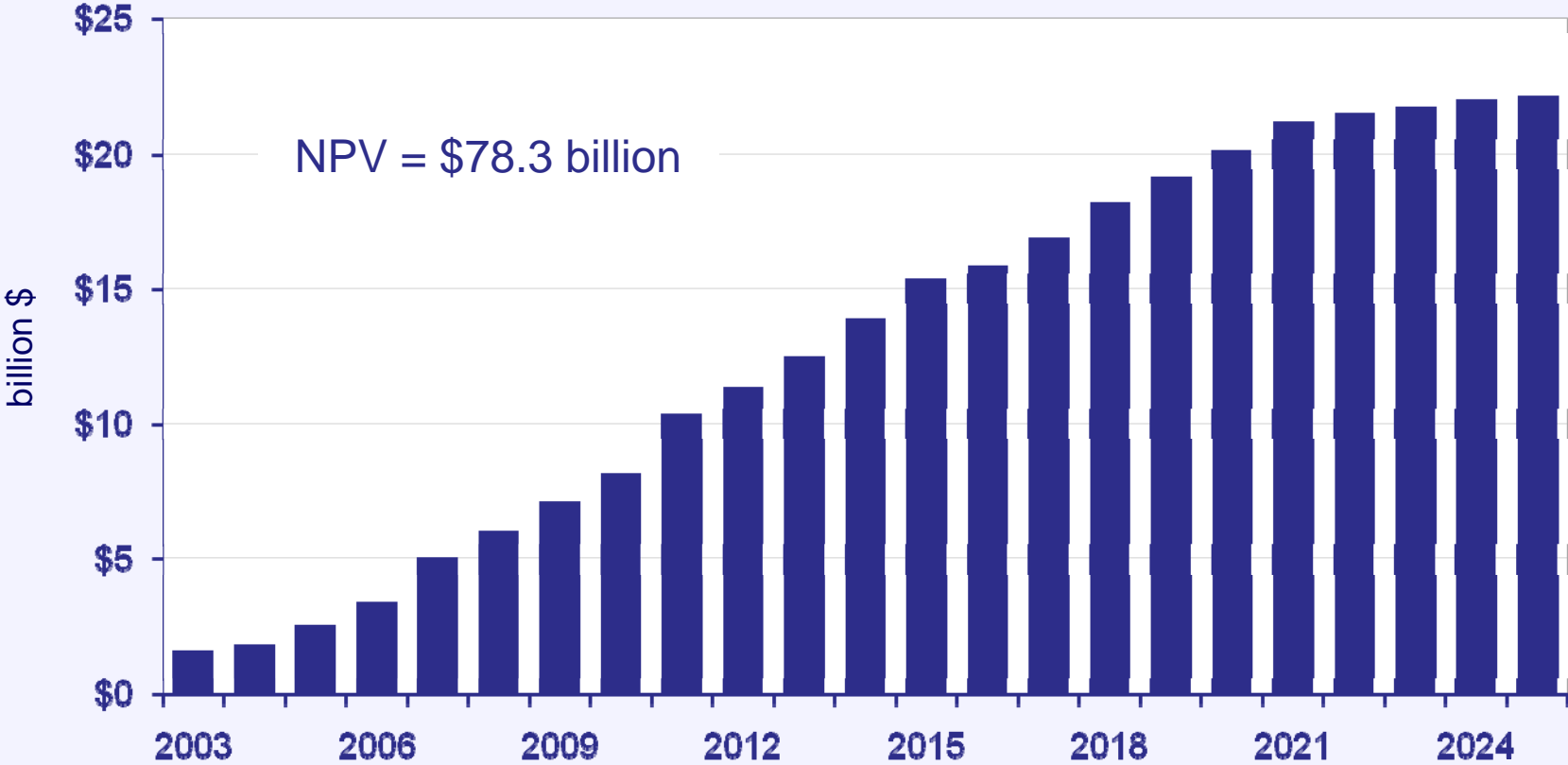
Total Overnight Cost for New Plants

Resources are typically uneconomic without additional support



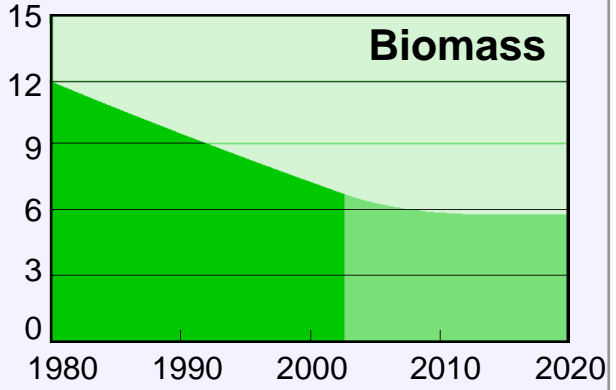
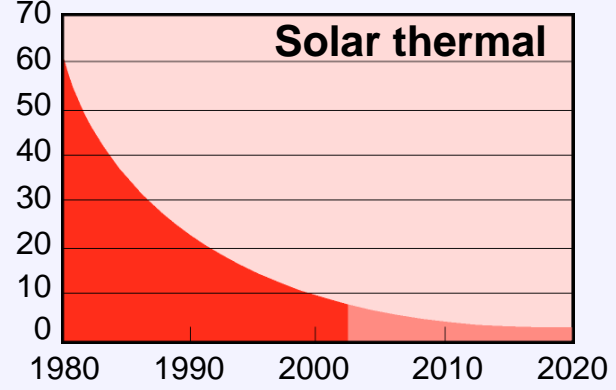
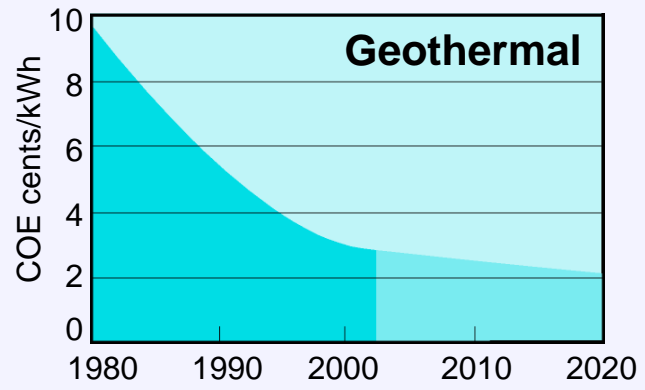
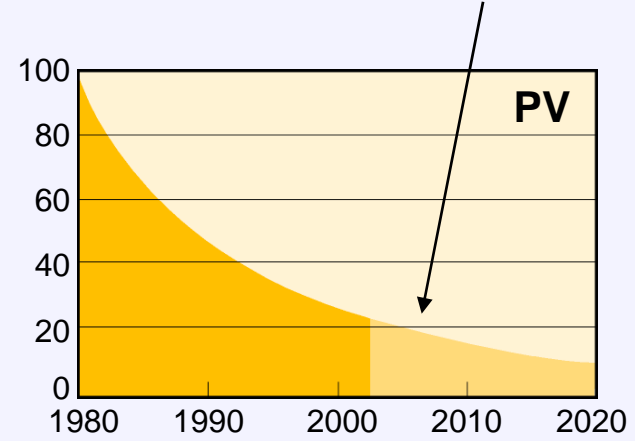
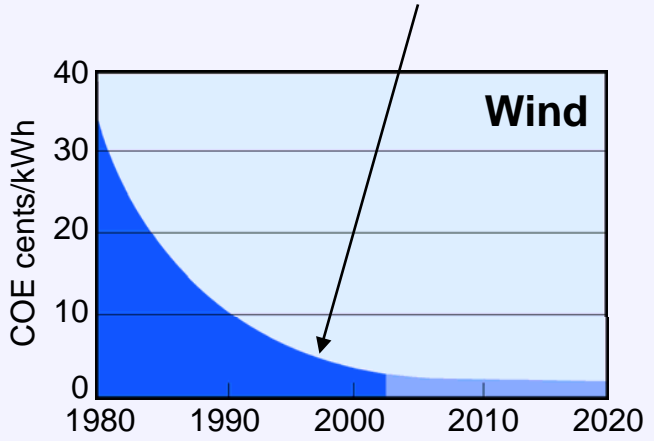
These differentials will have to be recovered from various funding sources

Estimated Cost of RPS Standards



Renewable Energy Cost Trends

Will government support and policies reduce incentives to maintain cost efficiency trends



Levelized cents/kWh in constant \$2000¹

Energy Efficiency

Programs commonly referred to as “demand side management” – attempt to encourage more efficient use of electricity.

Energy efficiency programs: programs that encourage more efficient energy (kWh) consumption.

Load management programs: programs designed to encourage more efficient peak demand (kW) usage.

Energy Efficiency Resource Standards

ID: Energy Plan puts conservation – DR and EE – as priority resource

MT: state agency reduction initiative: save 20% by 2010

WA: must pursue all cost effective conservation

OR: IOUs required to have EE in IRP & assess cost-effectiveness

CA: IOUs reduce MW 10%, peak demand (MWh) 12% by 2013; munis 10% by 2017

NV: use EE for up to 25% of RPS by 2015

UT: EE incentives in RPS goal

CO: save 40 MW and 100 GWh annually to 2013

NM: use EE and DR to save 10% of 2005 retail electric sales by 2020

KS: Order advocates voluntary utility programs, not mandate

OK: PSC approved quick-start DSM programs, including EE

TX: 10% of load growth, beyond 2004, based on prior 5 years

MI: annual savings: 1% of prior year's sales by 2012

MN: reduce fossil fuel use 15% by 2015 through EE, RE

IA: utilities must establish EE goals by end of 2008

WI: RPS requires utility EE

IL: reduce energy 2% by 2015 (EE) and 0.1% from prior year (DR)

OH: reduce peak-demand 8% by '18; 22% energy savings by '25

KY: proposed REPS - EE and conservation to offset 18% of projected 2025 demand

ME: 10% new EE by 2017; in RPS goal as 2nd priority

VT: EE & RE to meet 2007-12 growth

MA: meet 25% of capacity and energy with DSR by 2020

NY: 15% electric use reduction by 2015; doubles EE funding

CT: 4% savings by 2010; a Tier III RPS resource

NJ: reduce consumption 20%, and peak demand 5,700 MW by 2020

DE: EE, RE, DG, and DR are priority resources before new gen

PA: reduce energy consumption 3% and peak demand 4.5% by 2013

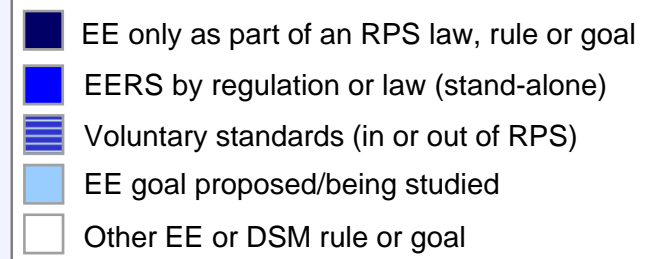
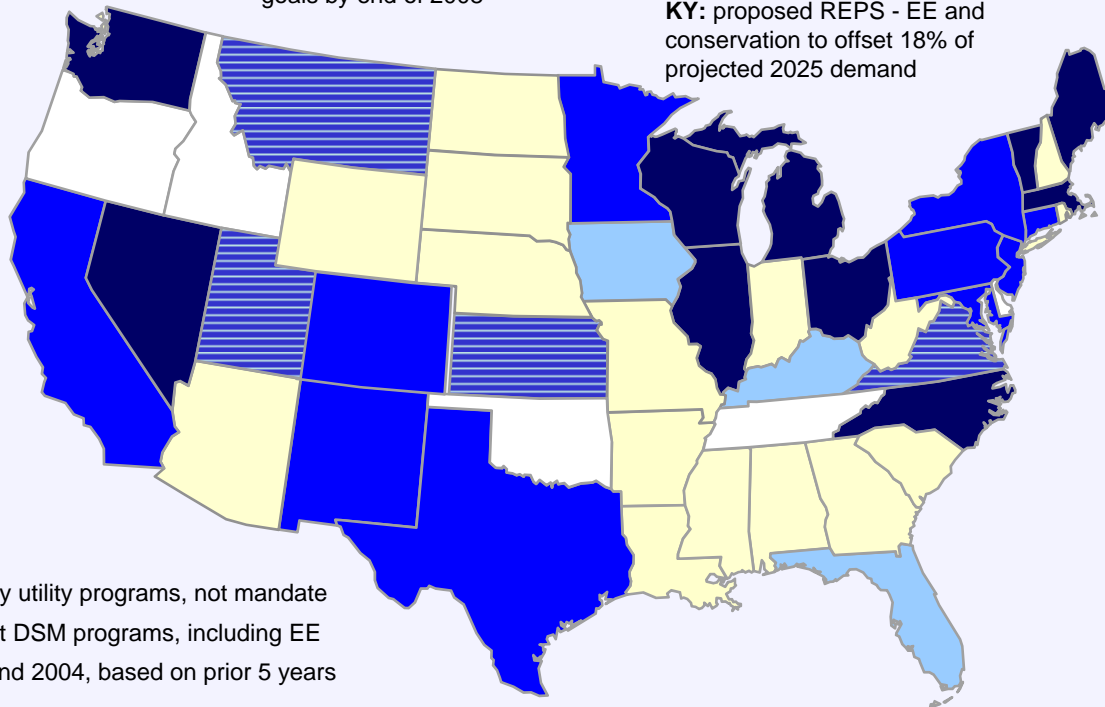
DC: reduce peak demand and energy consumption

MD: reduce peak demand and per cap electricity use 15% by 2015

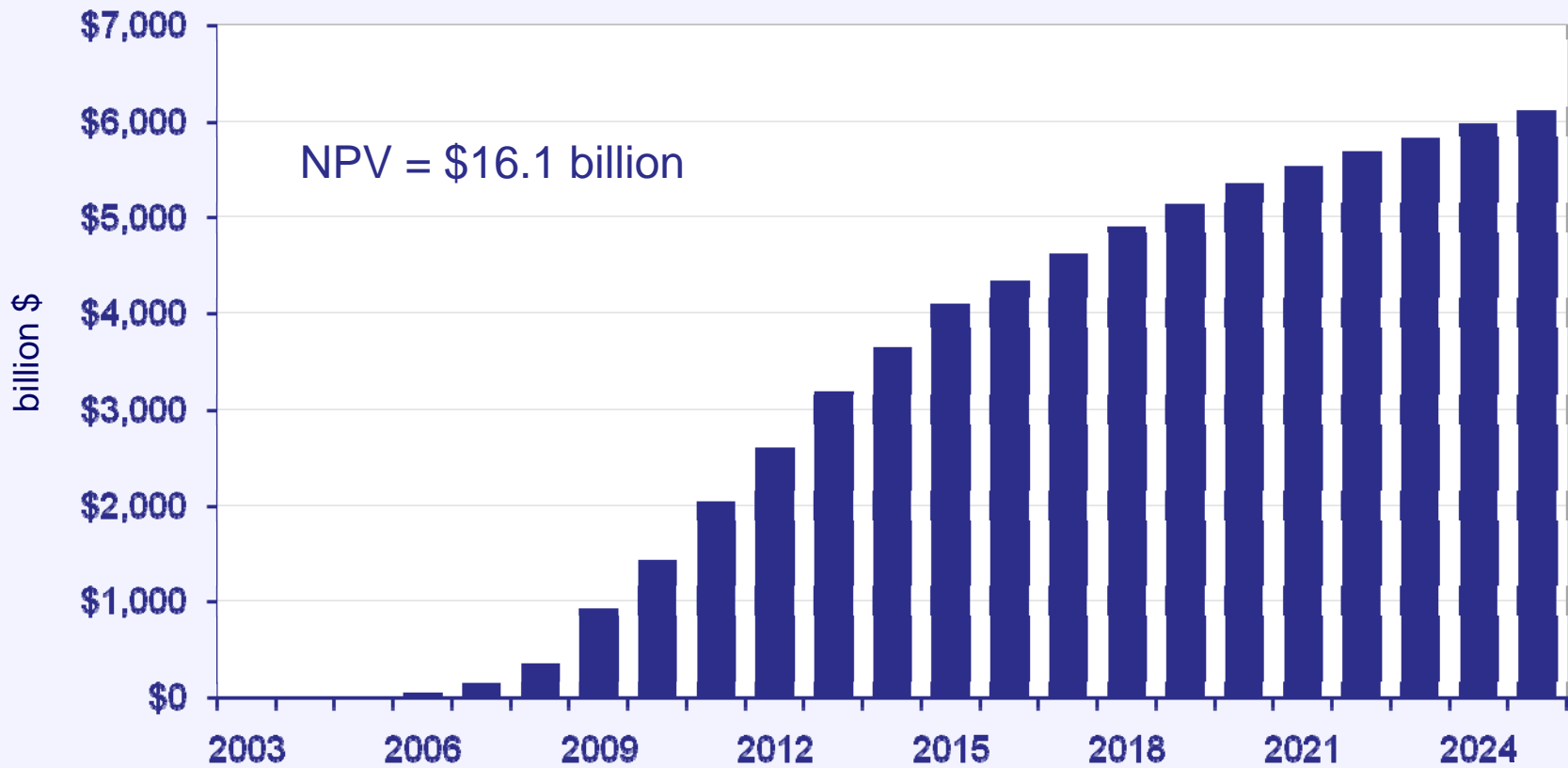
VA: reduce 10% of 2006 sales by 2022 with EE, DR

NC: EE to meet up to 25% of RPS to 2011; later to 40%

FL: PSC to adopt goals to reduce electric consumption, peak demand



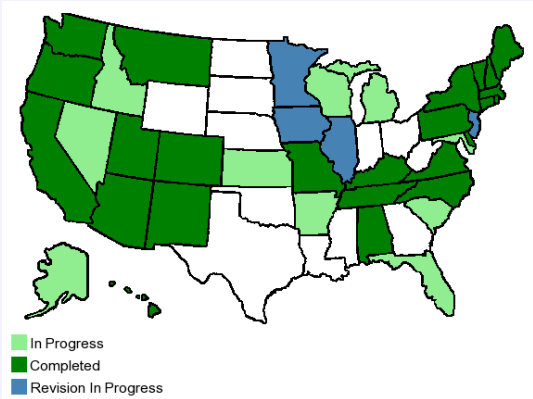
Estimated Cost of Energy Efficiency Resource Standards



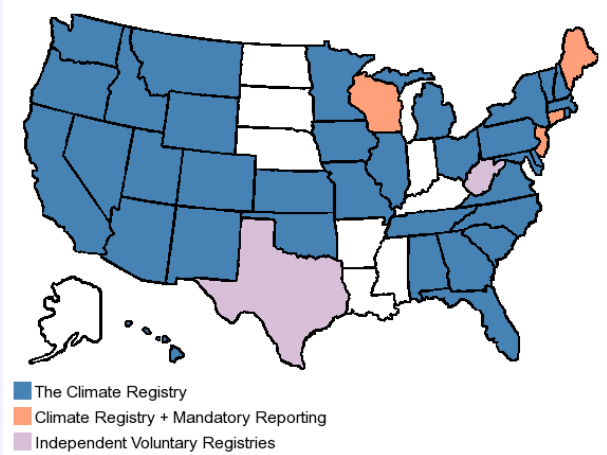
Climate Change

State Initiatives on Climate Change Policies & Activities

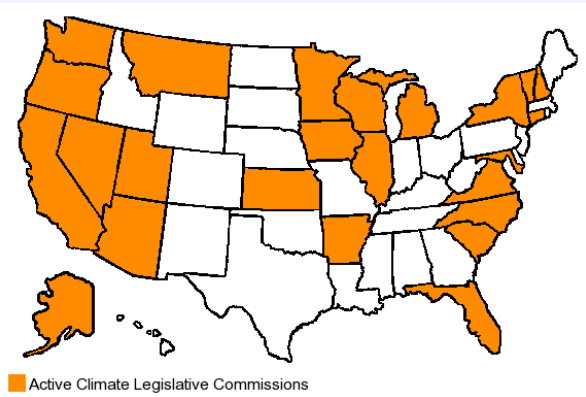
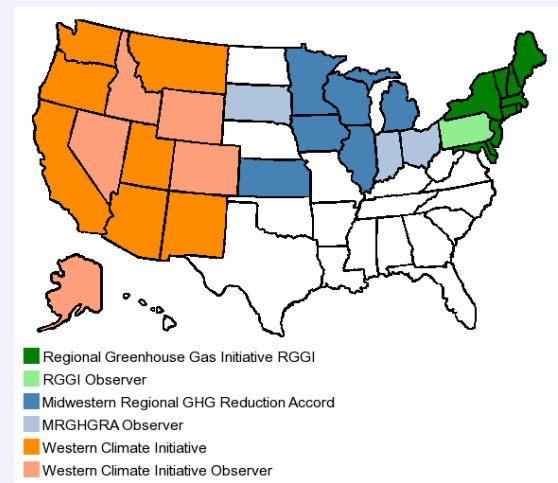
States with Climate Plans



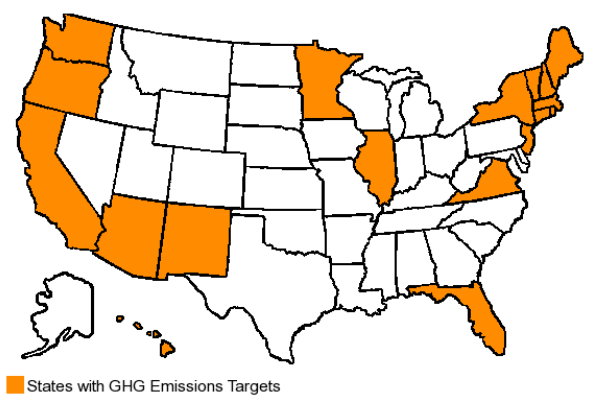
States with GHG Registries



Regional Initiatives

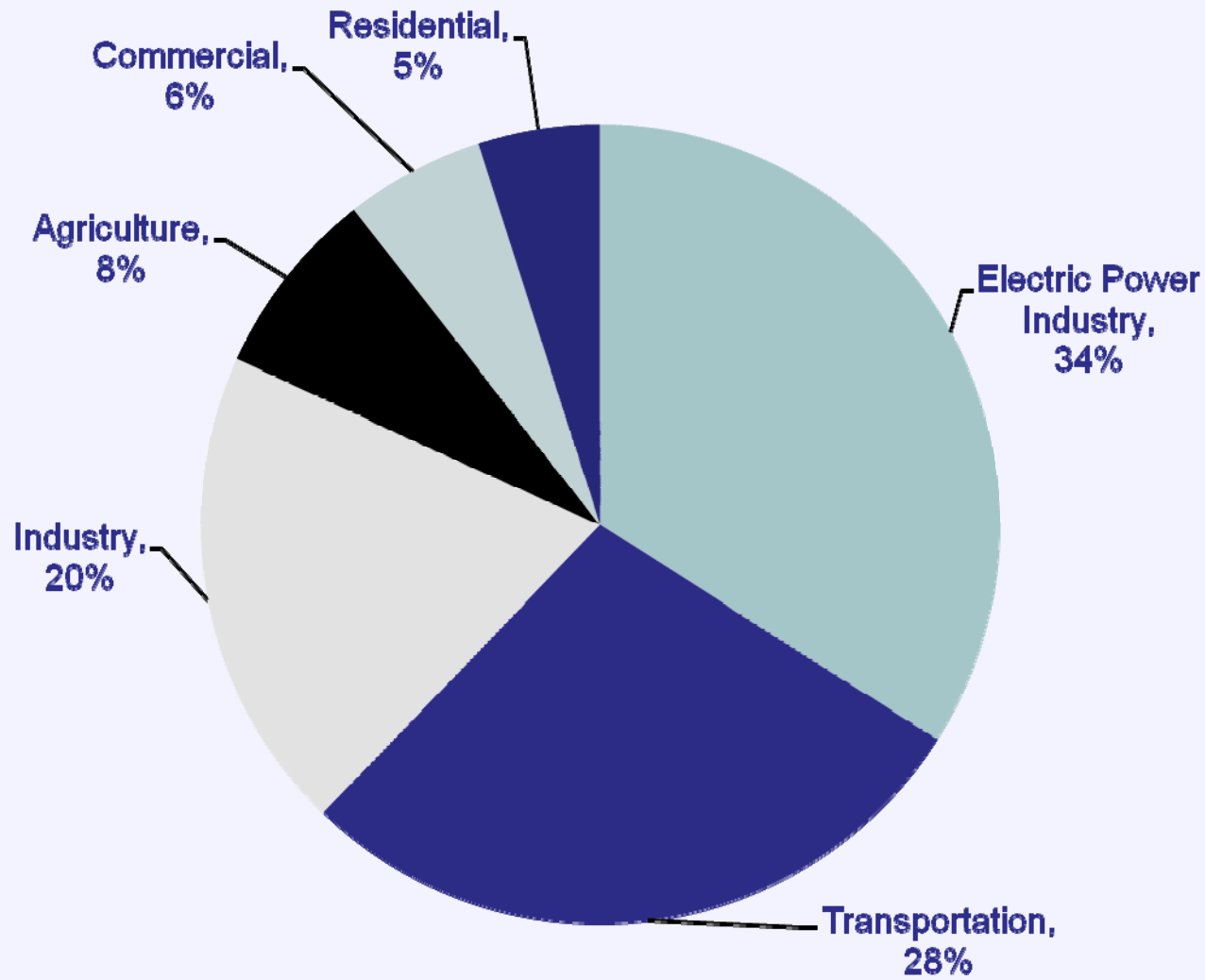


States with Climate Policy Groups



States with GHG Emissions Targets

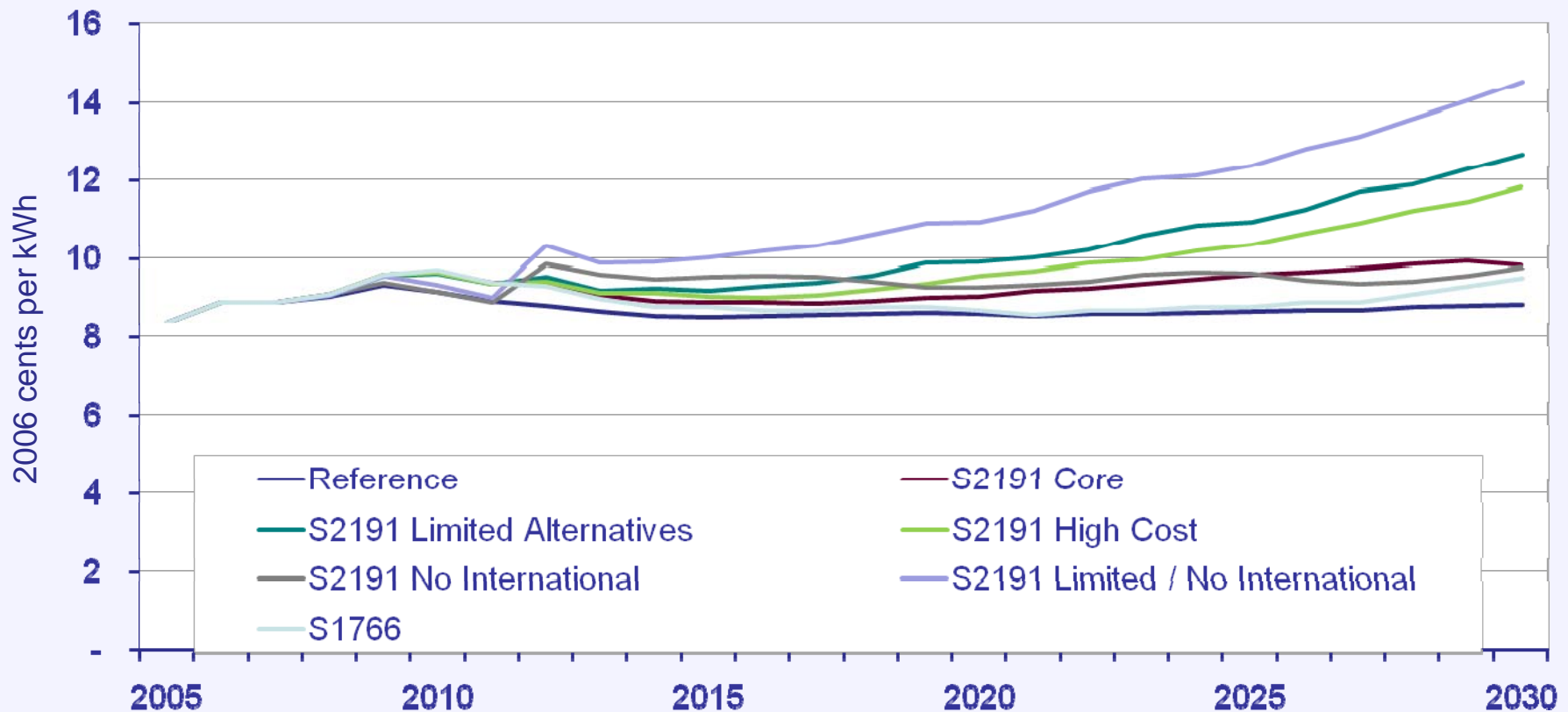
U.S. Greenhouse Gas Emissions Allocated to Economic Sector (Tg CO₂ Eq.)



S 2191 Electricity Prices (2006 cents per kWh)

Legislation like S. 2191 would lead to higher electricity prices. In the S. 2191 Core Case, electricity prices are 5% in 2020 and 11% higher in 2030 than the prices in the reference case.

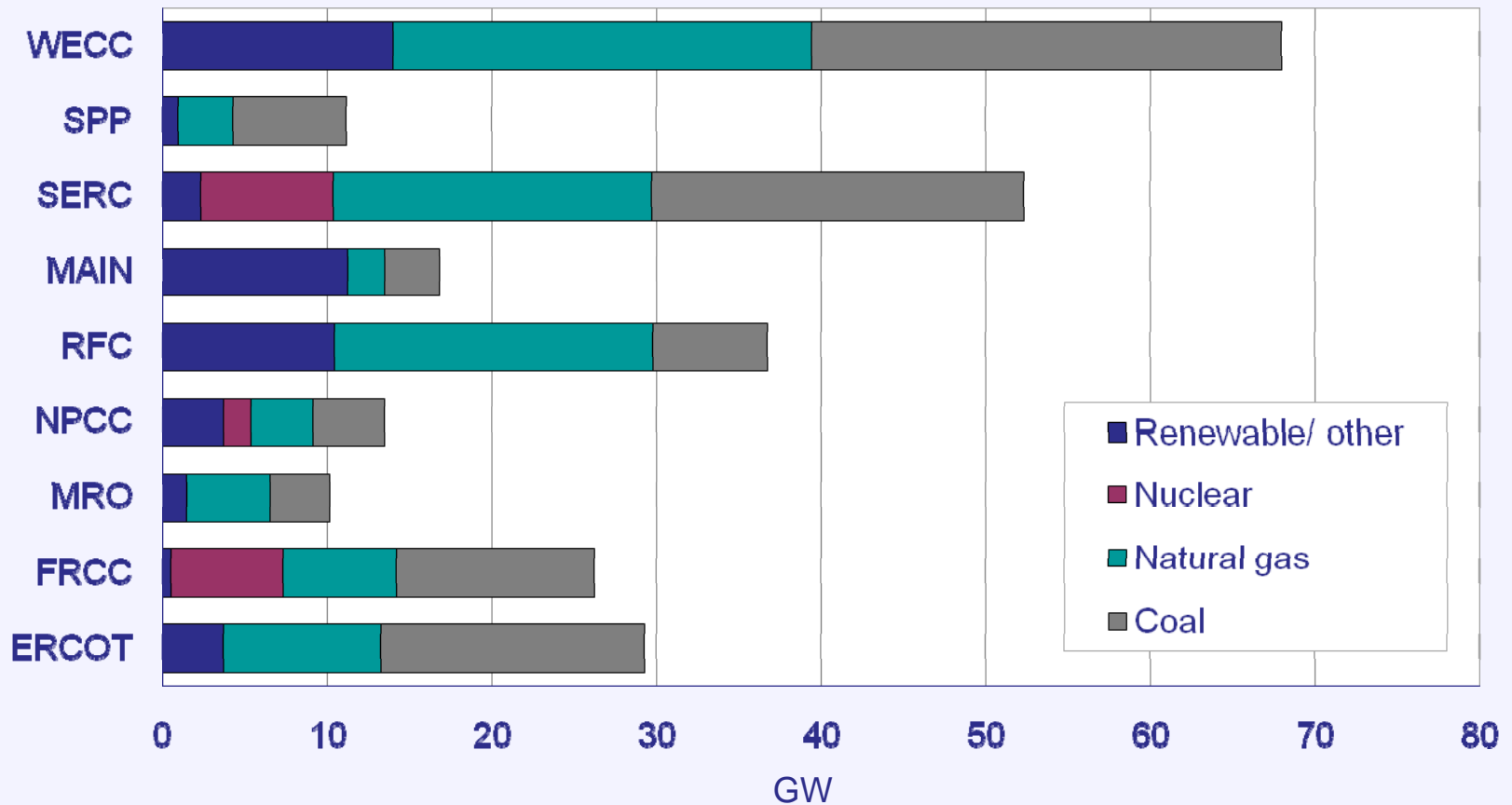
This increases total consumer expenditures for electricity by \$126 billion.



Resource Requirements & Fuel Diversity

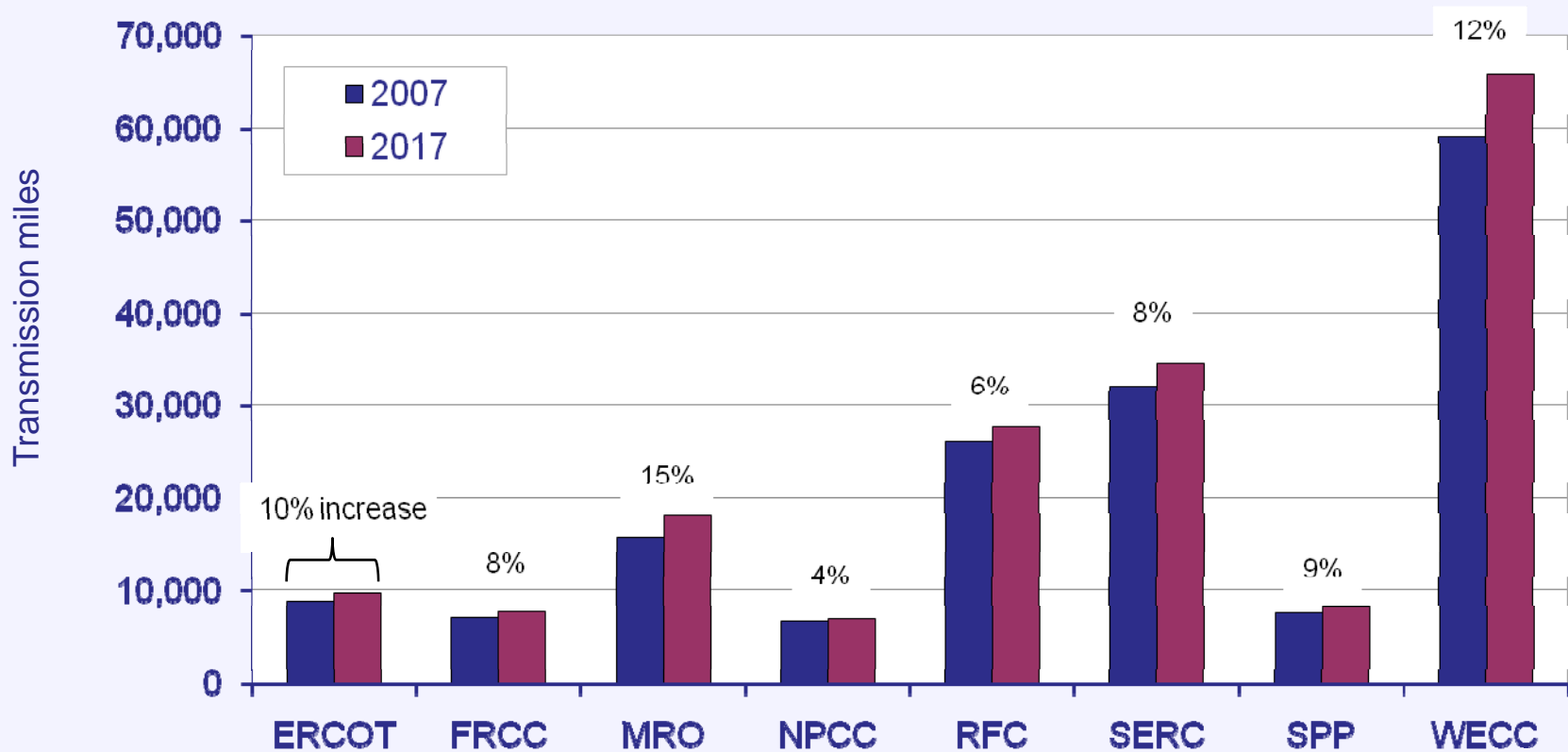
Electric Generation Capacity Additions By Region and Fuel (2007-2030)

All electricity demand regions are expected to need additional, currently unplanned, capacity by 2030. The largest amount of new capacity is expected in the Southeast (FL and SERC), which represents a relatively large and growing share of total U.S. electricity sales and thus requires more capacity than other regions.



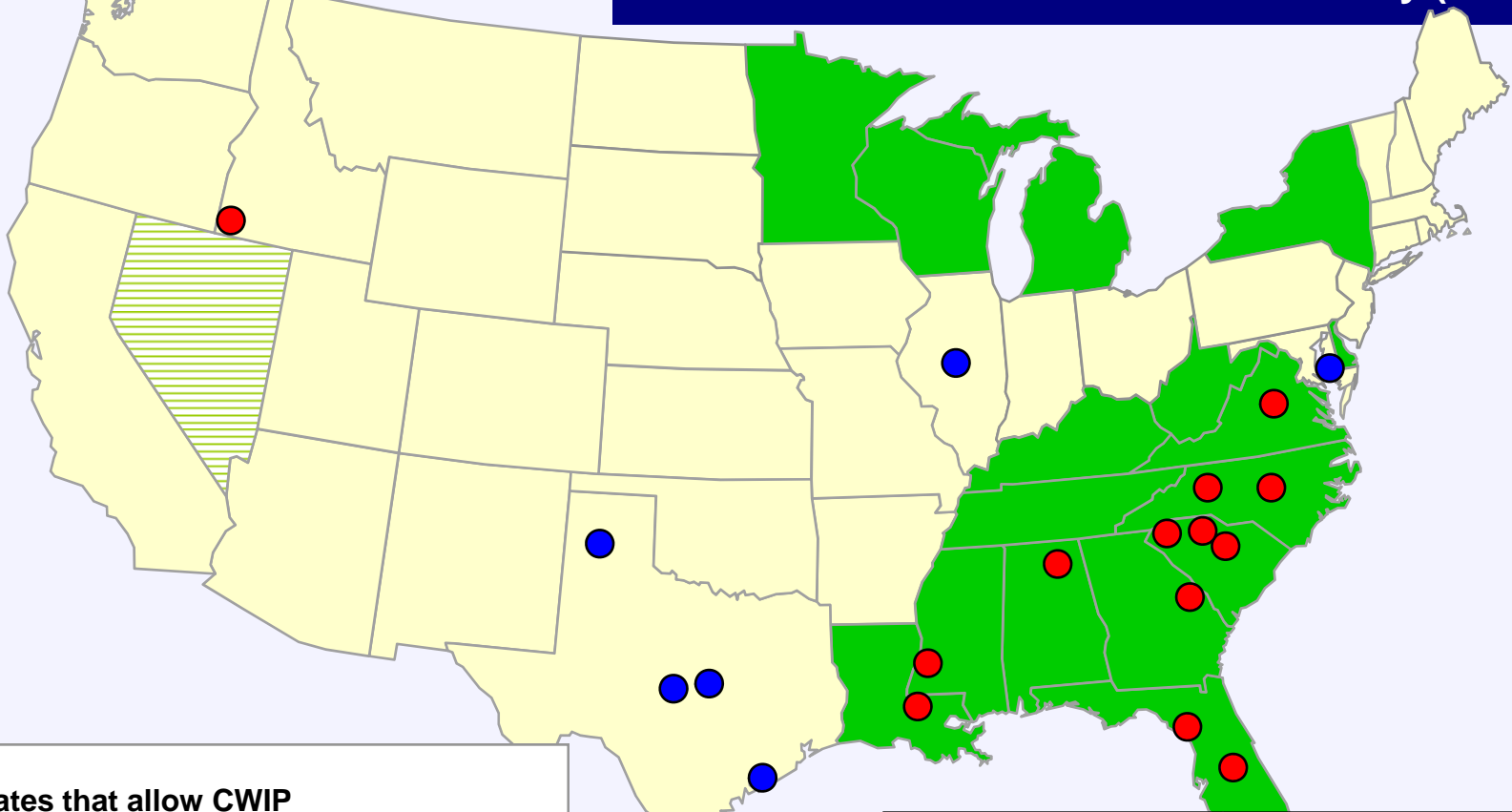
Planned Transmission Circuit Miles 2007 Existing and 2017 Planned

Although transmission investment is increasing in some areas, lagging investment in transmission resources has been an ongoing concern. A recent NERC survey of industry professionals ranked aging infrastructure and limited new construction the **number one challenge to reliability** – both in likelihood of occurrence and potential severity.



Risk Shifting

Announced Nuclear Plants and States Allowing Carrying Cost Recovery (“CWIP”)

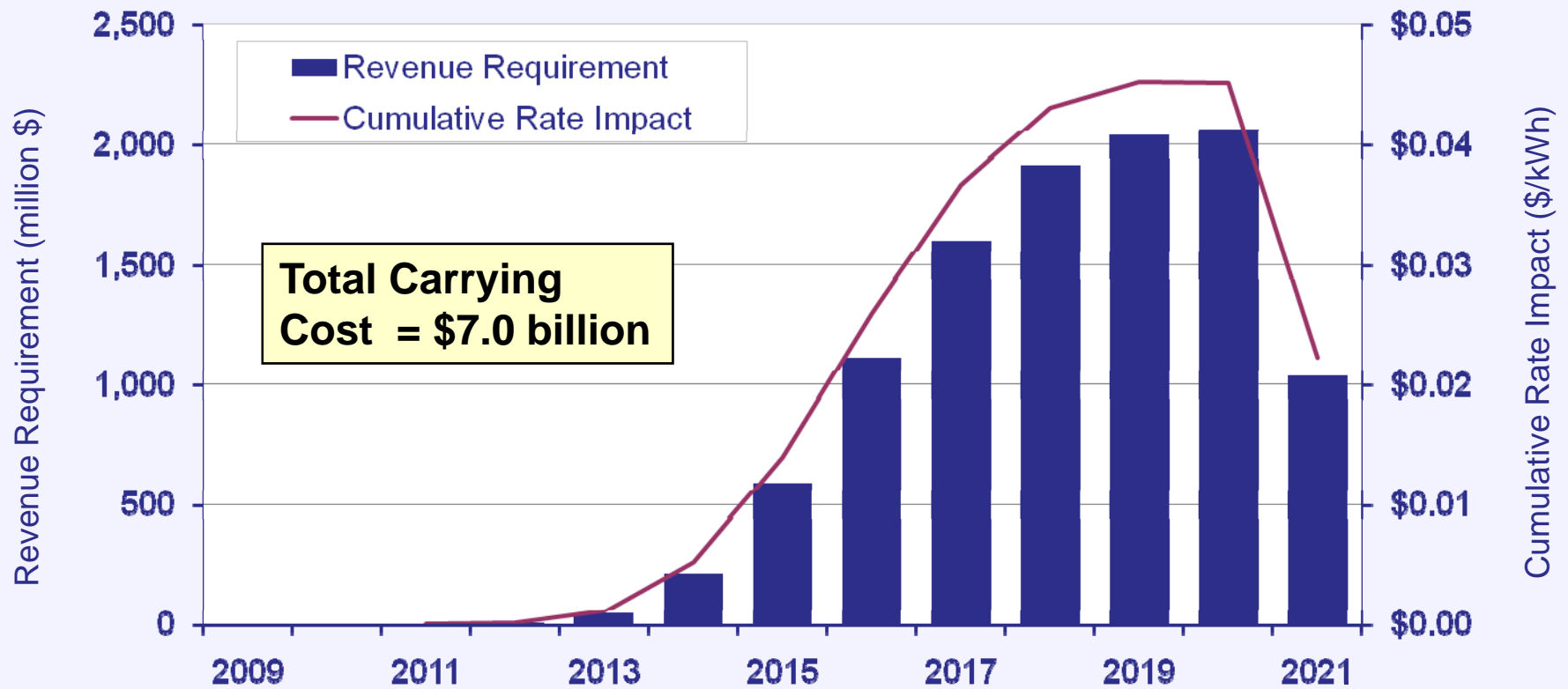


- States that allow CWIP
- Proposed Nuclear Plants - Utility
- Proposed Nuclear Plants - Merchant
- Proposed Nuclear Plants - Undetermined

	Proposed Capacity	MW	Percent of Total
Utility		22,900	59.2%
Merchant		15,750	40.8%
States w/ Cost Recovery Rules		5,750	14.9%
States w/o Cost Recovery Rules		32,900	85.1%

Note: CWIP has limited application in Nevada. One proposed plant in Florida and two proposed plants in Texas have locations that are yet to be determined.

Nuclear Carrying Costs and Rate Impacts



Note: Assumes a cost of capital of 9.25%.

Conclusions

- **Most action on energy independence and clean energy has already been taken at the state level.**
- **Federal action will have to react to, and accommodate these state initiatives.**
- **All of these actions will have to be paid – primarily through utility rates – another form of taxation to support policy goals.**
- **Policies will continue to challenge risk sharing historic relationships.**
- **Likely to see period of substantially increasing utility rates – base rates, as opposed to fuel rates, will be the primary source of the increase.**

Questions, Comments, & Discussion

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