



# America's Natural Gas Advantage: Securing Benefits for Ratepayers Through Paradigm Shifts in Policy

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Center for Energy Studies

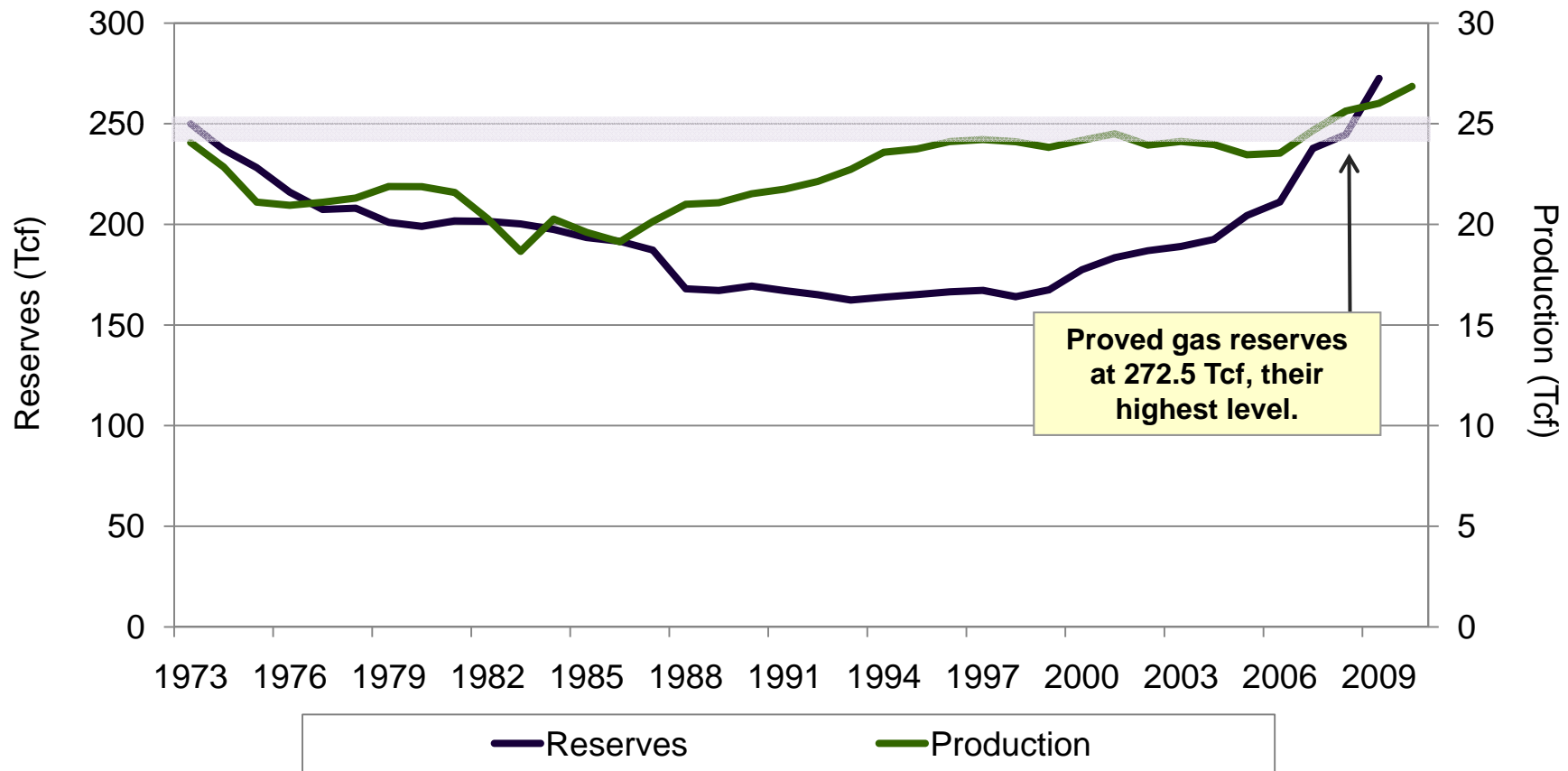
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## **The Golden Age of Natural Gas**



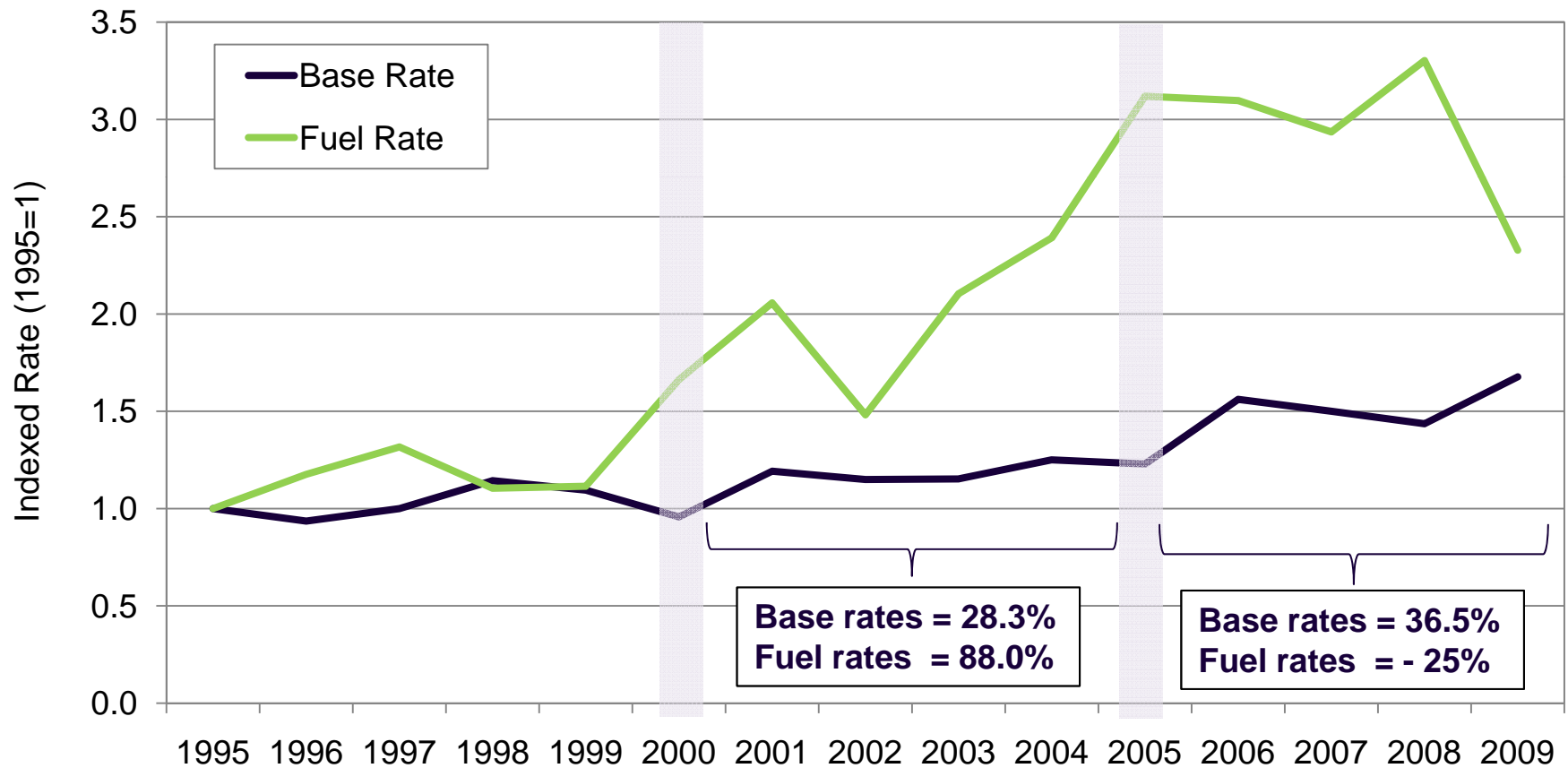
U.S. Natural Gas Production and Proved Reserves, January 2007 to Present

2006-2007 reserves growth is the largest in over 30 years. On average, natural gas reserves have been increasing by 5 percent per year since 2000 (except 2004-2005 tropical season, 2 percent).



**Annual Percent Change in Base Rate versus Fuel Rate – Natural Gas**

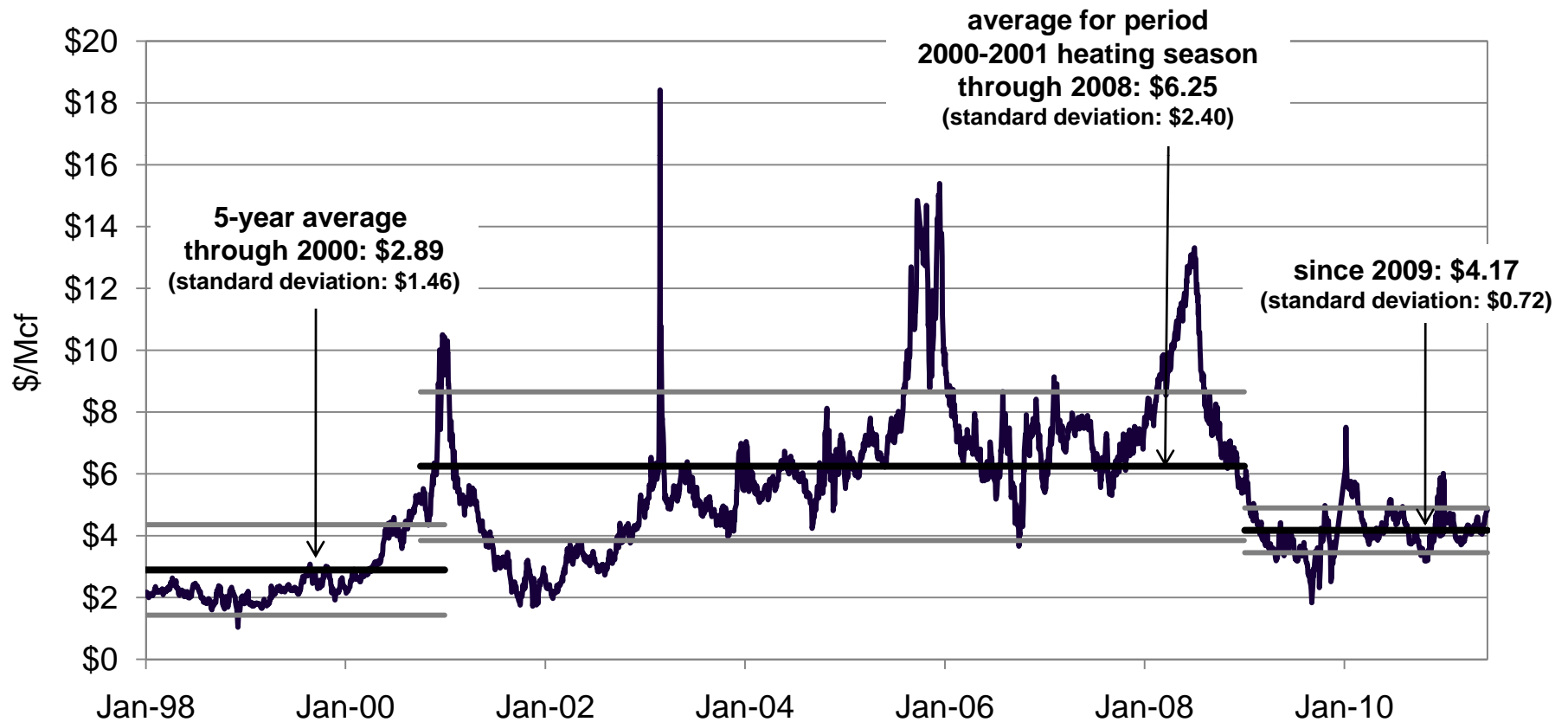
**Gas price decreases have been translated into direct bill reductions for many ratepayers.**





Crude Oil and Natural Gas Prices

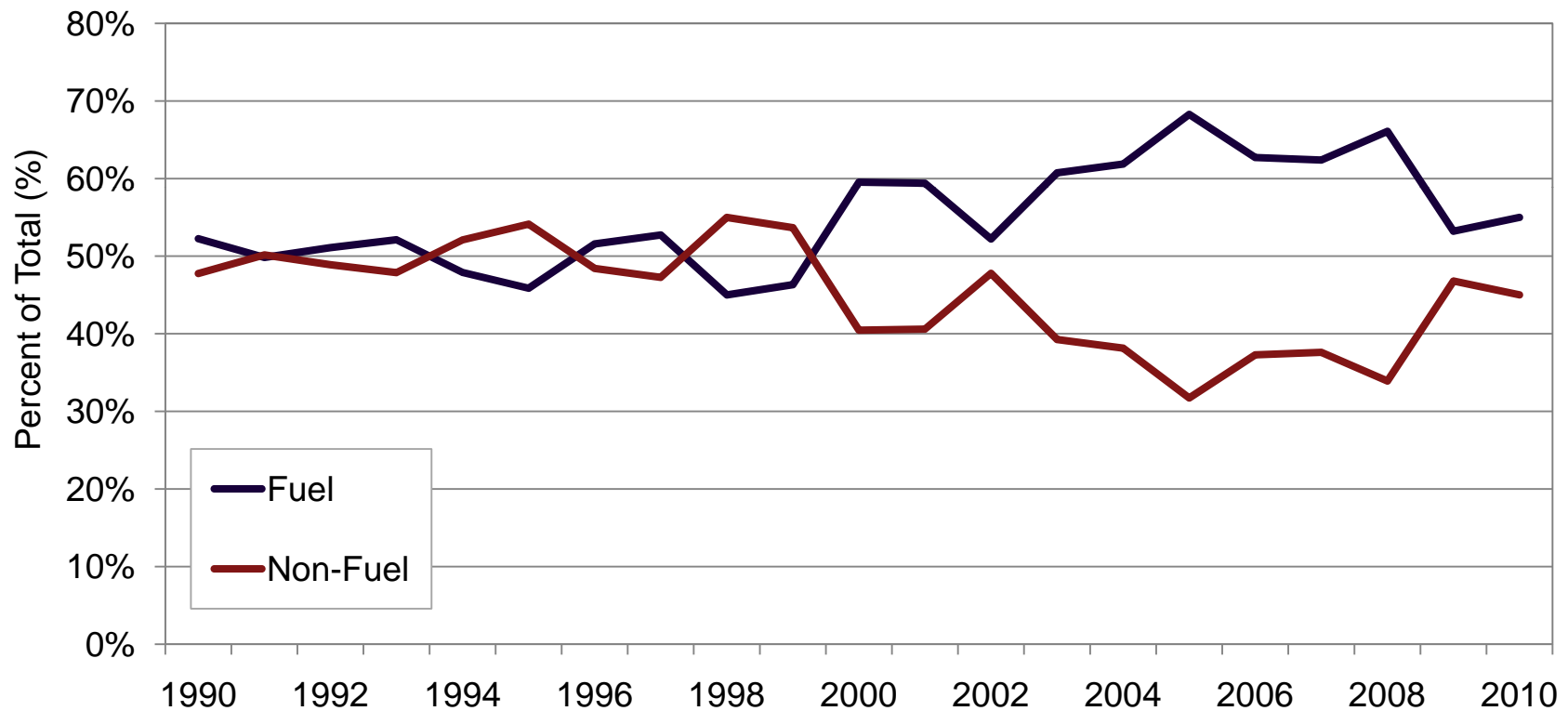
Ratepayers have also seen considerable benefits from reduced natural gas pricing volatility.





Gas and Non-Gas Costs in U.S. Distribution Rates

Natural gas price decreases have help reduce the overall share of ratepayers' bills from fuel (PGA) purchases. This has important implications for future regulatory decisions.



Source: Energy Information Administration, U.S. Department of Energy.

**Basin Competition**

**Shale production is not a domestic, “flash in the pan” supply opportunity. The opportunity spans the globe regardless of what we do in North America.**

|                  | <b>Shale Resources (Tcf)</b> |
|------------------|------------------------------|
| Asia Pacific     | 6,155                        |
| North America    | 3,842                        |
| Middle East      | 2,548                        |
| South America    | 2,117                        |
| Asia             | 627                          |
| Europe           | 549                          |
| Africa           | 274                          |
| <b>Worldwide</b> | <b>16,112</b>                |





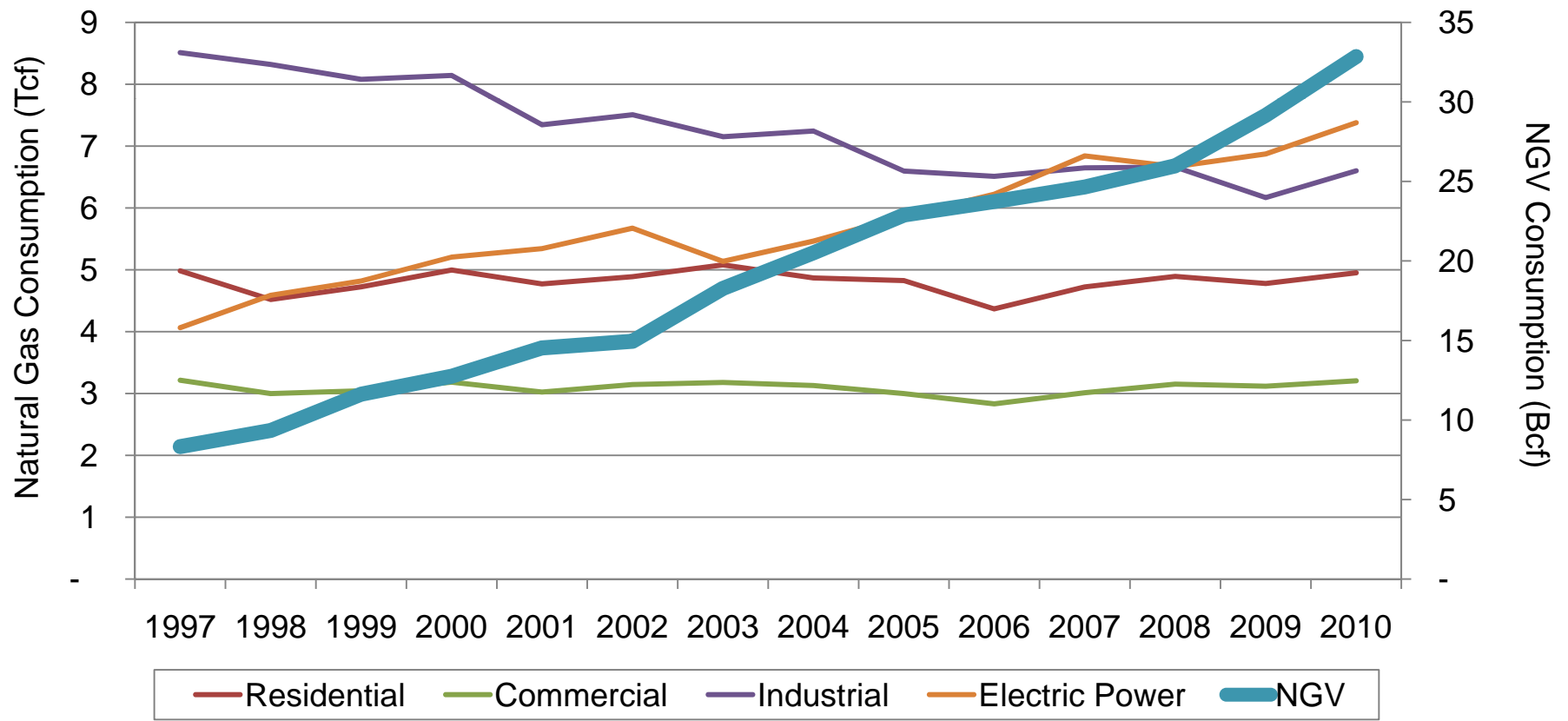
## **New Gas Uses: Threat or Opportunity?**





Natural Gas Consumption by Sector

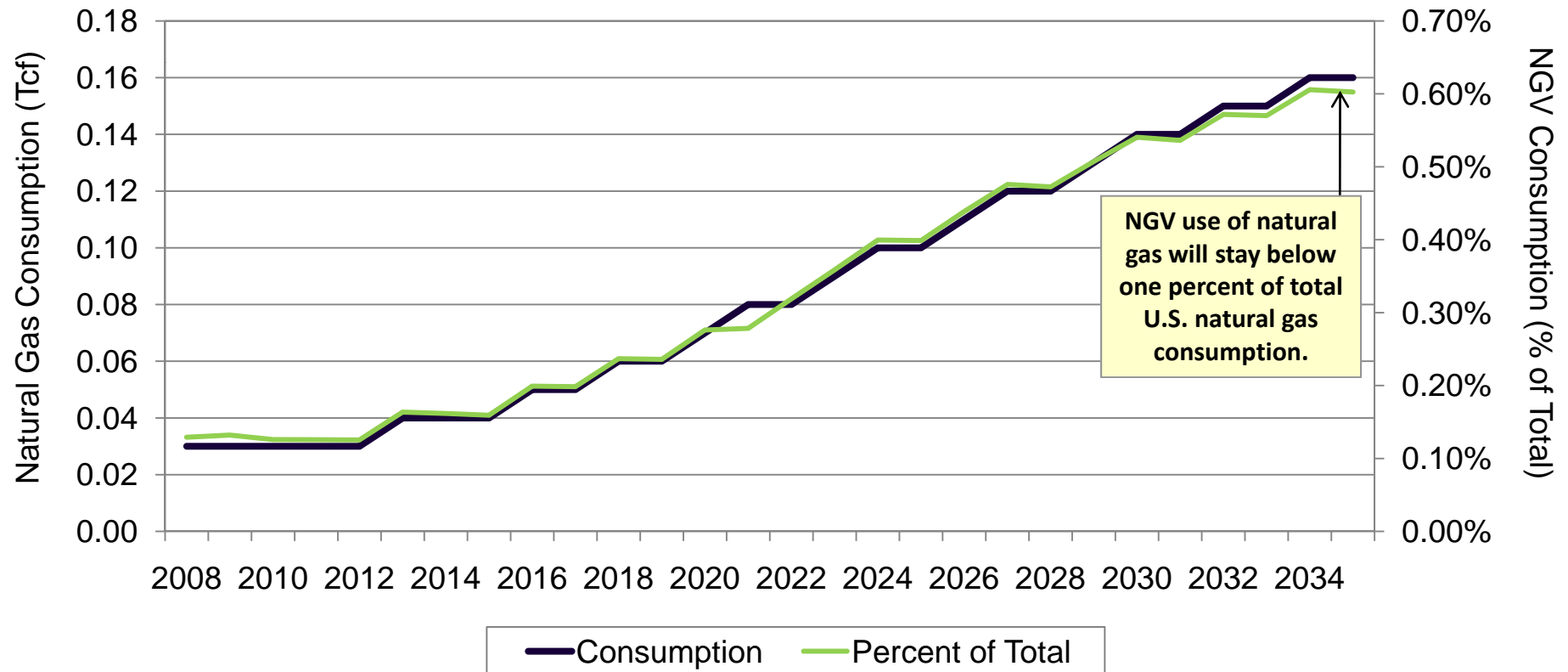
Currently, NGVs account for less than 0.18 percent of U.S. natural gas consumption, but the rate of growth in consumption (158 percent) over the past decade has surpassed all other end-uses.



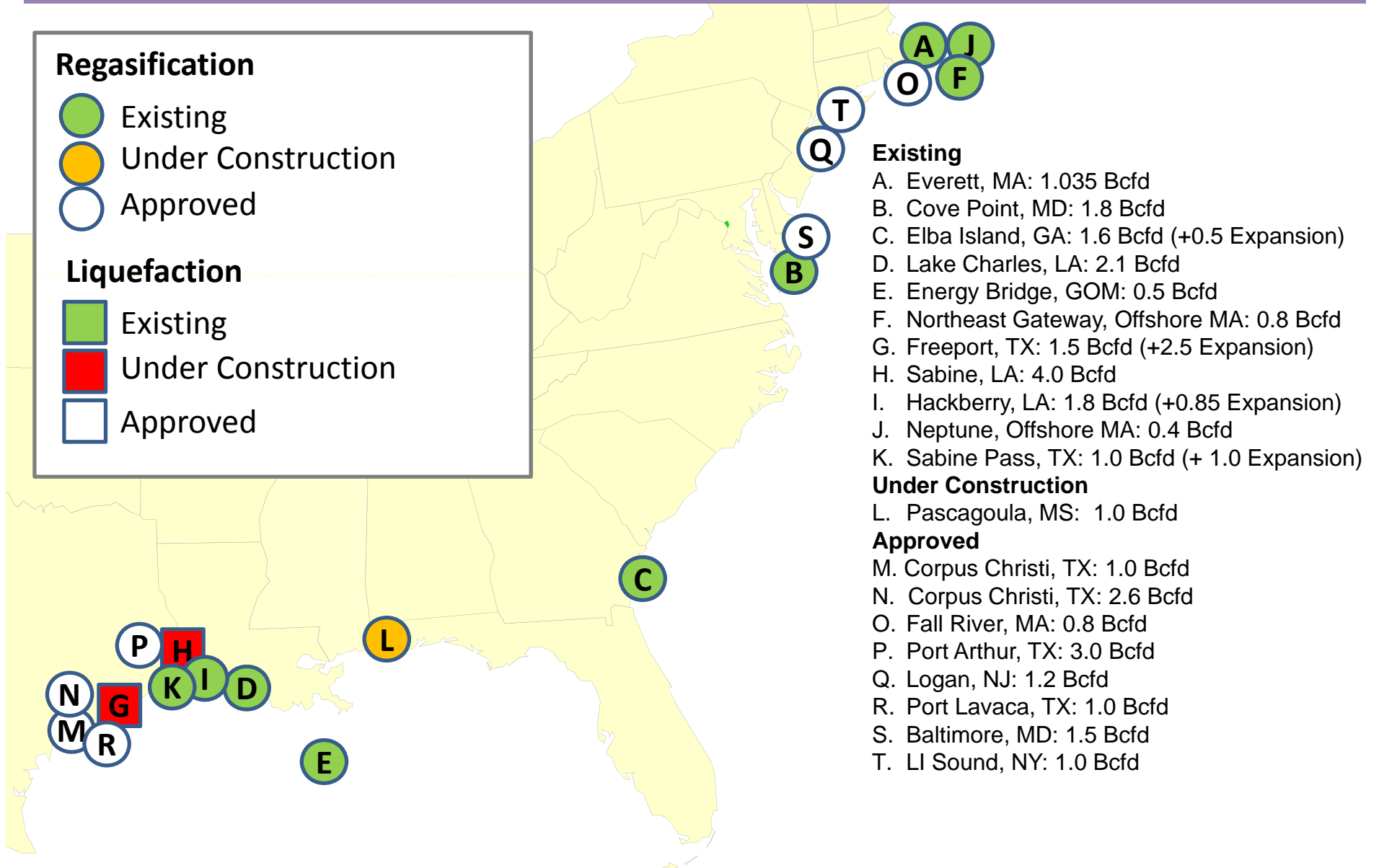


Potential Natural Gas Consumption – NGV

NGV consumption of natural gas is estimated to increase at an average annual rate of 7 percent through 2035. At best, this usage will be considerably less than 1 Tcf and slightly over one-half of one percent of total natural gas market.



**Considerable Underutilized LNG Regasification Capacity along GOM**



## **Policy Conflicts**



### **Natural Gas Producers' Viewpoint:**

- **Industry has stepped up to the plate and applied significant cash into sub-surface mineral rights and advanced drilling techniques to deliver a historic record level of natural gas reserves that has the strong potential to provide over a century's worth of lower cost, environmentally friendly resources.**
- **However, producers need some price growth to ensure continued drilling profitability, otherwise, markets will revert to their traditional "boom-bust" cycles leading to increased costs and price volatility for consumers.**
- **New markets in the transportation sector and abroad, through natural gas exports, could be important tools.**



**Natural Gas Consumers' Viewpoint:**

- **Consumers (and industries) have paid through the nose over the past decade for their energy resources.**
- **It is likely that high energy costs led to, or at least contributed to, the most significant economic recession in U.S. history.**
- **American consumers (and industries) need this period of low-cost energy resources (particularly natural gas) to facilitate a meaningful economic recovery.**
- **Subsidizing new end uses for natural gas, and facilitating the export of any low-cost energy resource, is likely to jeopardize the current economic recovery.**

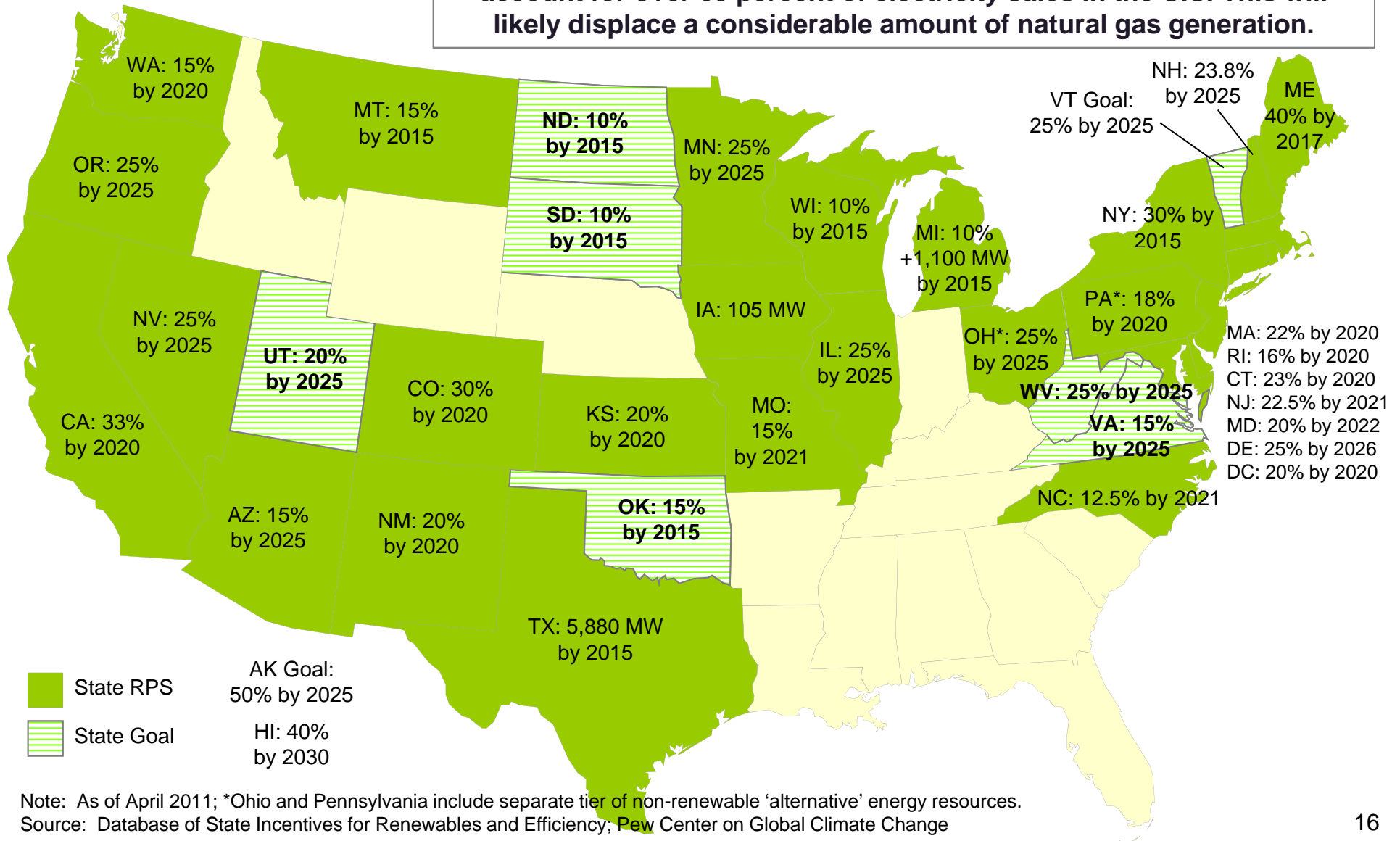


**Who's Right? – Does it Matter? – What is the Reality of the Situation:**

- **New uses for natural gas transportation may be inevitable, regardless of subsidies, given recent and projected crude oil and refine product prices. The relative economics already favor these applications and are moving more in that direction.**
- **The U.S. has a long history of exporting a variety of energy resources. Trade restrictions would set a slippery slope and, regardless, are unlikely given past and recent approvals.**
- **Becomes incumbent upon consumers and regulators to reassess current policies relative to these changes in order to avoid negative longer-run outcomes. Large number of current policies are based upon 2005-2006 energy market imperatives that have questionable bearing today.**

**RPS States (April 2011)**

Currently 37 states have RPS policies in place. Together these states account for over 60 percent of electricity sales in the U.S. This will likely displace a considerable amount of natural gas generation.

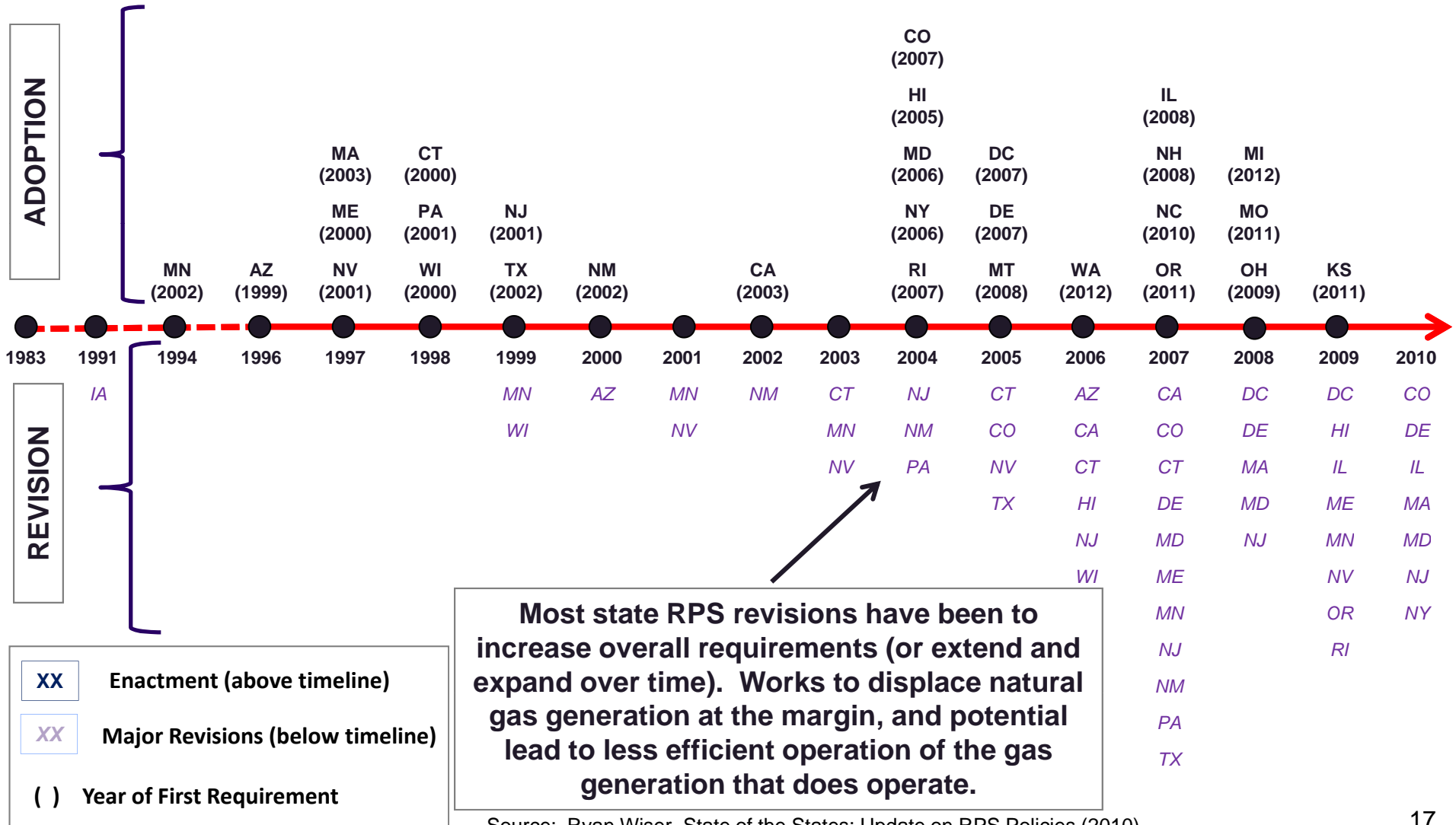


Note: As of April 2011; \*Ohio and Pennsylvania include separate tier of non-renewable 'alternative' energy resources.  
 Source: Database of State Incentives for Renewables and Efficiency; Pew Center on Global Climate Change





## Policy Conflicts, RPS Adoption and Revisions





### Policy Conflicts, Energy Efficiency Mandates

**WA:** pursue all cost effective conservation: ~10% by 2025

**OR:** 1% annual savings by 2013

**CA:** save 1,500 MW, 7,000 GWh; reduce peak 1,537 MW: 2010-12

**NV:** 0.6% annual savings (~5%) to 2015; EE to 25% of RPS

**UT:** PUC examining 1% annual

**CO:** 11.5% energy savings by 2020

**AZ:** at least 22% cumulative savings by 2020; peak credits

**NM:** 10% retail electric sales savings by 2020 .

**OK:** EE up to 25% of renewable goal

**TX:** 25% annual savings in 2012; 30% in 2013 and beyond

**HI:** 30% electricity reduction by 2030

**MN:** 1.5% annual savings to 2015

**IA:** 1.5% annual; 5.4% cumulative savings by 2020

**WI:** 1.5% electric savings by 2014; 15% peak reductions

**MI:** 1% annual energy savings

**IL:** 2% energy reduction, 0.1% peak by 2015

**IN:** 2% energy savings by 2019

**OH:** 22% energy savings by 2025 ; 8% peak by 2018

**ME:** 1.4% annual energy savings by 2013

**VT:** 2% annual; 11% cumulative energy reductions by 2011

**MA:** 2.4% annual electricity savings by 2012

**NY:** reduce electric use 15% by 2015

**CT:** 1.5% annual utility savings, 10% peak

**RI:** reduce consumption 10% by 2022

**NJ:** BPU proceeding to reduce consumption, peak

**DE:** reduce consumption 15%; peak 10% by 2015

**PA:** reduce consumption 3%; peak 4.5% by 2013

**MD:** reduce electricity use and peak 15% by 2015

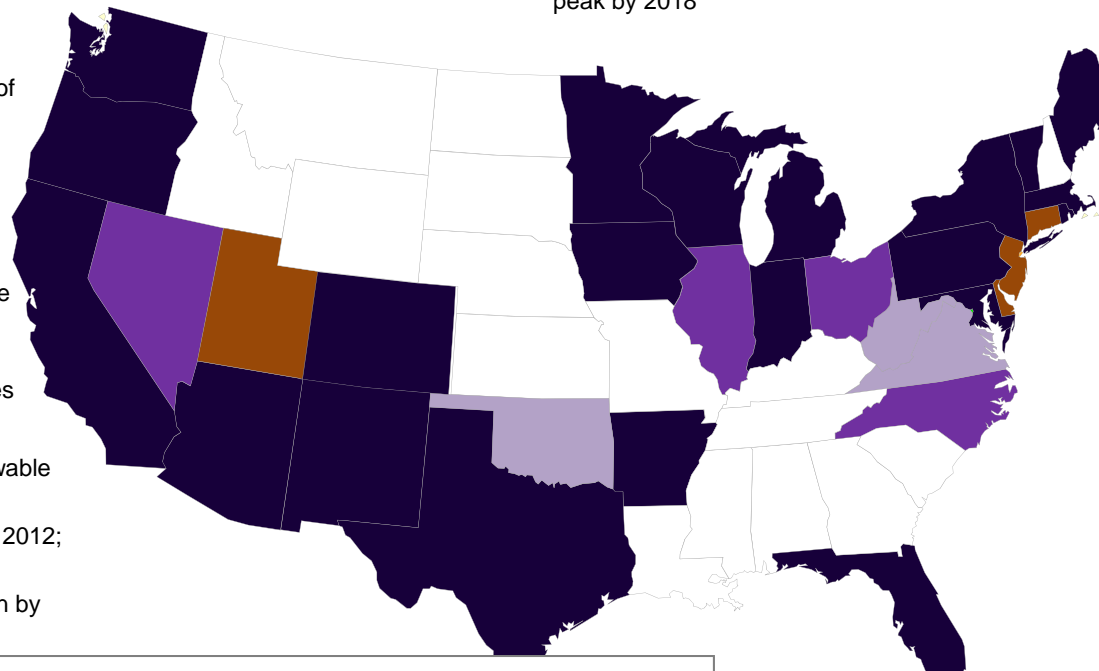
**VA:** reduce electric use 10% by 2022

**WV:** EE & DR earn credits in A&RES

**AR:** 0.75% electricity savings by 2013

**NC:** EE to meet up to 25% of RPS by 2011

**FL:** 3.5% energy savings and summer and winter peak reductions by 2019



**The economics of energy efficiency should be re-evaluated – difficult to argue that a standard based upon natural gas prices in excess of \$10/MMBtu can lead to large reductions in sales.**

- EERS by regulation or law (stand-alone)
- EE in RPS (hybrid)
- EE in renewable goal
- EE regulations pending

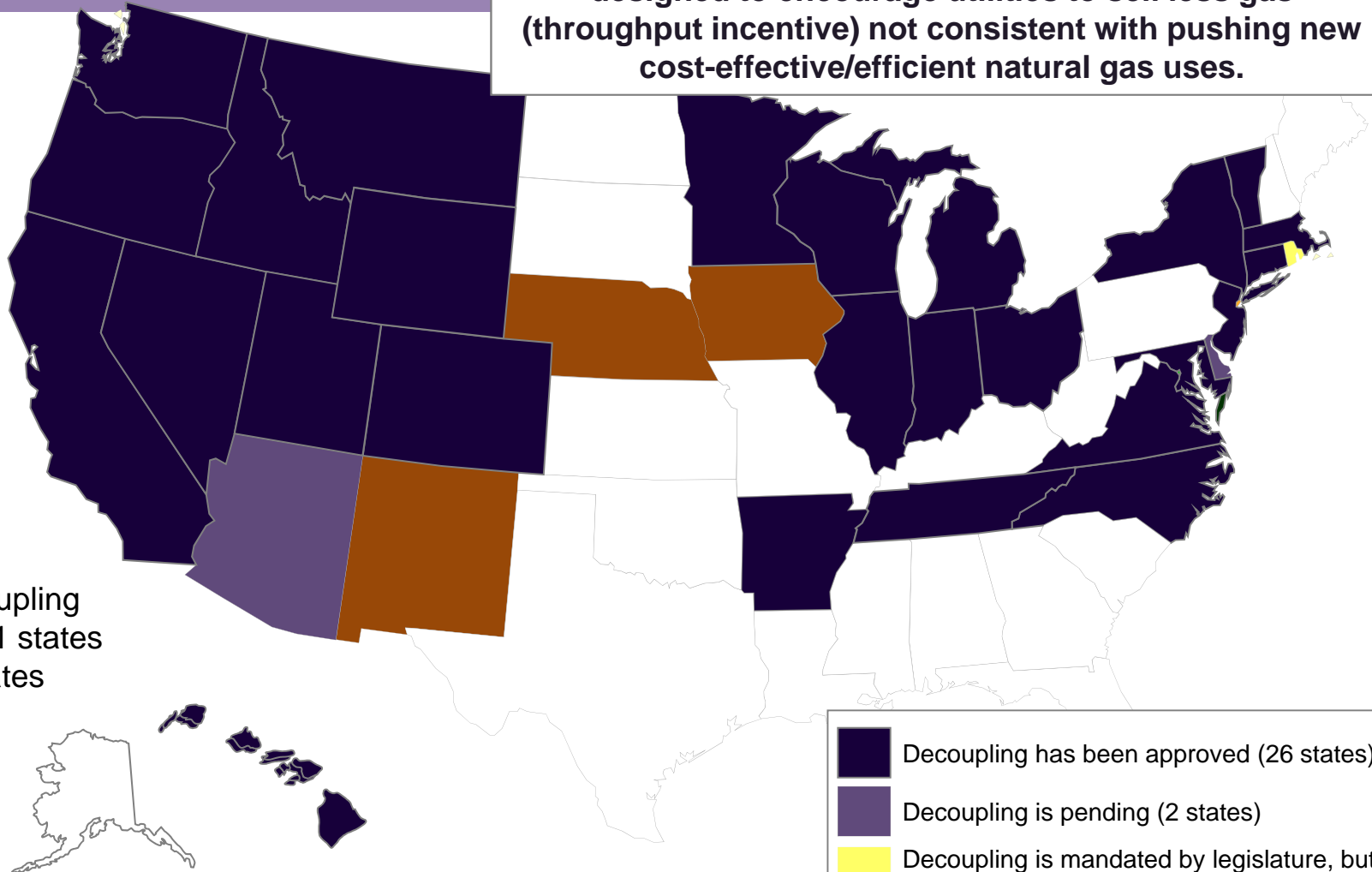
Note: As of April 15, 2011.

Source: Federal Energy Regulatory Commission.



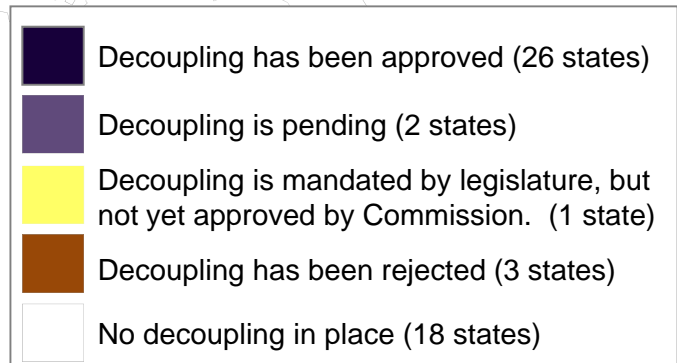
### Policy Conflicts, Revenue Decoupling

Several states have adopted policies intentionally designed to encourage utilities to sell less gas (throughput incentive) not consistent with pushing new cost-effective/efficient natural gas uses.



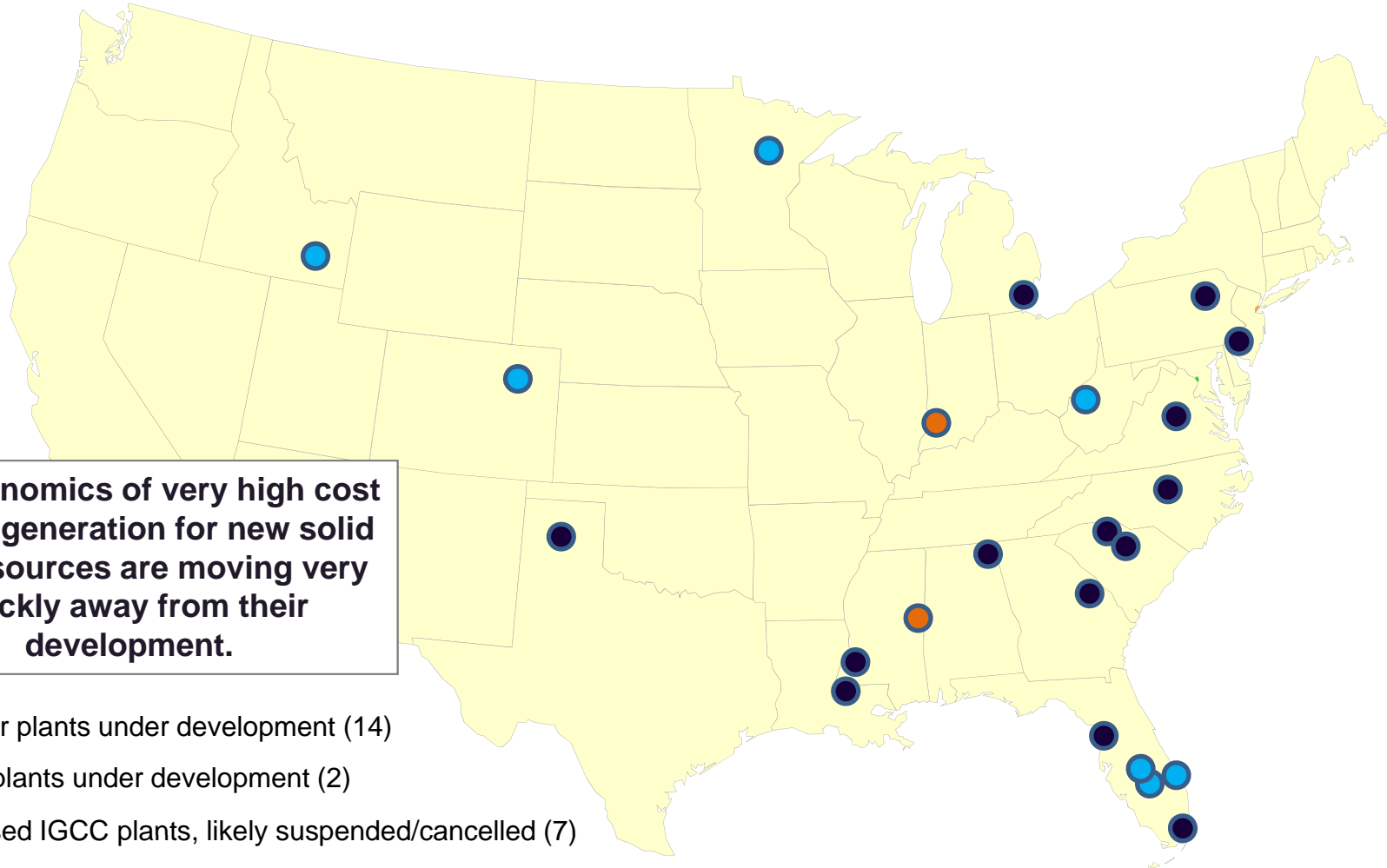
Adopted Decoupling  
Natural gas: 21 states  
Electric: 12 states

Note: The **Connecticut** and **Rhode Island** legislatures have required decoupling, but all natural gas proposals have been rejected thus far. In **Montana**, decoupling was approved by the PSC, but the utility (NorthWestern Energy) has asked a court to void the rate structure.





### Policy Conflicts, Fuel Diversity



**The economics of very high cost per kW generation for new solid fuel resources are moving very quickly away from their development.**

- Nuclear plants under development (14)
- IGCC plants under development (2)
- Proposed IGCC plants, likely suspended/cancelled (7)

Note: Nuclear plants include companies that have announced the intent to submit applications to the U.S. Nuclear Regulatory Commission for new plant licenses.

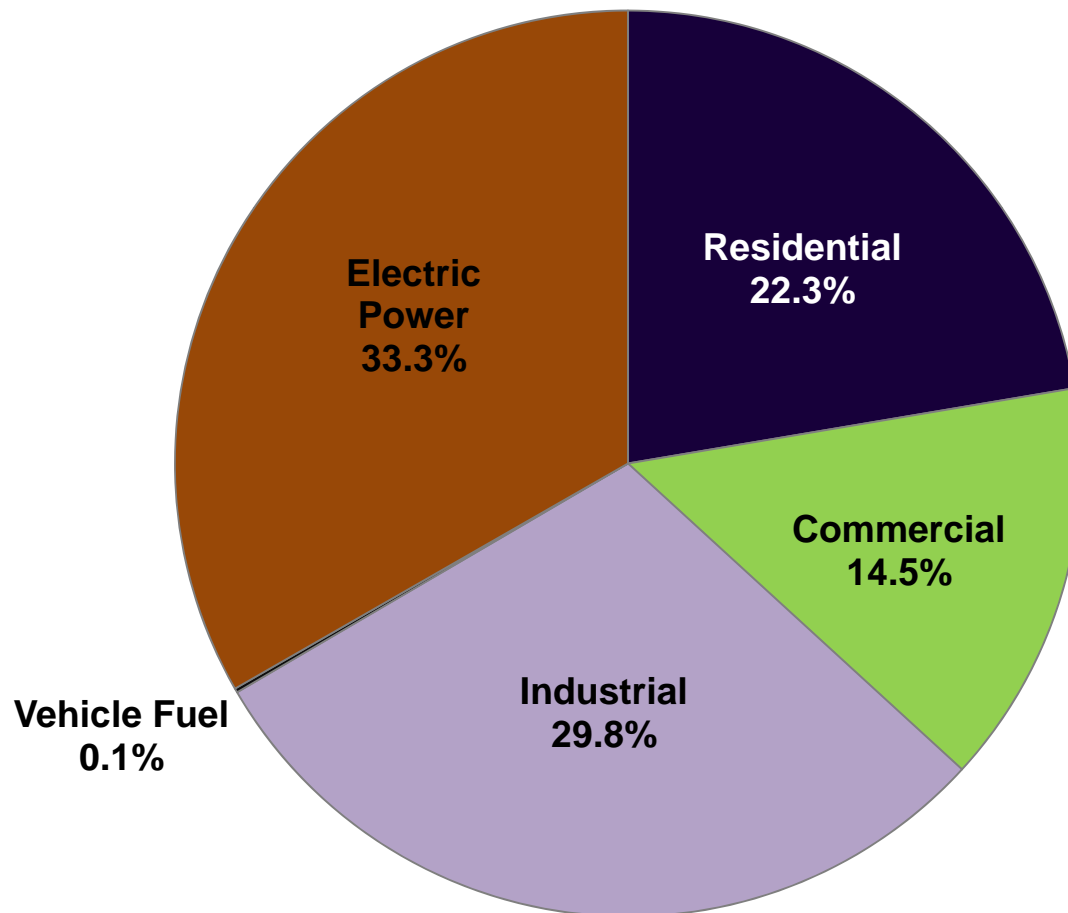
Source: Nuclear Energy Institute; and Sierra Club.

## **Conclusions**



**Conclusions: Gas Markets, Consumers, and Regulators**

**2010 natural gas consumption totaled 22.2 Tcf.  
Regulators still influence a big part of this market.**





Conclusions

- **Paradigm shifts require re-evaluation of prior goals and priorities, many of which were established in a period when natural gas prices were high, supplies were limited, and imports were likely to serve ever increasing shares of the market.**
- **Natural gas price points and supply availability need to be re-evaluated relative to energy efficiency goals, renewable rate impacts, new baseload generation technologies (IGCC and nuclear) and rate design.**
- **Not an argument to “stick” utilities with the costs for resources initiated under prior regulatory or legislative direction.**
- **But it is an argument to begin the process of evaluating changing market conditions and make necessary mid-course changes now in order to reduce ratepayer costs and the likely stakeholder conflicts that will arise if the current paths are pursued.**



Policy Changes Already in the Wind?

Under the revised natural gas usage forecast, maintaining the goal set in the 2008 EMP would result in reducing natural gas consumption by 231 Bcf in 2020. This amount represents 32% of the revised baseline level. For reasons discussed below, the State does not believe that this goal is reasonable, realistic, or consistent with the environmental or energy security goals delineated elsewhere in this document. The natural gas reduction goal must be reviewed ... the Christie Administration does not support the 231 Bcf target natural gas reduction set forth in the 2008 EMP. Economic and environmental goals will be served better by increasing rather than decreasing total natural gas use throughout New Jersey, while striving for more efficient use of natural gas for each application. [New Jersey Draft 2011 Energy Master Plan, emphasis added].





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