
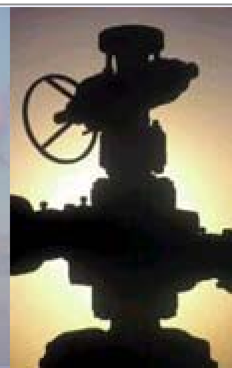



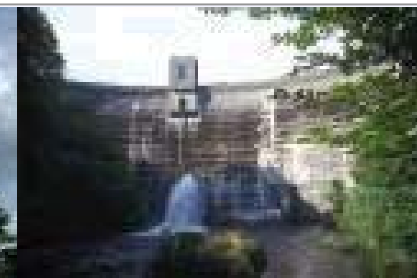


Gulf Coast Energy Outlook: Issues and Trends

Natchez Area Association of Energy Service Companies

Natchez, Mississippi
September 15, 2009

Center for Energy Studies

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Center for Energy Studies
Louisiana State University

Take Away Points – What's Happened?

- Market has shown incredible resilience in the face of exceptional geopolitical and weather-related pressures.
- Spent most of 2005-2007 playing "catch-up" – supply started showing signs of catching up with demand by mid-2008.
- Market has reacted with considerable supply, transportation, refining/processing and storage infrastructure development despite volatile prices and risks.
- Natural gas production and reserve increases have been impressive. Crude reserves holding steady with some anticipated growth in production in EOR and deepwater.

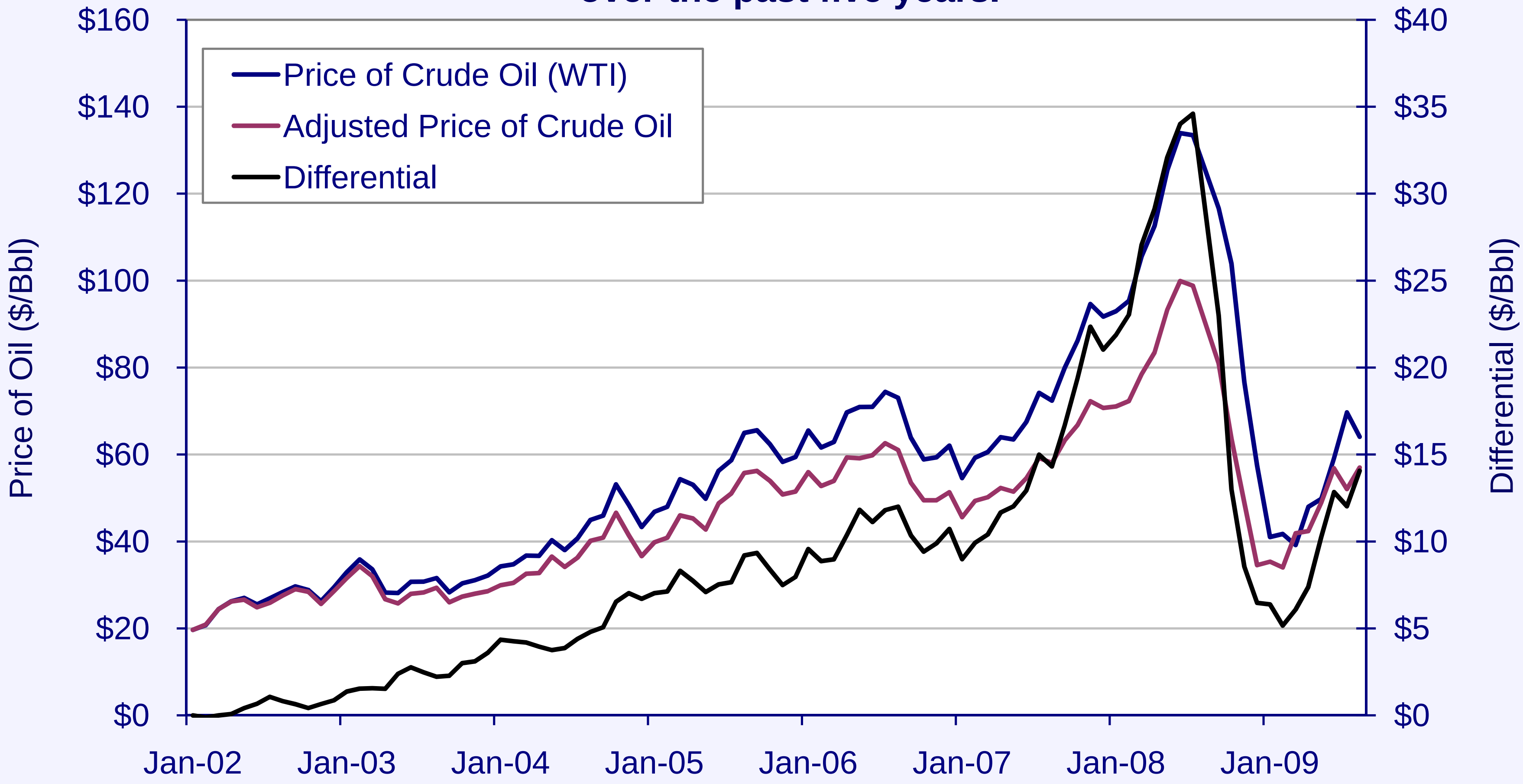
Take Way Points: Outlook & Issues

- Bottom has fallen out of the energy market just like other commodity markets.
- Economy has virtually tanked and conventional wisdom is that recovery will be slow.
- Economic contraction has resulted in one of the fastest energy demand contractions in history.
- Production, reserves, and stocks all strong… for now….
- Policy is moving quickly against the industry.
- Next year will be one of the most difficult for all sectors of the “traditional” energy business: new mandates; new taxes; higher risks; lower demand; lower margins and profits.

Recent Trends

Dollar Value and Oil Prices

Prices say a lot about what has been going on in energy markets over the past five years.



Note: The adjusted price of crude oil is the nominal WTI adjusted by the Federal Reserve Bank's Broad Index. The Broad Index is a weighted average of the foreign exchange values of the U.S. dollar against the currencies of a large group of major U.S. trading partners. Base year is 2002.
Source: Federal Reserve Bank

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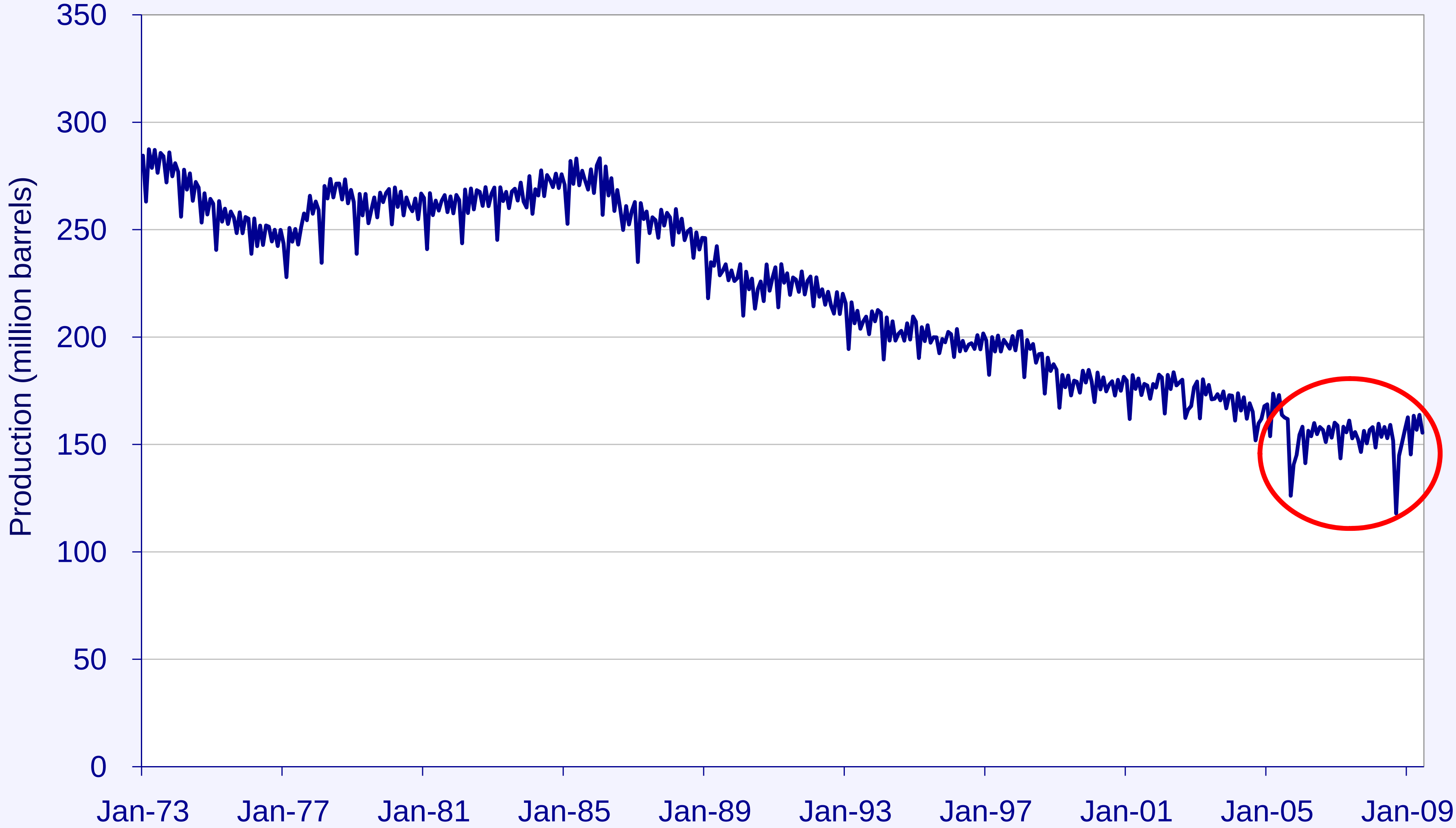
U.S. Crude Oil Production 1973 to June 2009

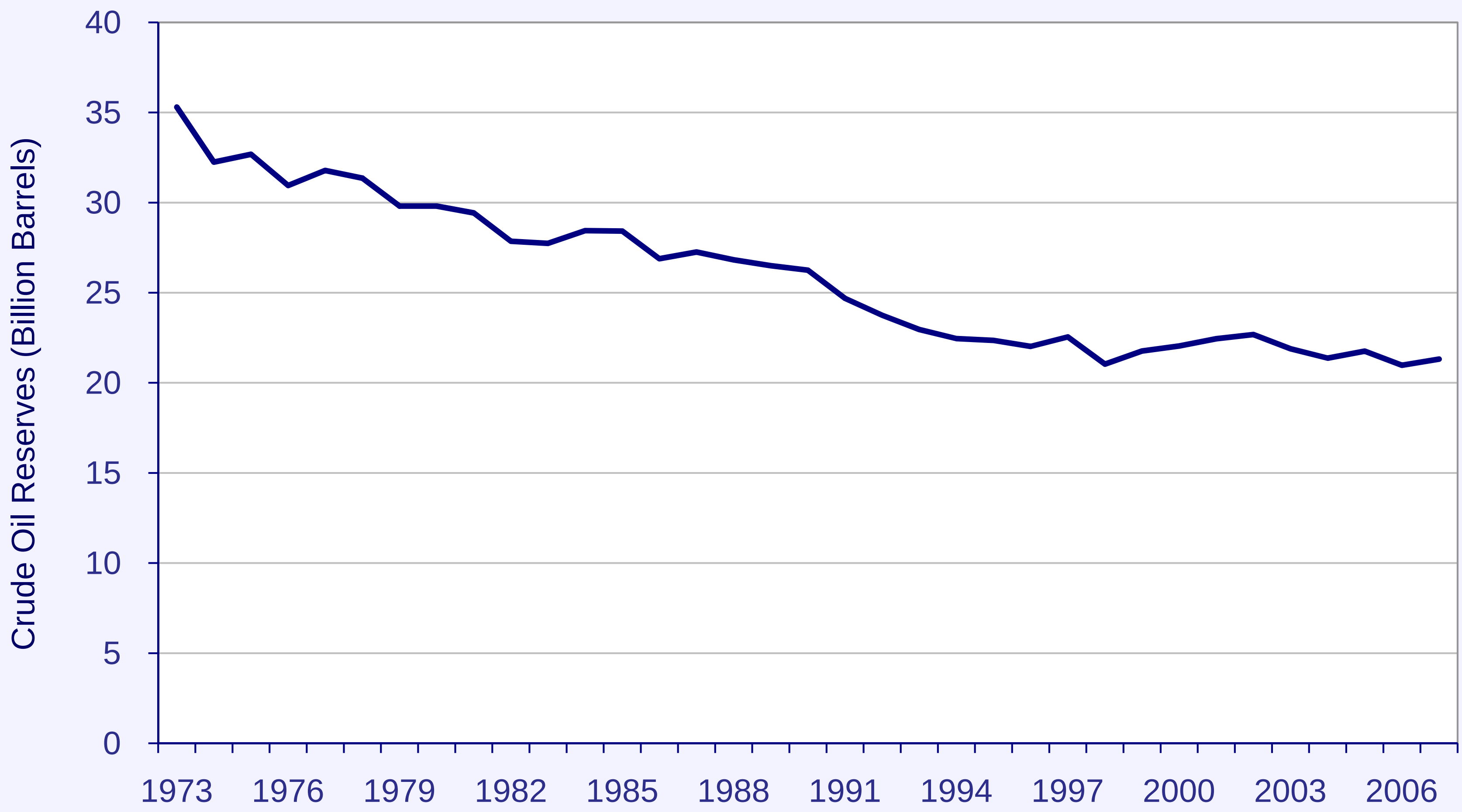
U.S. crude production, while down from its heyday, is reaching a plateau given EOR and deepwater GOM production.



Source: Energy Information Administration, Department of Energy

U.S. Crude Oil Proved Reserves 1973 to 2007

Reserves holding steady between 22 to 20 BBbls since 1992.



Source: Energy Information Administration, Department of Energy

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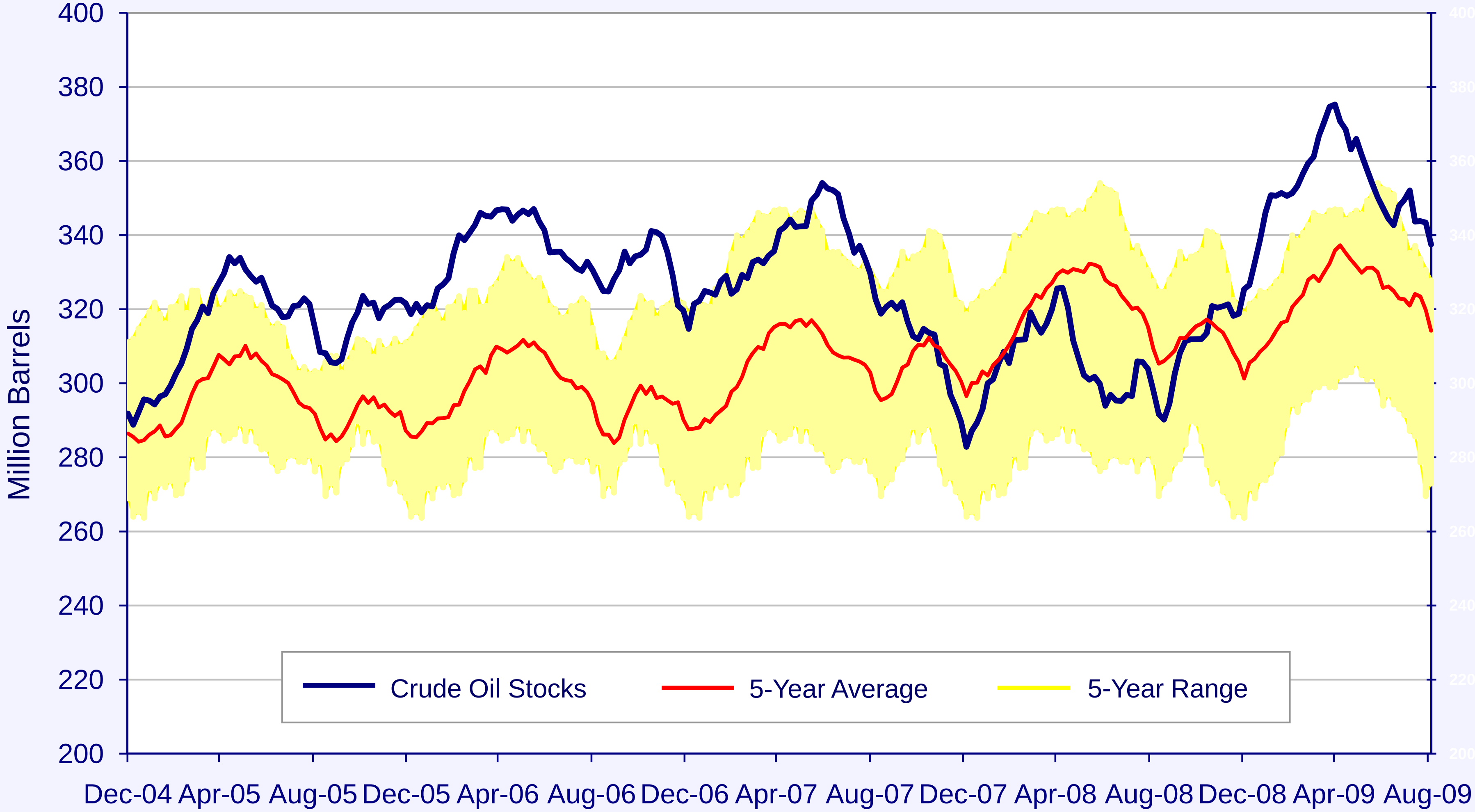
US Crude Oil Stocks

Stocks are much higher than historic norms.



Source: Energy Information Administration, Department of Energy.

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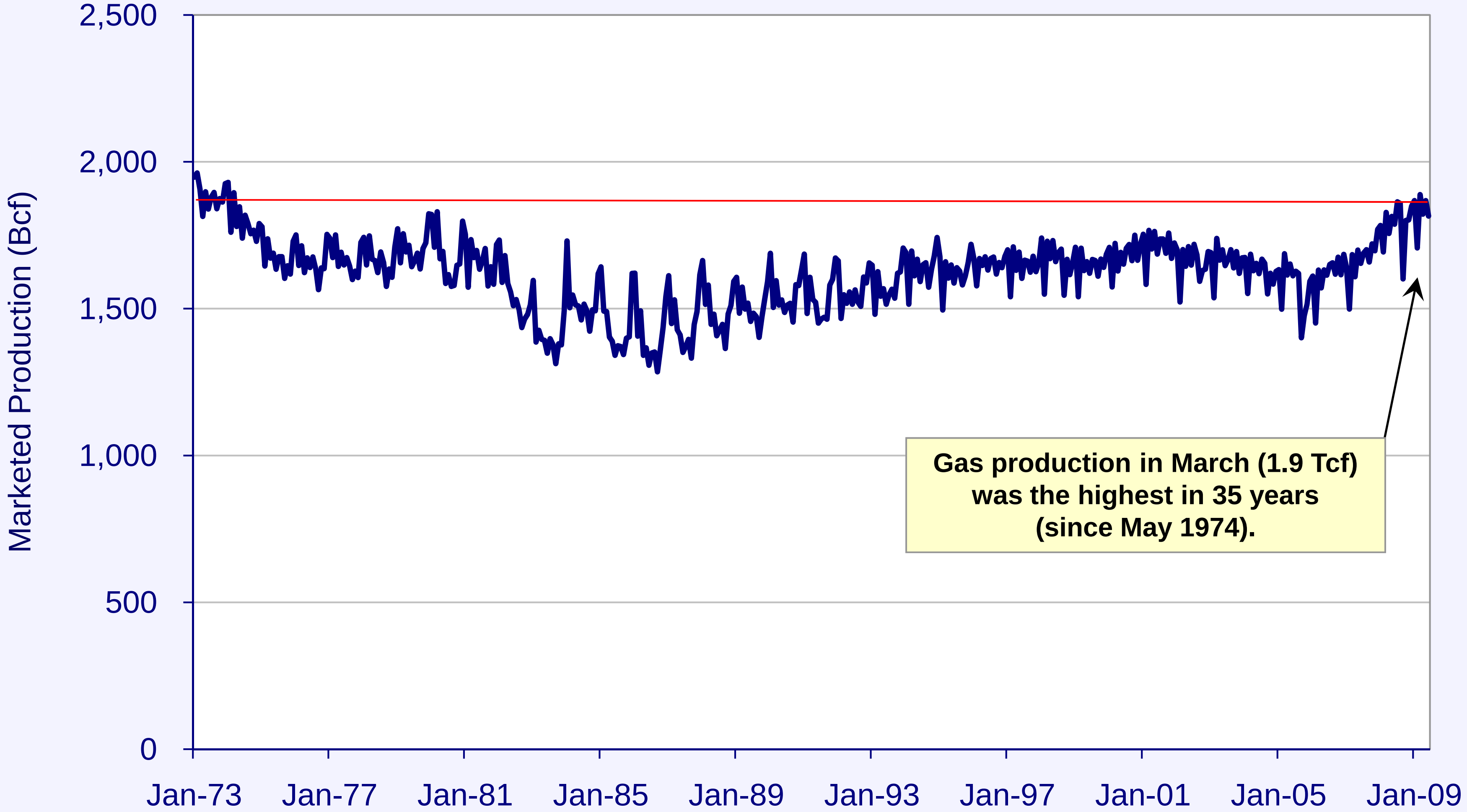
U.S. Natural Gas Production 1973 to 2008

Impressive natural gas production increases, driven by deepwater, and increasingly by unconventional resources.



Source: Energy Information Administration, Department of Energy

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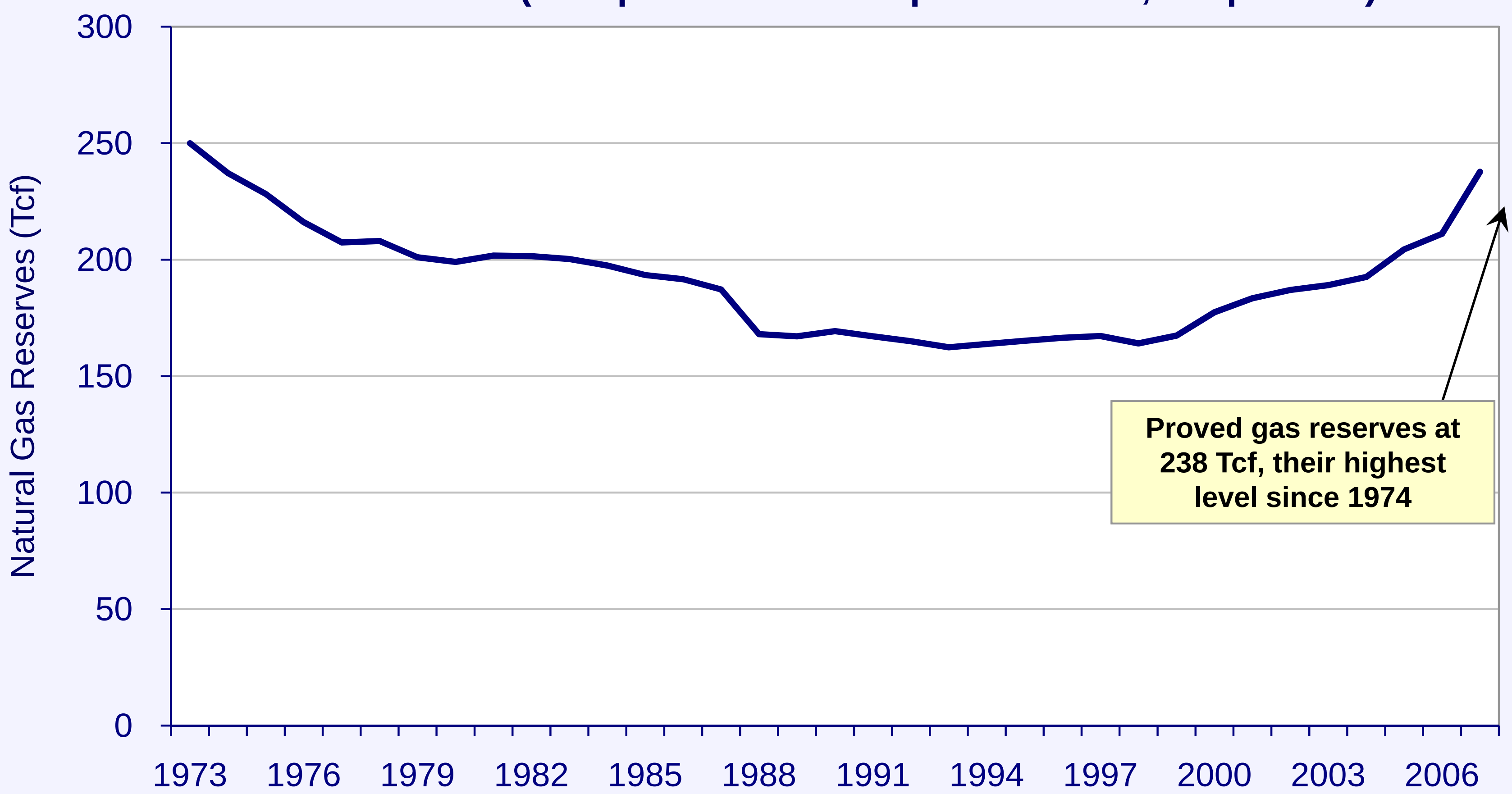
U.S. Dry Natural Gas Proved Reserves 1973 to 2007

2006-2007 reserves growth is the largest in over 30 years. Natural gas reserves have been increasing by almost 5 percent per year since 2000 (except 2004-2005 tropical season, 3.3 percent)



Source: Energy Information Administration, Department of Energy

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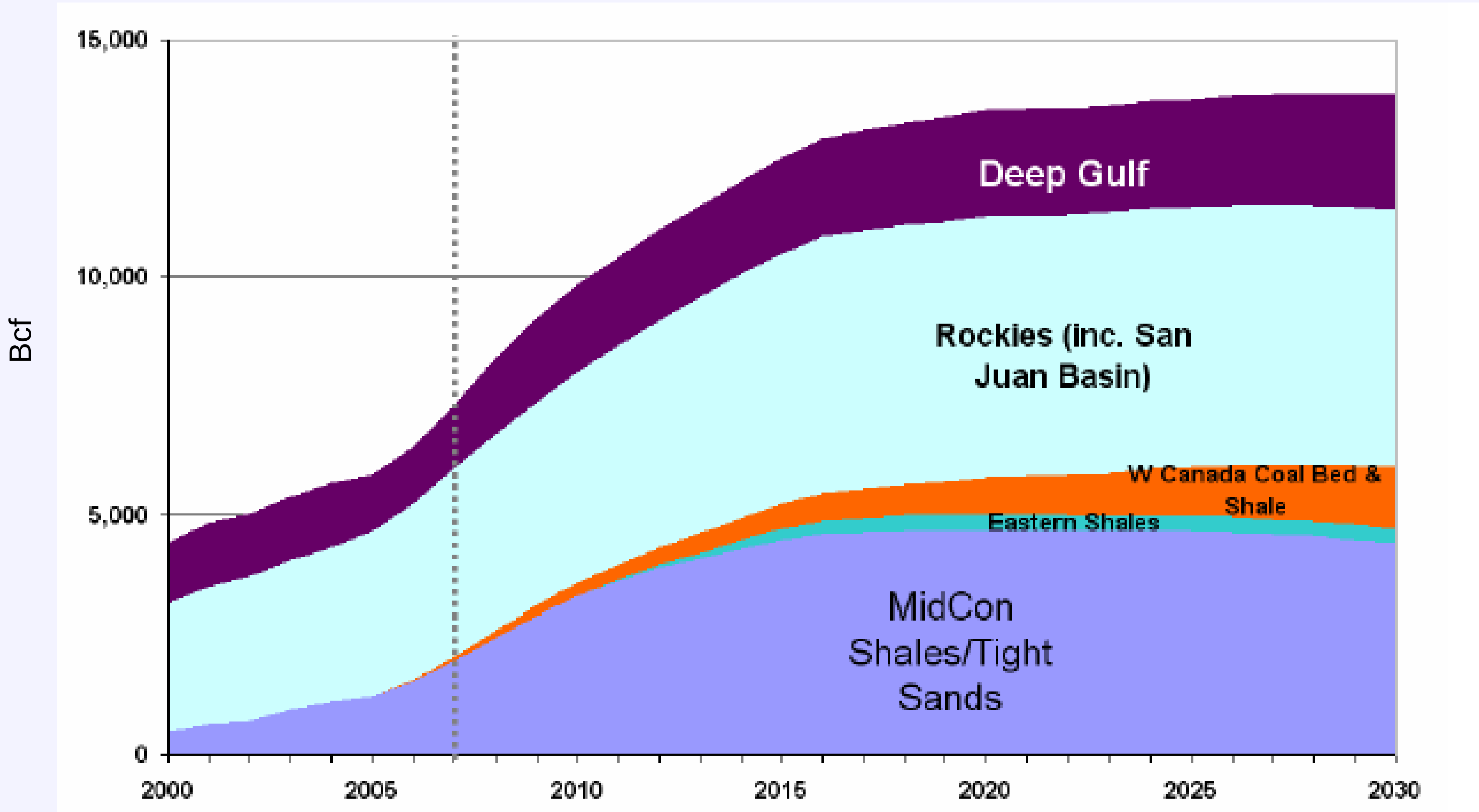
Unconventional Gas Production



Source: Energy Information Administration, US Department of Energy

Major Shale Gas Basins in U.S.

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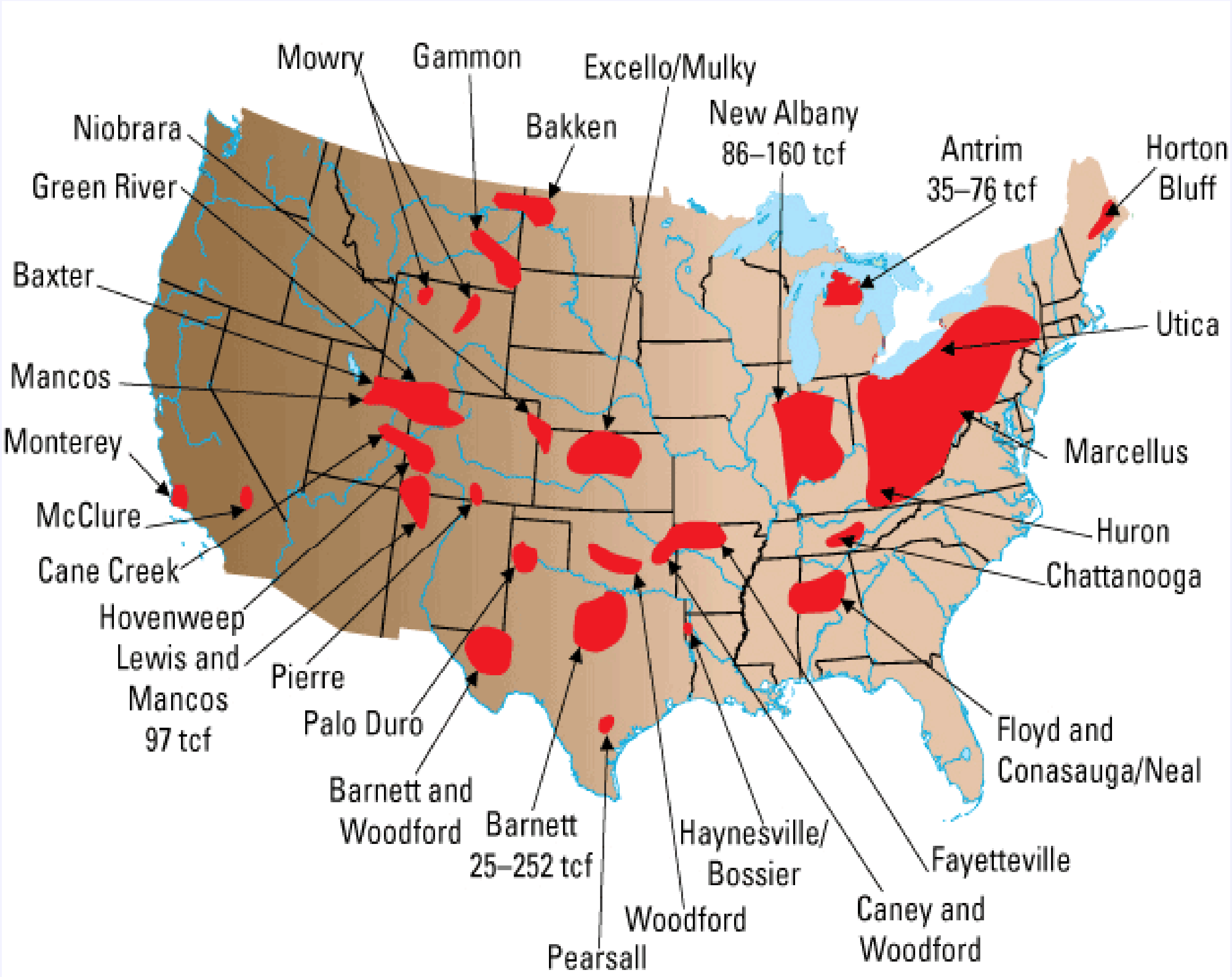

Total U.S. natural gas reserves are estimated to be between 1,500 to 1,680Tcf or between 80 to 88 years.

Shale reserves could account for 131 to 274 Tcf of these reserves.

Total reported reserves from producers as high 2,247 Tcf or 118 years.

Source: EnergyIndustryPhotos.com and Navigant Consulting, Inc.

US Gasoline Demand and Retail Pump Prices

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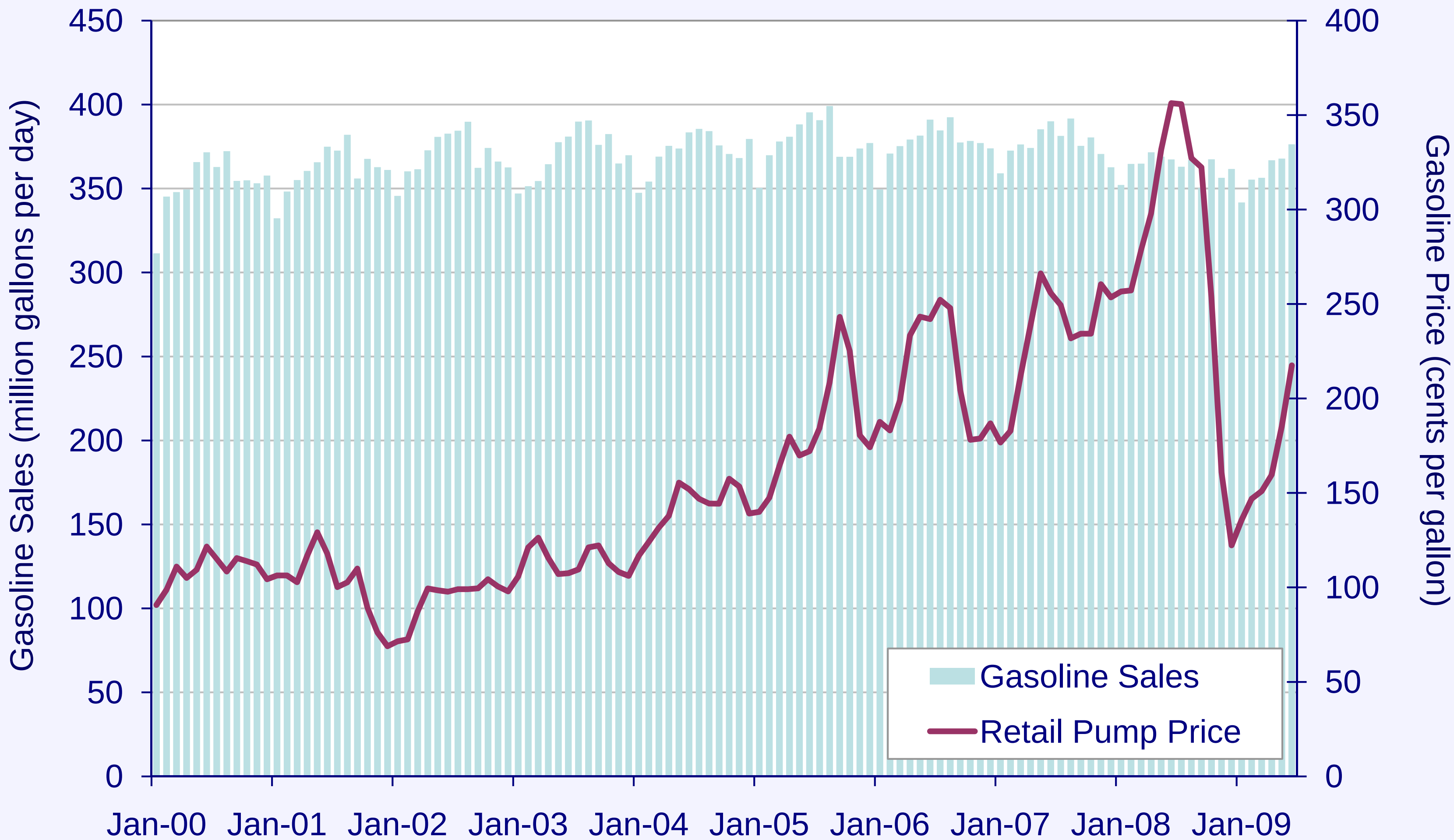
After long period of high prices, gasoline demand was starting to show some limited reductions in late 2008.



Source: Energy Information Administration, Department of Energy, retail prices without state and federal taxes

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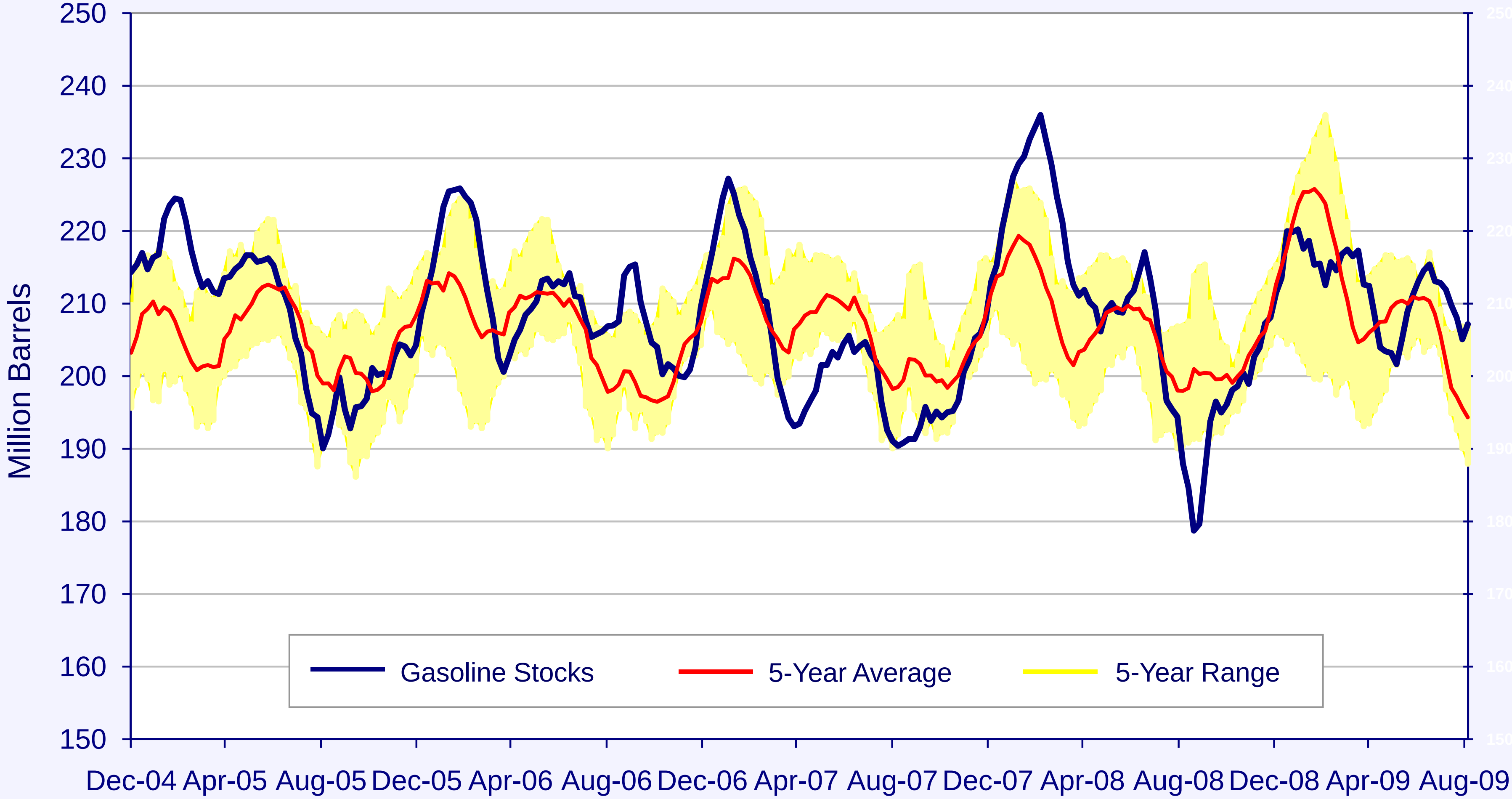
US Gasoline Stocks and Days of Supply

Low stocks help drive up prices in 2007, but a moderate recovery started in 2008.



Source: Energy Information Administration, Department of Energy.

Market Disruption

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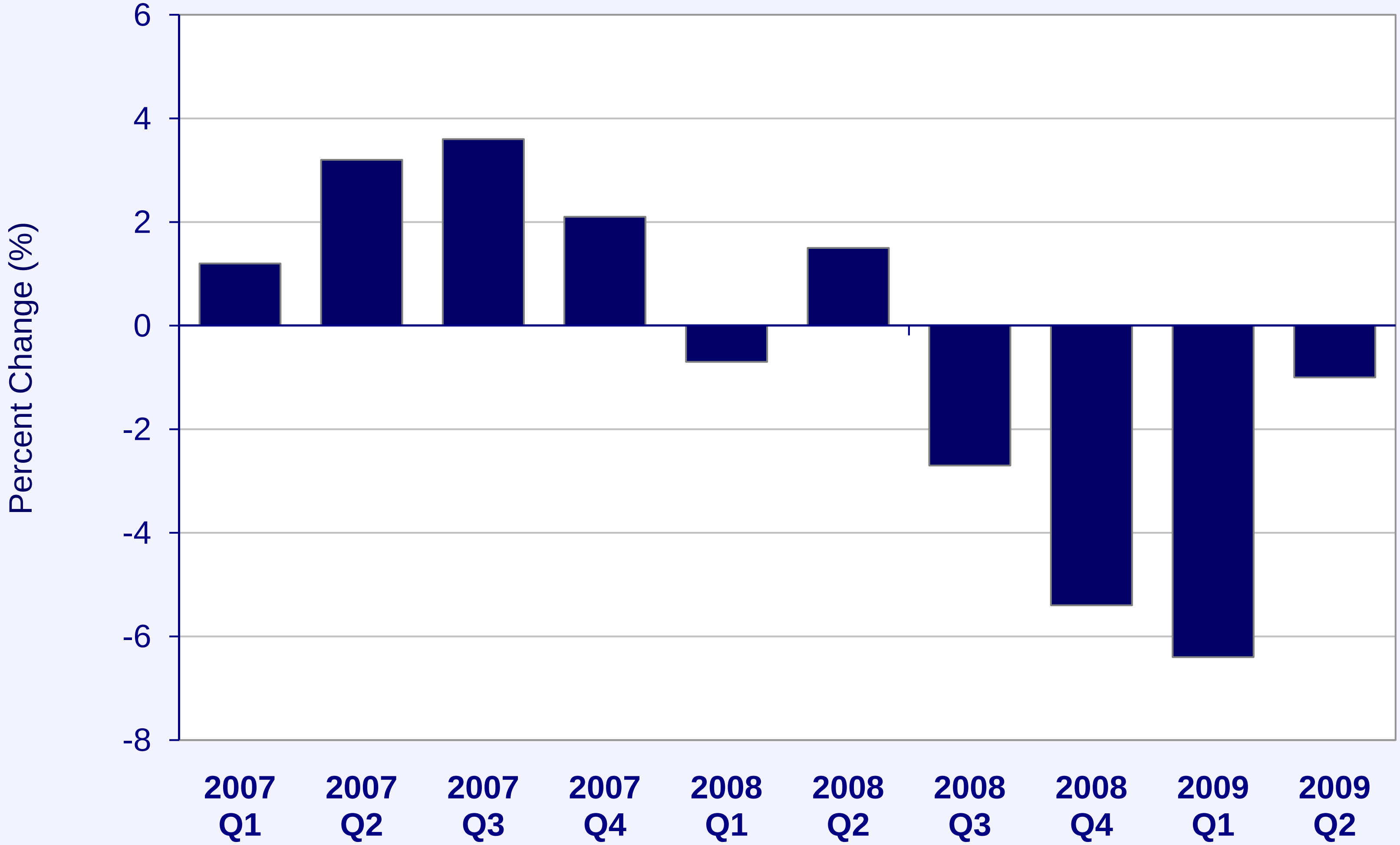
Percent Change in Quarterly GDP

U.S. economy has been significantly challenged since late 2007, and has technically been in recession since the beginning of 2008.



Source: Bureau of Economic Analysis, U.S. Department of Commerce.

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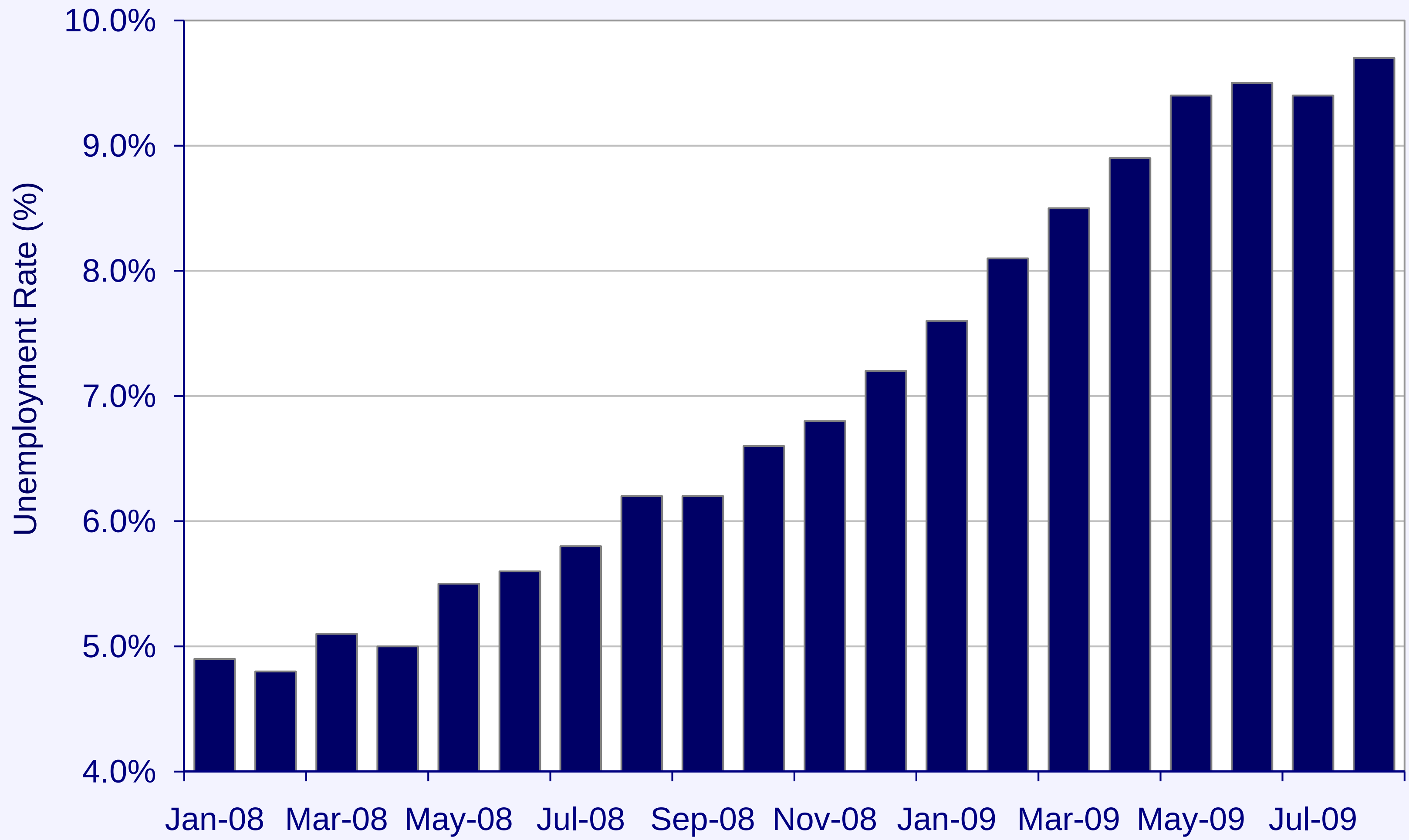
Unemployment Rate

The real metric of the contraction is seen in rapidly growing unemployment rates.



Source: Bureau Labor Statistics, U.S. Department of Labor.

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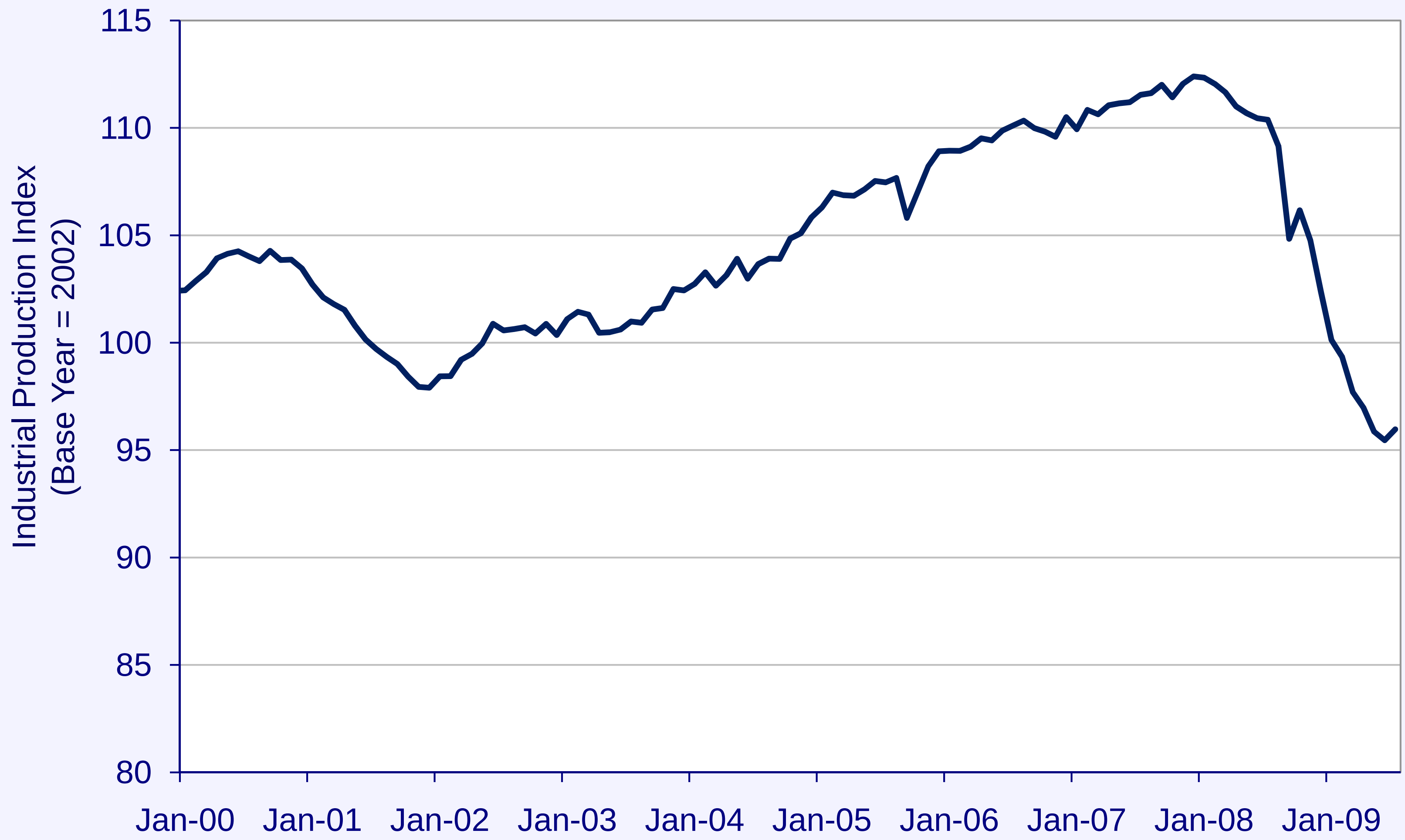
Industrial Production Index

Industrial production has fallen to some of its worst levels on record.



Source: Federal Reserve Bank

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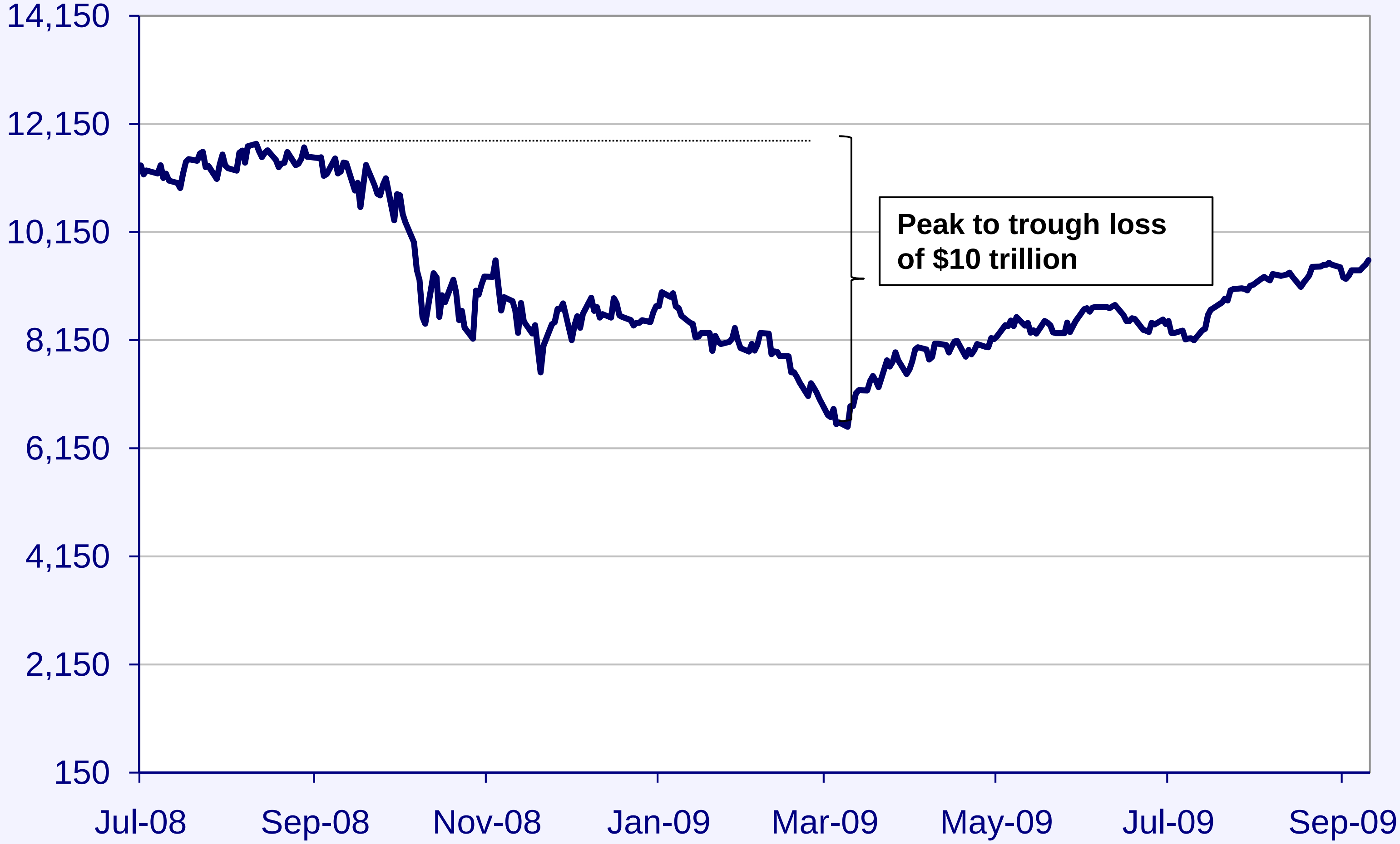
Dow Jones Industrial Average

The Dow Jones Industrial Average has lost over $10 trillion in market capitalization (peak to trough) since the nominal highs of 2007.



Source: Google Financial

Public Policy Reaction

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Historic Presidential Election Returns

Large margin in popular vote translated by many as mandate for change in policies – including energy.

	Democrat		Republican		Other	
	Popular	Electoral	Popular	Electoral	Popular	Electoral
	----- (%) -----		----- (%) -----		----- (%) -----	
1980	42.4%	9.1%	51.0%	90.9%	6.6%	0.0%
1984	40.8%	2.4%	59.2%	97.6%	n.a.	n.a.
1988	46.1%	20.7%	53.9%	79.3%	n.a.	n.a.
1992	43.3%	68.8%	37.7%	31.2%	19.0%	0.0%
1996	50.1%	70.4%	41.4%	29.6%	8.5%	0.0%
2000	48.9%	49.5%	48.4%	50.5%	2.8%	0.0%
2004	48.8%	46.7%	51.2%	53.3%	n.a.	n.a.
2008	53.4%	67.8%	46.6%	32.2%	n.a.	n.a.

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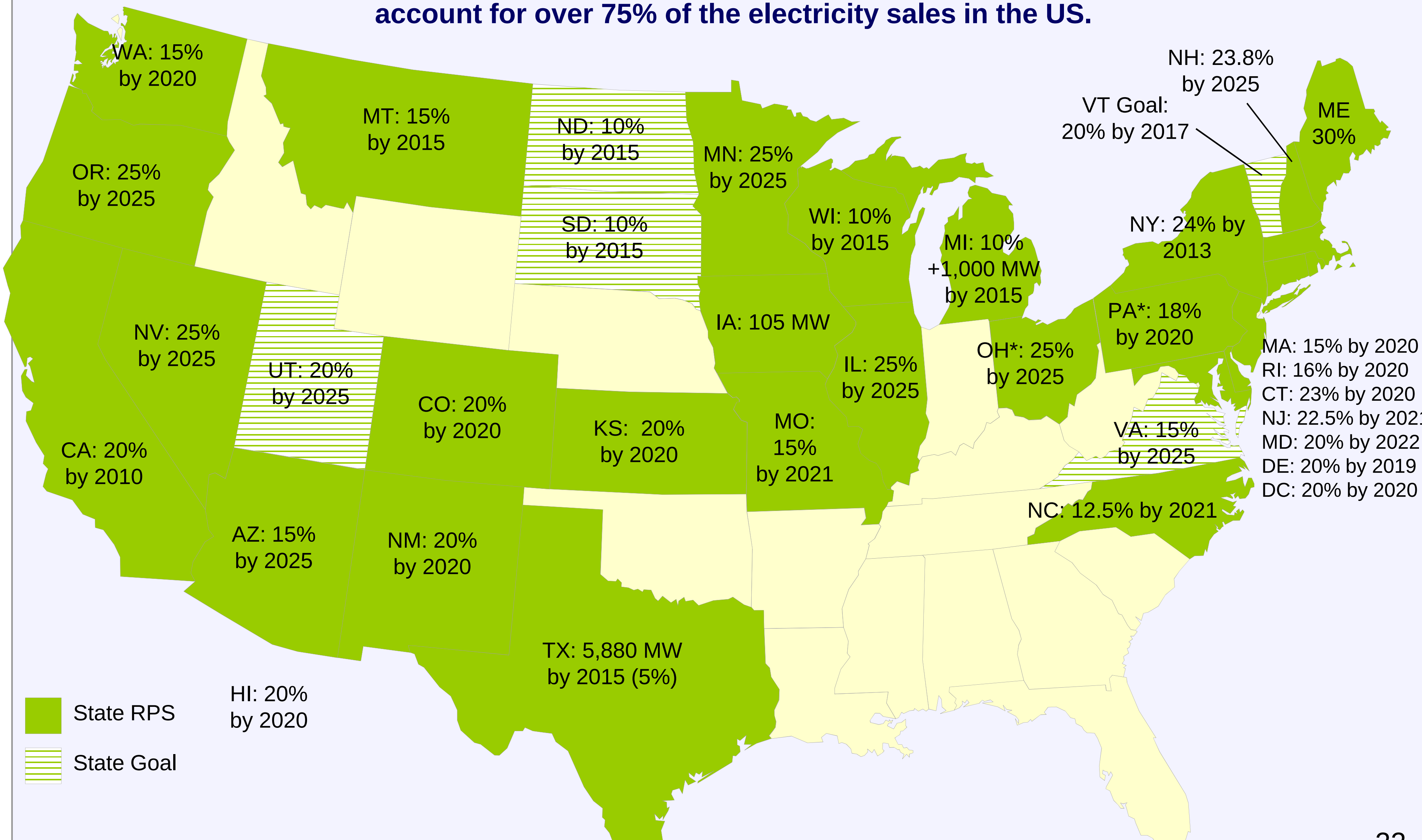
States with Renewable Portfolio Standards

Currently there are 34 states that have RPS policies in place. Together these states account for over 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.

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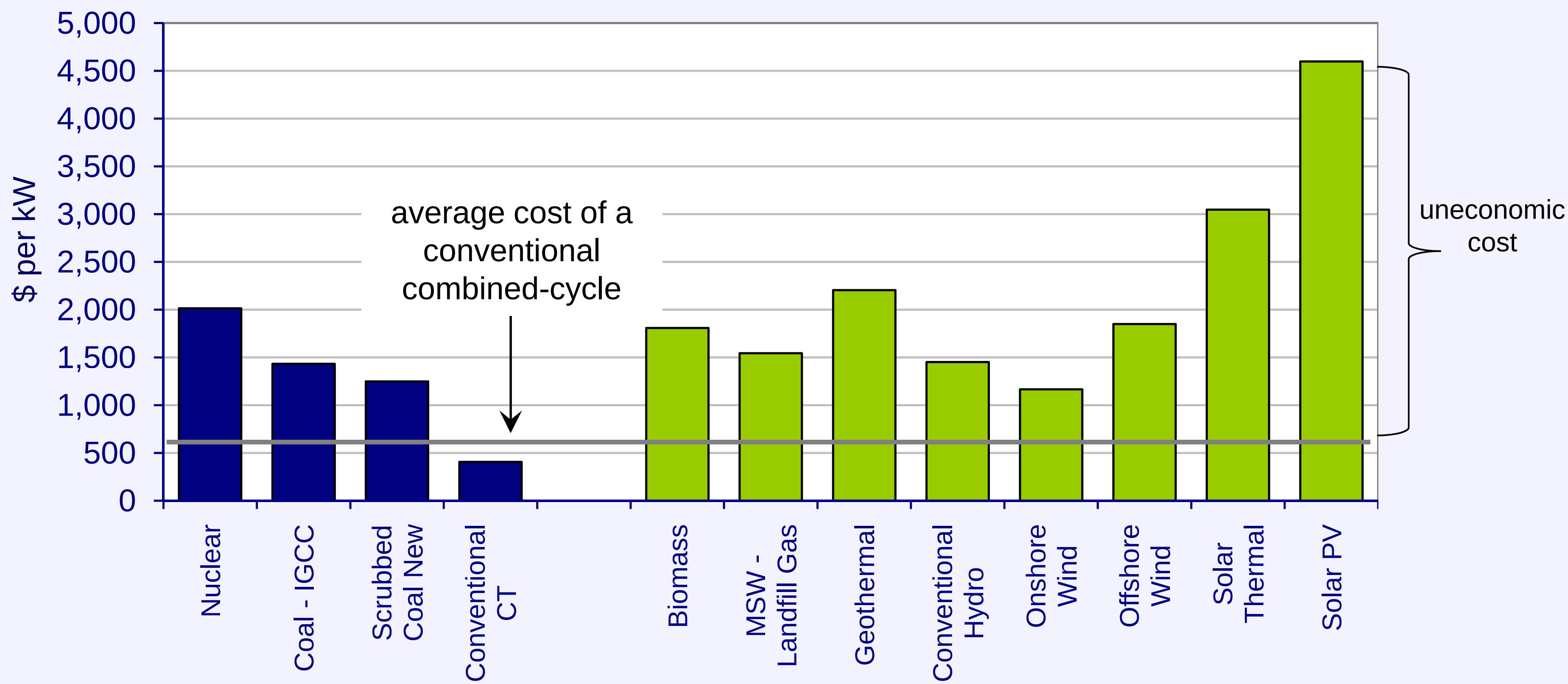
Total Overnight Cost for New Plants

Resources are typically uneconomic without additional support



These differentials will have to be recovered from various funding sources

Source: Assumptions to the Annual Energy Outlook 2006

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Energy Efficiency Resource Standards

ID: Energy Plan sets conservation – DR and EE as priority resources

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

OR: IOU 2008 goals 34 MW; administered by Energy Trust OR

CA: 8% energy savings; 4,885 MW peak reduction by 2013 (from '04)

NV: EE up to 25% of RPS: ~5% electric reduction by 2015

UT: EE earns incentive credits in RE goal

CO:11.5% energy savings by 2020 ~ 3,669 GWh (from '08)

NM: 10% retail electric sales savings by 2020 (from '05)

NE: Interim Energy Plan stresses multi-sector EE improvements

KS: Voluntary utility programs

OK: PSC approved quick-start DR utility EE and DR programs

TX: 20% of load growth by 2010, using average growth rate of prior 5 years

HI: 30% electricity reduction: ~4,300 GWh by 2030 (from '09)

MI: 1% annual energy savings from prior year's sales

MN: 1.5% annual savings based on prior 3-years average, to 2015

IA: 5.4% energy savings by 2020 ~ 1.5% annual

WI: RPS requires utility EE

IL: reduce energy use 2% by 2015 and peak 0.1% from prior year

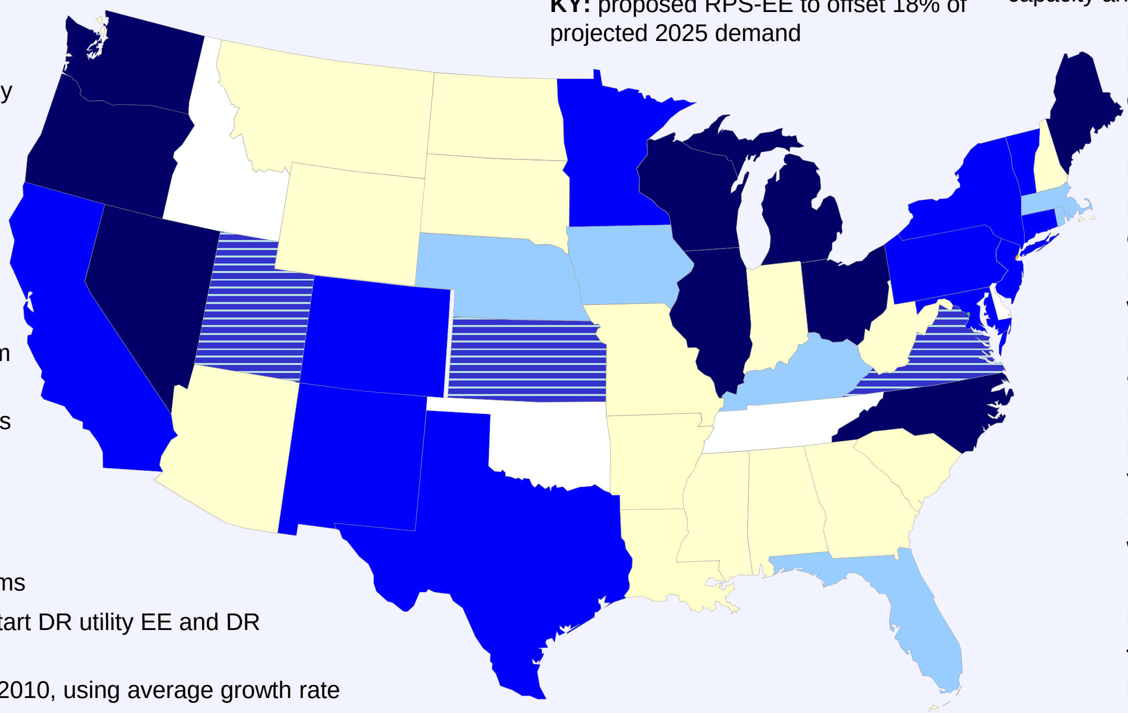
OH: 22% energy savings by 2025 (from '09); reduce peak 8% by 2018

KY: proposed RPS-EE to offset 18% of projected 2025 demand

ME: 30% energy savings; 100 MW peak electric reduction by 2020

VT: 11% energy reductions by 2011 (2% annual) administered by Efficiency VT

MA: 25% of electric load from DSR, EE by 2020: capacity and energy



NY: reduce electric use 15% by 2015 from levels projected in 2008

CT:4% energy savings (1.5% annual) and 10% peak reduction by 2010 (from '07)

RI: reduce 10% of 2006 sales by 2022

NJ: BPU proceeding to reduce consumption, peak

DE: Sustainable Energy Utility charged with 30% energy reduction by 2015

PA: reduce use 3%; peak 4.5% by 2013 as % of 2009-10 sales

MD: reduce per capita electricity use and peak by 2015 (from '07)

VA: reduce electric use 10% by 2022 (from '06)

WV: EE & DR earn one credit for each MWh conserved in the 25% by 2025

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

TVA: reduce energy use 25% and cut peak 1,400 MW by 2012 (from '08)

- EE only as part of an RPS law, rule or goal
- EERS by regulation or law (stand-alone)
- Voluntary standards (in or out of RPS)
- EE goal proposed/being studied
- Other EE or DSM rule or goal

Source: Federal Energy Regulatory Commission

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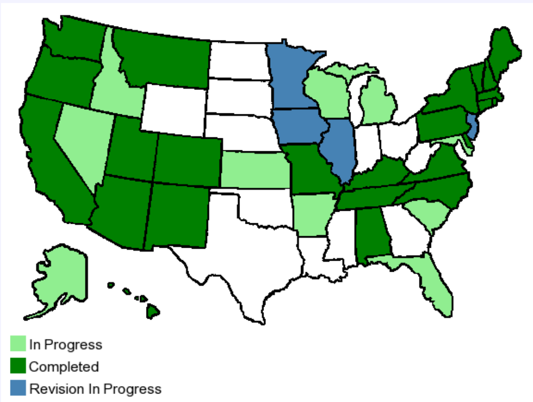
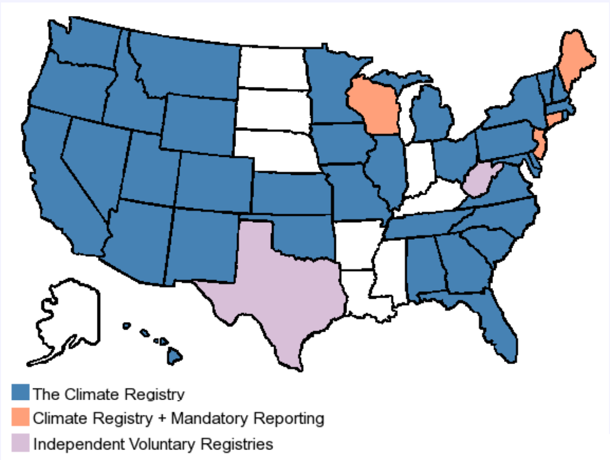
State Initiatives on Climate Change Policies & Activities

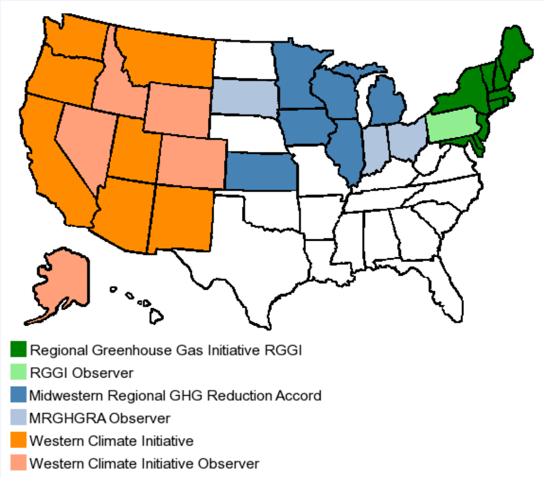
States with Climate Plans

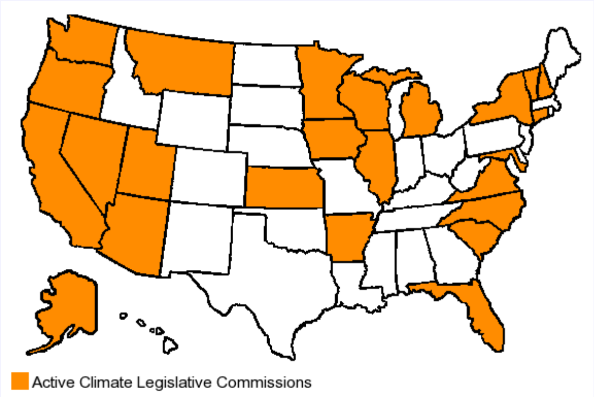


States with GHG Registries

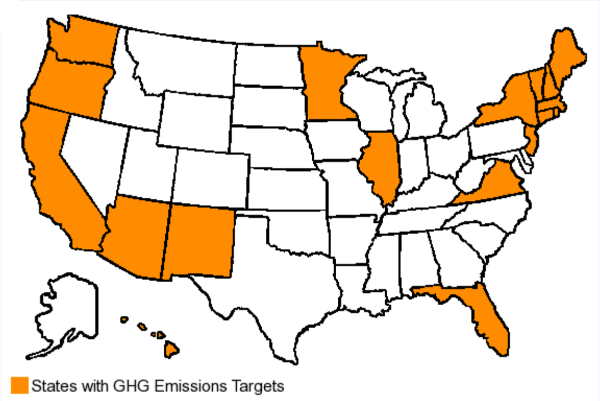


Regional Initiatives





States with Climate Policy Groups



States with GHG Emissions Targets

Source: Pew Center on Global Climate Change

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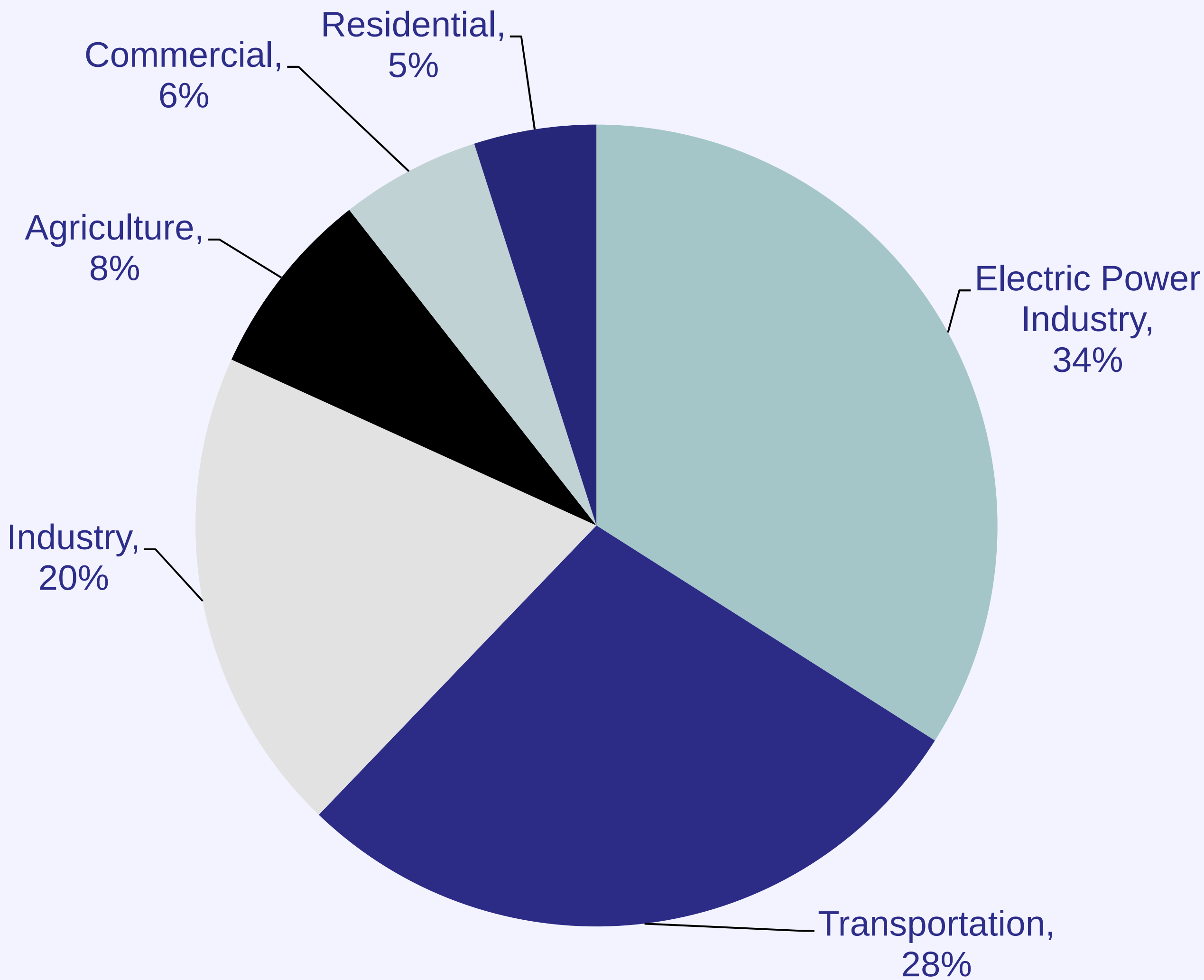
U.S. Greenhouse Gas Emissions Allocated to Economic Sector (Tg CO_2 Eq.)



Source: U.S. Environmental Protection Agency

Different Policy Frameworks

Policy Type	Definition
Carbon Tax	Places a fixed tax on end-user energy usage.
Cap and Trade (Downstream, Emissions Type)	Would require certain emitting sectors to acquire emission credits for fuel burned in production processes.
Standards	Would change the efficiency (emissions) standards of appliances, motors, equipment, automobiles, etc.

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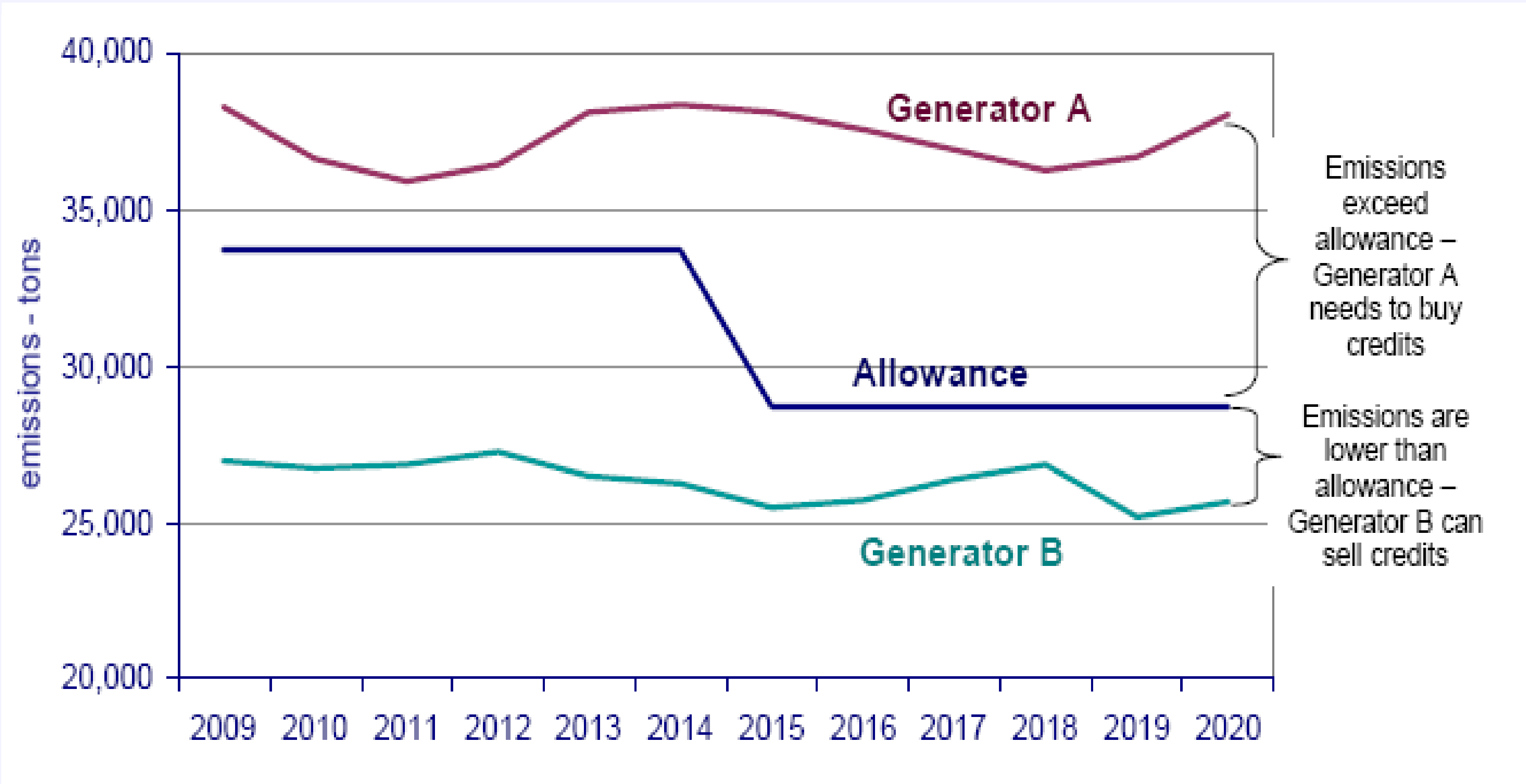
How Does Cap & Trade Work?

Simply speaking, sources "long" on credits will trade with those that are "short."



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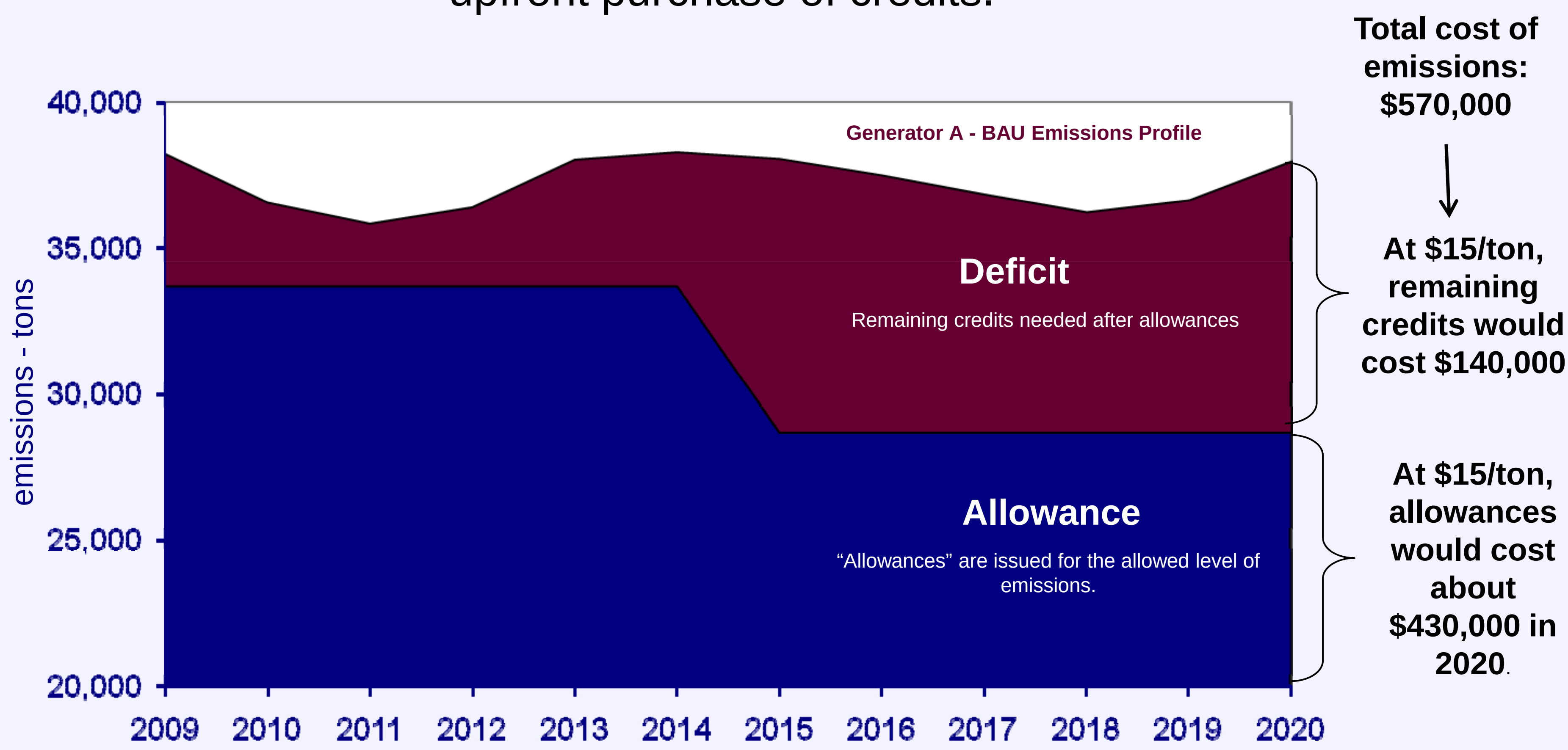
Auction Versus Allowance

An auction system is more expensive because it requires a larger upfront purchase of credits.



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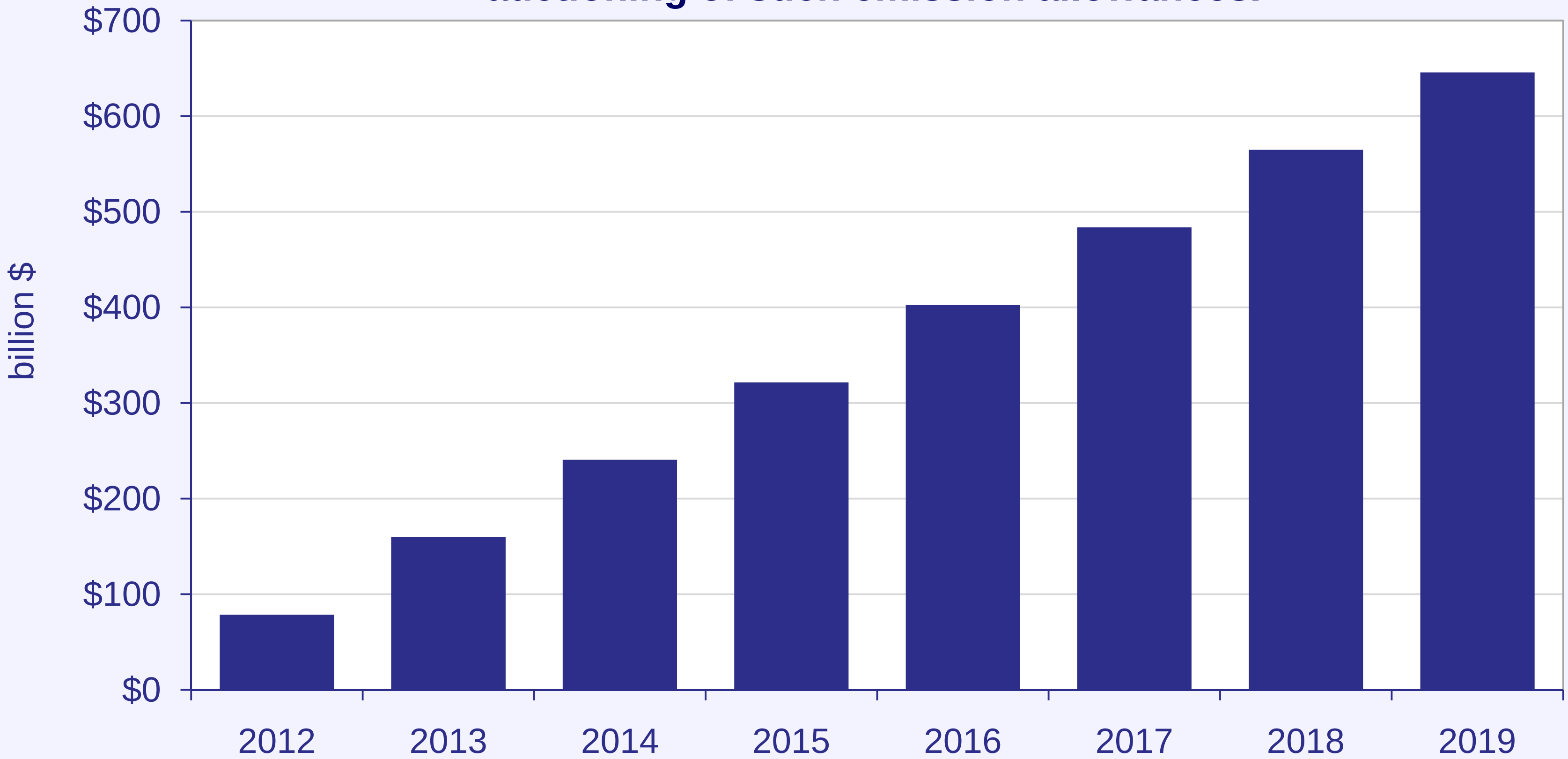
Revenue Projections in Budget for Cap and Trade

The Obama budget assumes that by 2012, the Treasury will collect $78.6 billion in new revenue from carbon emissions permits. From 2012 to 2019, it envisions that a total of $645.7 billion would be raised from auctioning of such emission allowances.



New Changes in Natural Gas and Oil Taxes

The IPAA estimates that taken together, these tax changes would strip over $30 billion from US natural gas and oil production investment.

Intangible Drilling and Development Costs (IDC) – Tax treatment designed to attract capital to natural gas and oil production. Eliminating this option would remove $3 billion that would have otherwise been invested in new U.S. production.

Percentage Depletion – Provides capital for independents and is important for marginal well operators. Removal is estimated to cost $8 billion in investment.

Geological and Geophysical (G&G) Amortization – Early recovery of G&G costs allows for more investment in finding new resources. Extending the amortization period would remove over $1 billion from efforts to find and develop new U.S. production.

Marginal Well Tax Credit – Countercyclical tax credit that creates a safety net for marginal wells during periods of low prices. Enacted in 2004, the marginal well tax credit has not been needed, but it remains a key element of support for U.S. production.

Enhanced Oil Recovery (EOR) Tax Credit – Designed to encourage oil production using technologies that are required after a well passes through its initial phase of production. Currently, the oil price threshold for the EOR tax credit has been exceeded and the oil value is considered adequate to justify EOR efforts. But, at lower prices EOR becomes uneconomic and these costly wells would be shutdown.

Manufacturing Tax Deduction – Another tax provision that provides capital to U.S. independent producers to invest in new production.

Excise Tax on GOM Production – Creating a new tax designed to add a $5 billion burden on U.S. offshore development will drive producers from the GOM, reducing new U.S. production of natural gas and oil.

Passive Loss Exception for Working Interests in Oil and Gas Properties – If, in the future, income/loss arising from the ownership of oil and natural gas working interests, is treated as passive income/loss, the primary reason for individuals to invest in oil and gas working interests would be significantly diminished.

Conclusions

Conclusions

- Other things equal, the next year should have been optimistic in outlook. On track to attain the "balanced energy development" that encompassed the electoral hyperbole.
- Policy is taking a turn that will be potentially punitive to oil and gas drilling and production, as well as coal mining and production. (renewables are in, minerals are out – "over incented")
- Very likely the outlook could look similar to the 1980s where it took over a decade for the industry to recover. The real key is the extent of power and industrial demand.
- Even if the economy recovers, there will overhang of costly new investments for renewables and climate change that will work like an anchor if set too high. The lower natural gas prices, the higher these uneconomic commitments.

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Questions, Comments, & Discussion

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