



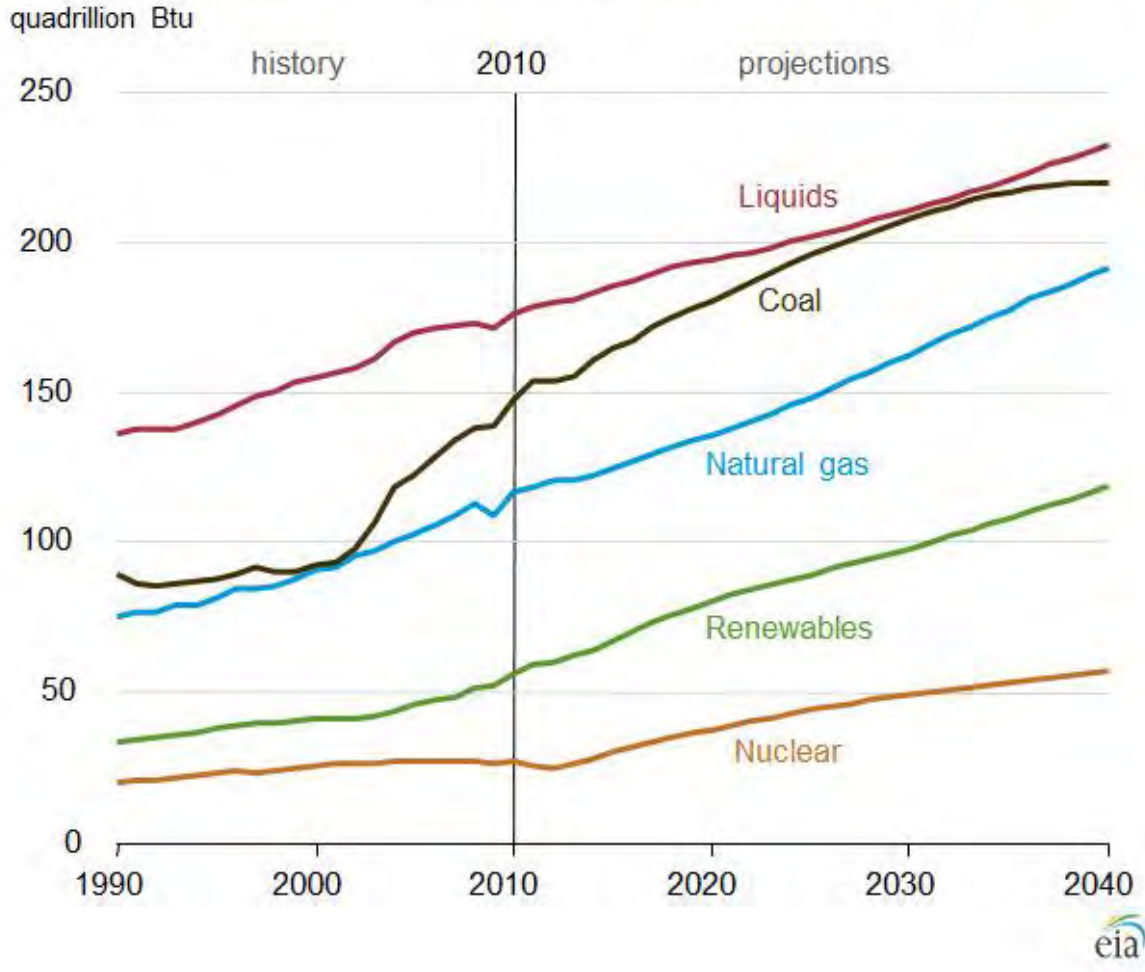
Southern States Energy Board

Karen A. Harbert



Global Energy Demand

Figure 2. World energy consumption by fuel type, 1990-2040



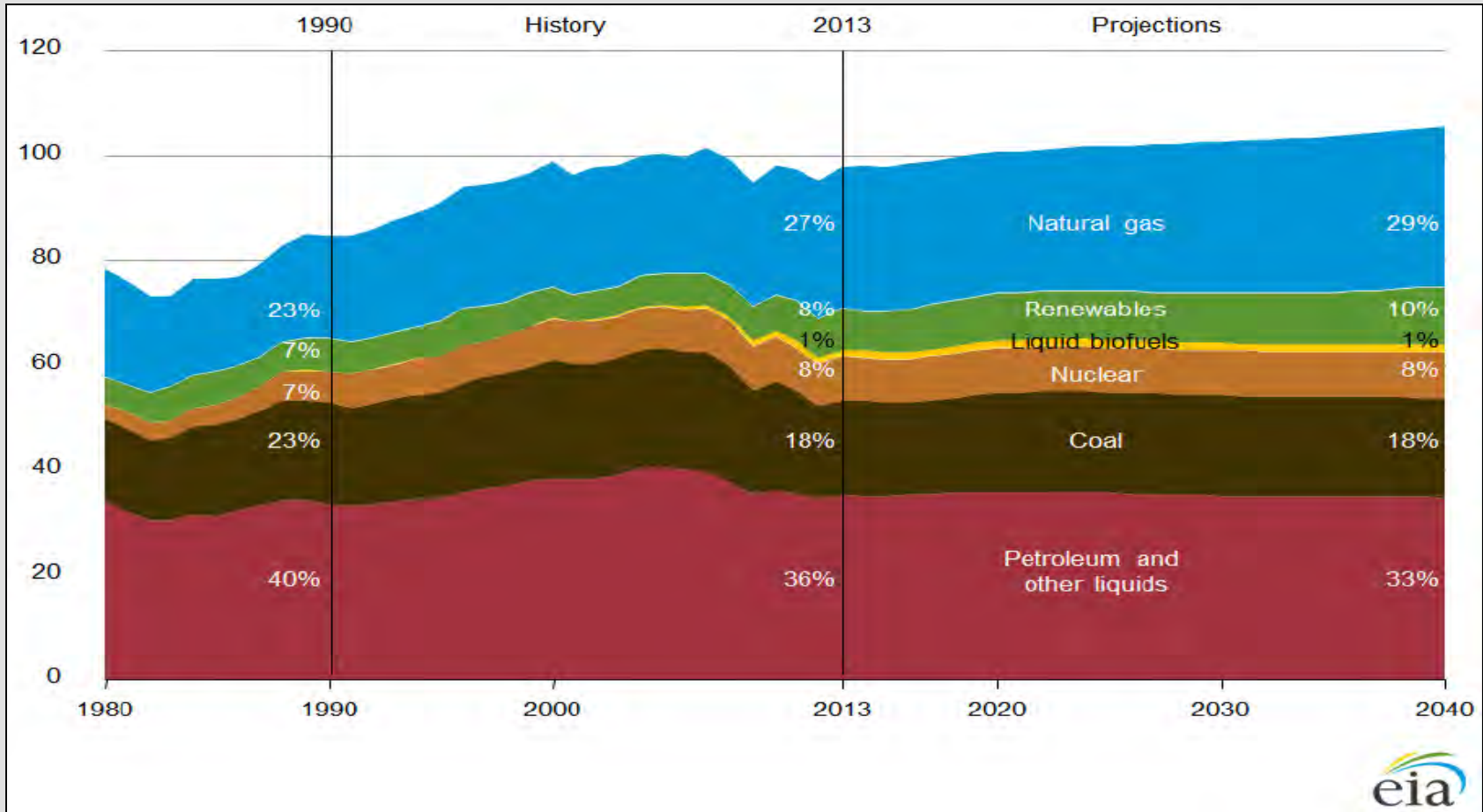


From Scarcity to Abundance



Future U.S. Energy Demand

● U.S Energy Demand Increases 9% through 2040

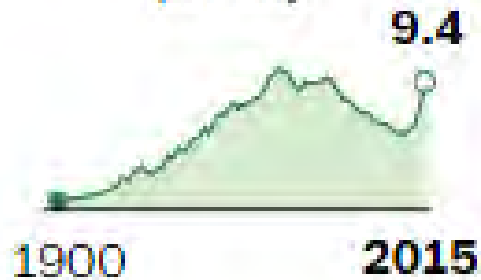




National

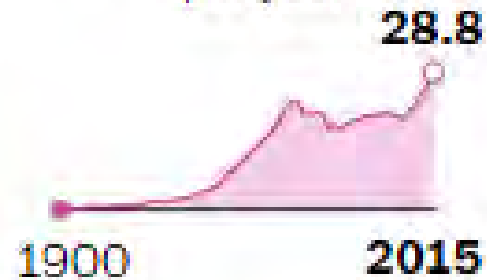
Oil production

million barrels
per day



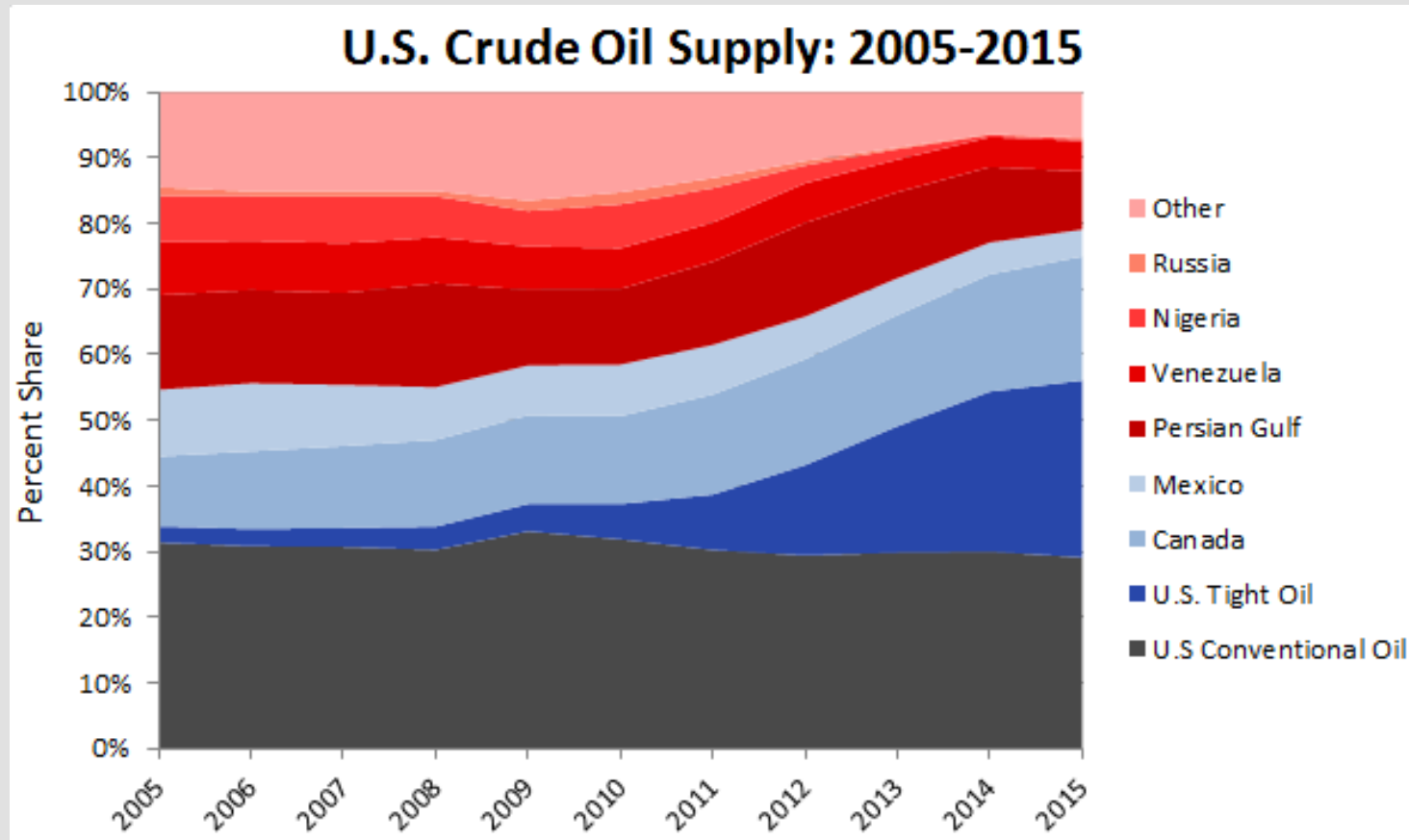
Gas production

trillion cubic feet
per year





Energy Security Rapidly Increasing

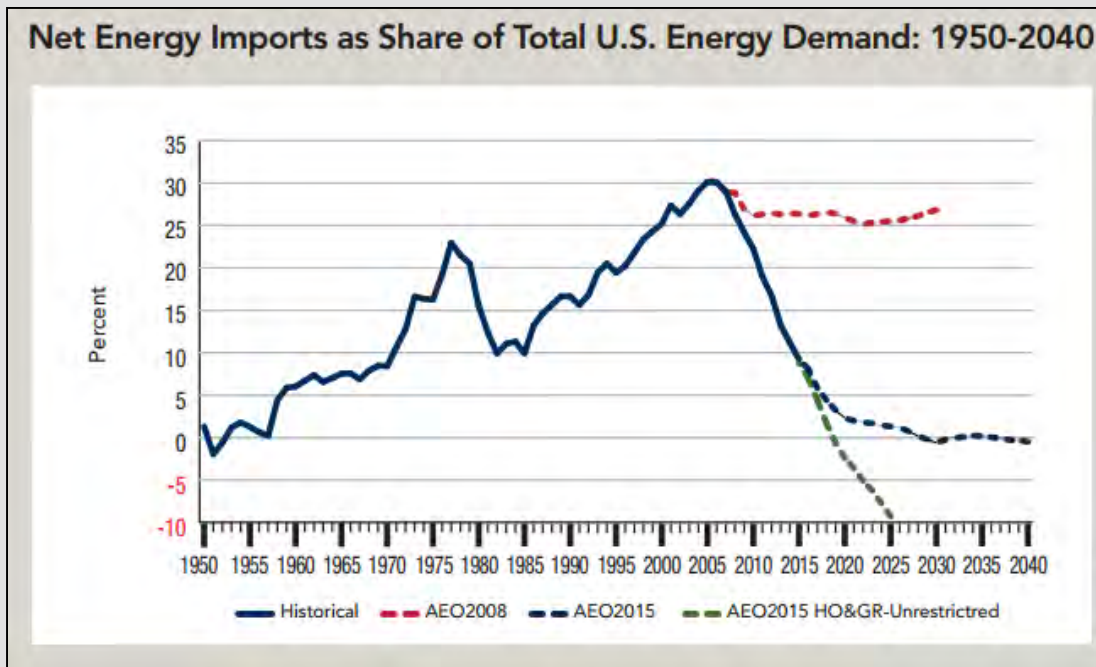


Source: Energy Information Administration



Energy Independence Soon to be Reality

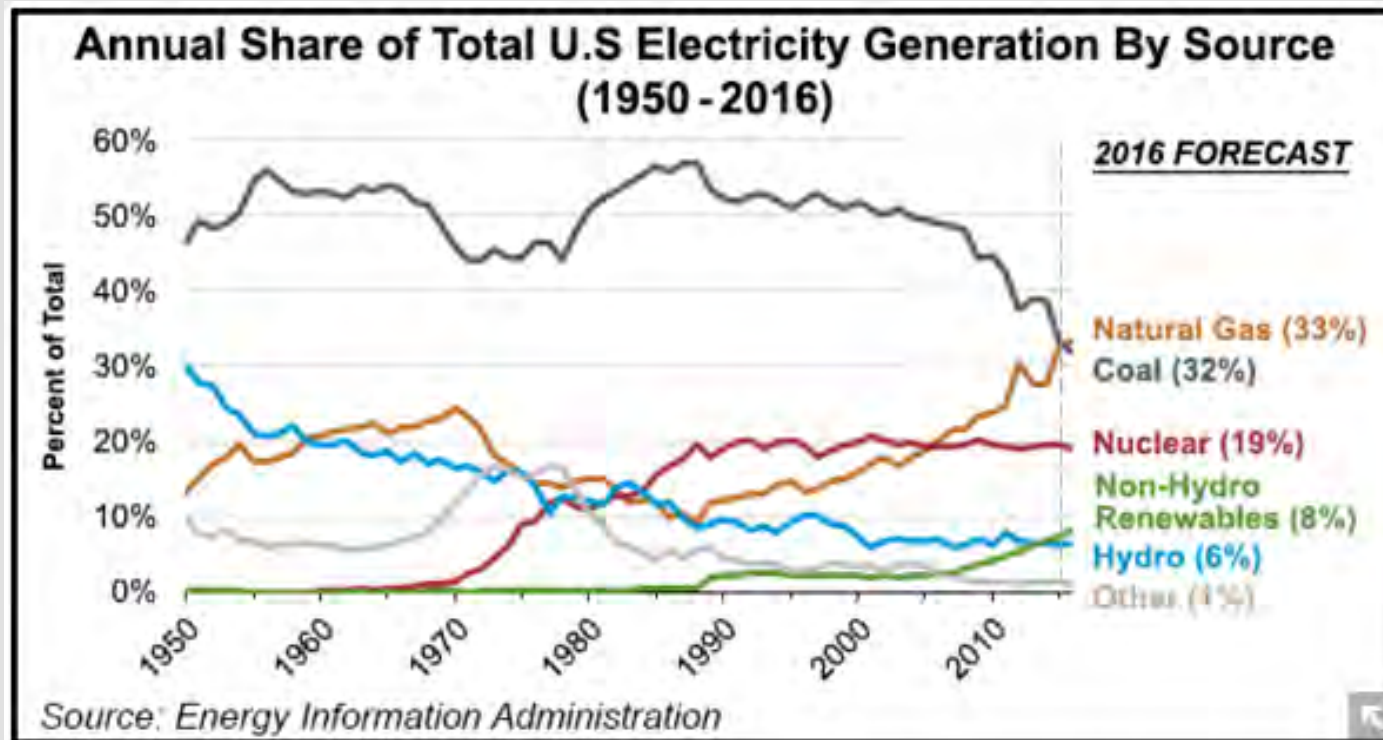
- U.S. net oil imports are now at their lowest level since 2005
- Net imports represent just 27 percent of U.S. petroleum demand—the lowest share since the mid-1980s.





Gas Demand Growth: Electricity

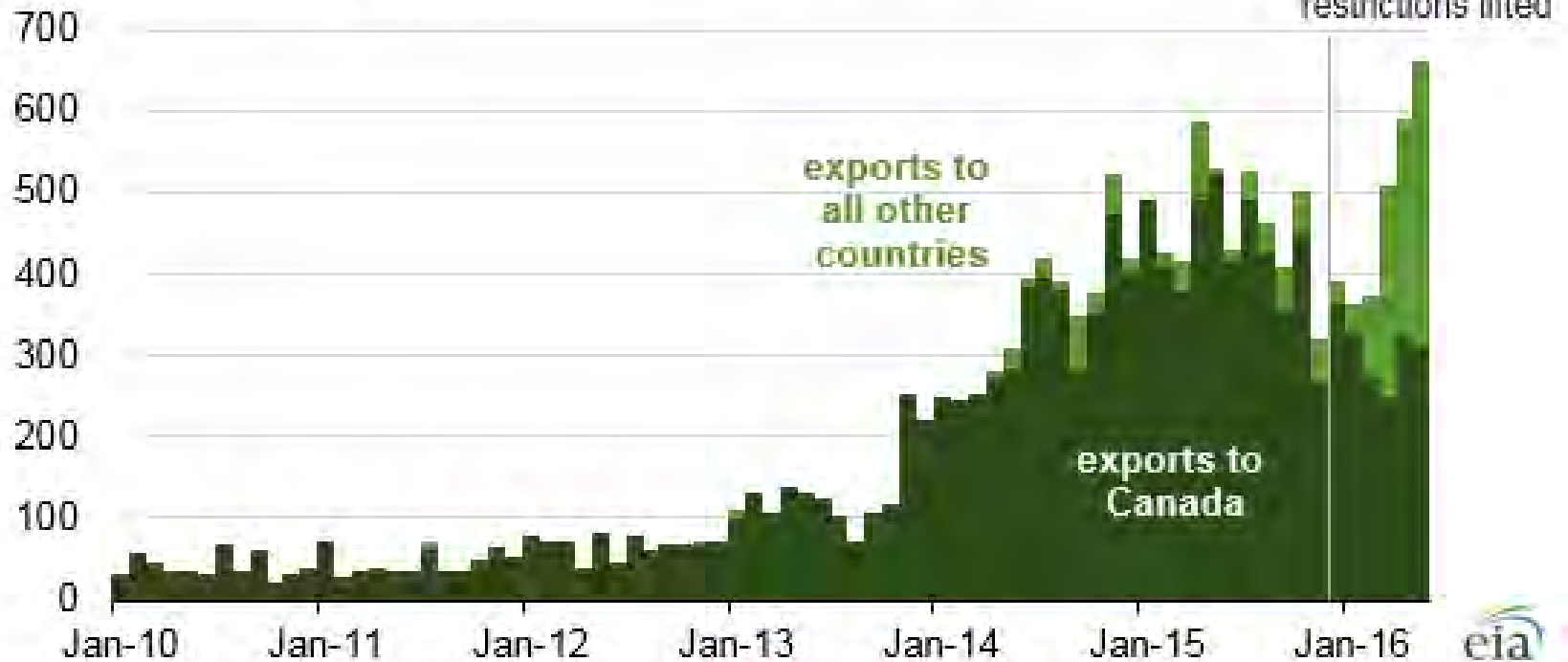
- 2016 is projected to be first year where natural gas is leading source of electricity generation





Oil Exports on the Rise

Monthly U.S. exports of crude oil (Jan 2010 - May 2016)
thousand barrels per day

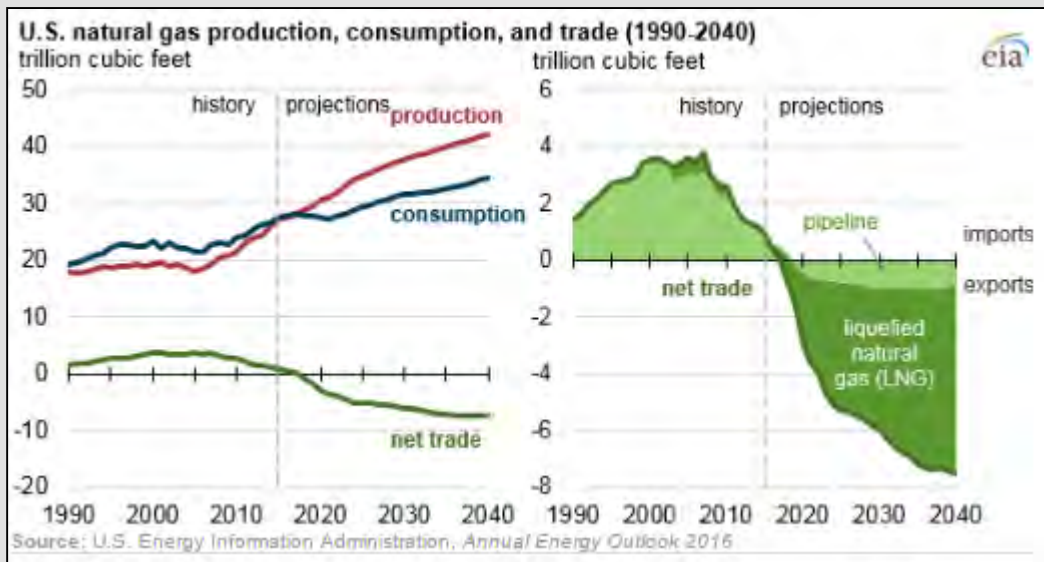


Source: U.S. Energy Information Administration, *Petroleum Supply Monthly*



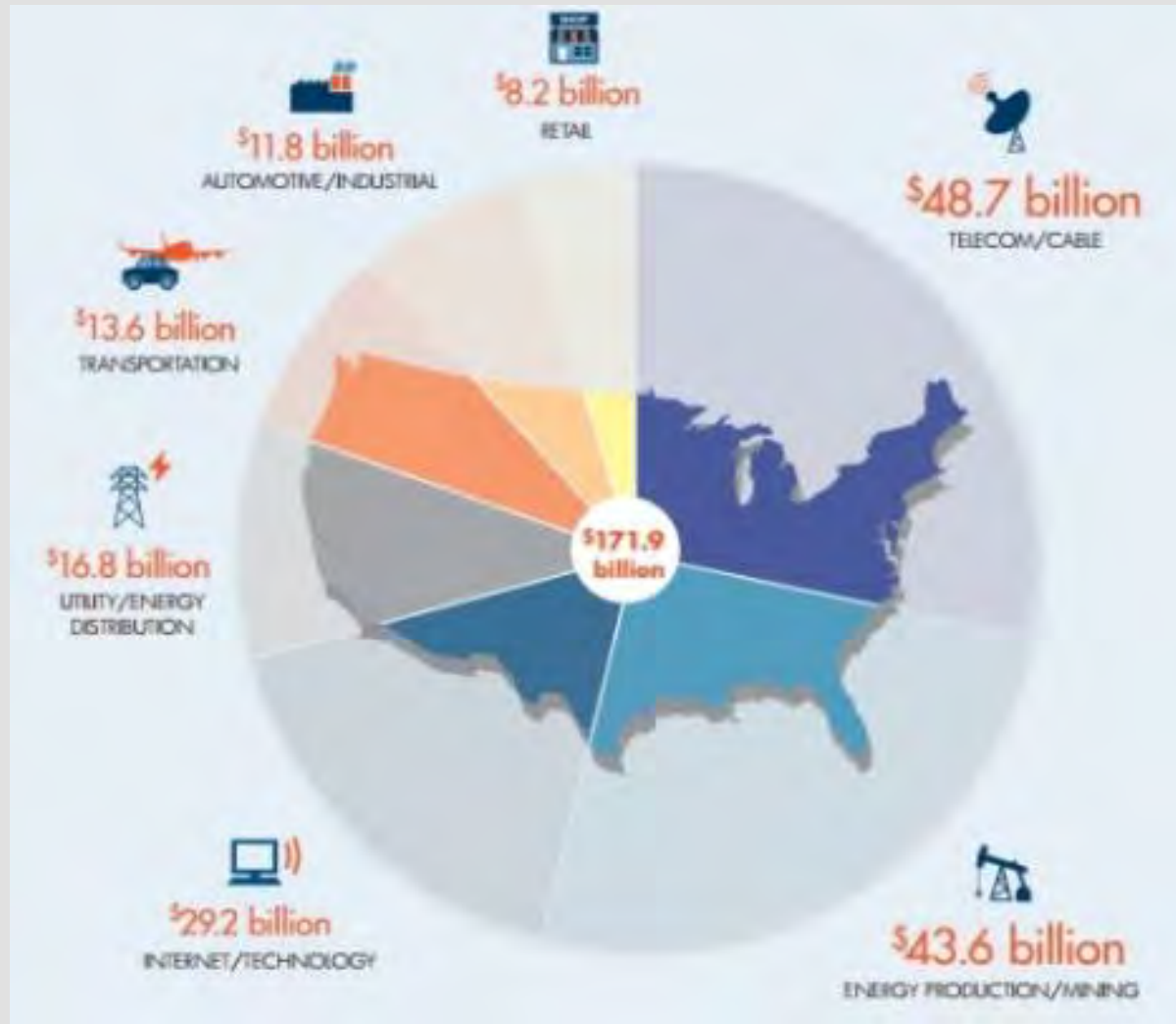
LNG Exports

- November 2016: U.S. becomes net exporter of natural gas for first time in 60 years
- By 2040, LNG exports will exceed 6.7 trillion tcf





Energy is 1/3 of all US investment





The Regulatory Landscape



Regulation Nation

97,642 pages of federal regulations in 2016

2,966 pages of new laws

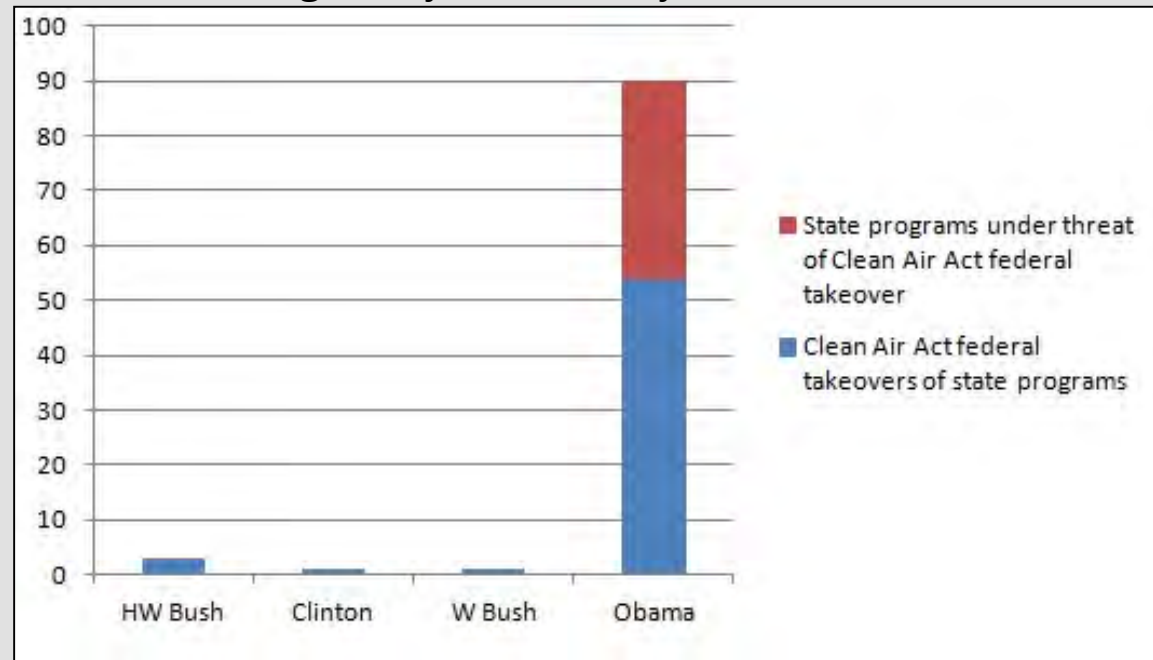




The Decline of Cooperative Federalism

- As of November 2016, the Obama EPA had Promulgated a **record 57 FIPs!**

State Regulatory Takeovers By Administration





What is and What Should Never Be

Recently Finalized and Upcoming Regulations Impacting Energy:

- | | |
|---|---|
| • Stream Protection Rule (Interior) | • PM 2.5 NAAQS (EPA) |
| • NEPA Guidance (White House) | • Regional Haze (EPA) |
| • CO2 Regulations for New Power Plants (NSPS) (EPA) | • Cross State Air Pollution Rule (CSAPR) (EPA) |
| • CO2 Regulations for Existing Power Plants (ESPS) (EPA) | • Methane Venting/Flaring (BLM) |
| • Ozone NAAQS (EPA) | • Renewable Fuels Standard (EPA) |
| • Methane NSPS/ICR (EPA) | • Coal Lease Moratorium (Interior) |
| • “Waters of the U.S.” (EPA) | • Well Control Rule (Interior) |
| • Offshore Leasing Plan (Interior) | • ESA Designations (Interior) |
| • Nationwide Permits (Army Corps) | • Monument Designations (POTUS) |

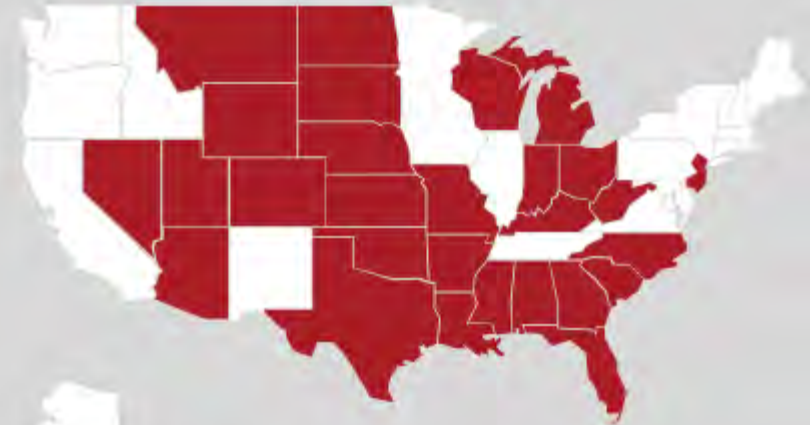


CPP: Unprecedented Legal Opposition

Chamber et al lawsuit includes:

- National Association of Manufacturers
- American Fuel and Petrochemical Manufacturers
- National Federation of Independent Business
- American Chemistry Council
- American Coke and Coal Chemicals Institute
- American Foundry Society
- American Forest and Paper Association
- American Iron and Steel Institute
- American Wood Council
- Brick Industry Association
- Electricity Consumers Resource Council
- Lignite Energy Council
- National Lime Association
- National Oilseed Processors Association
- Portland Cement Association.

27 States Suing EPA over Clean Power Plan



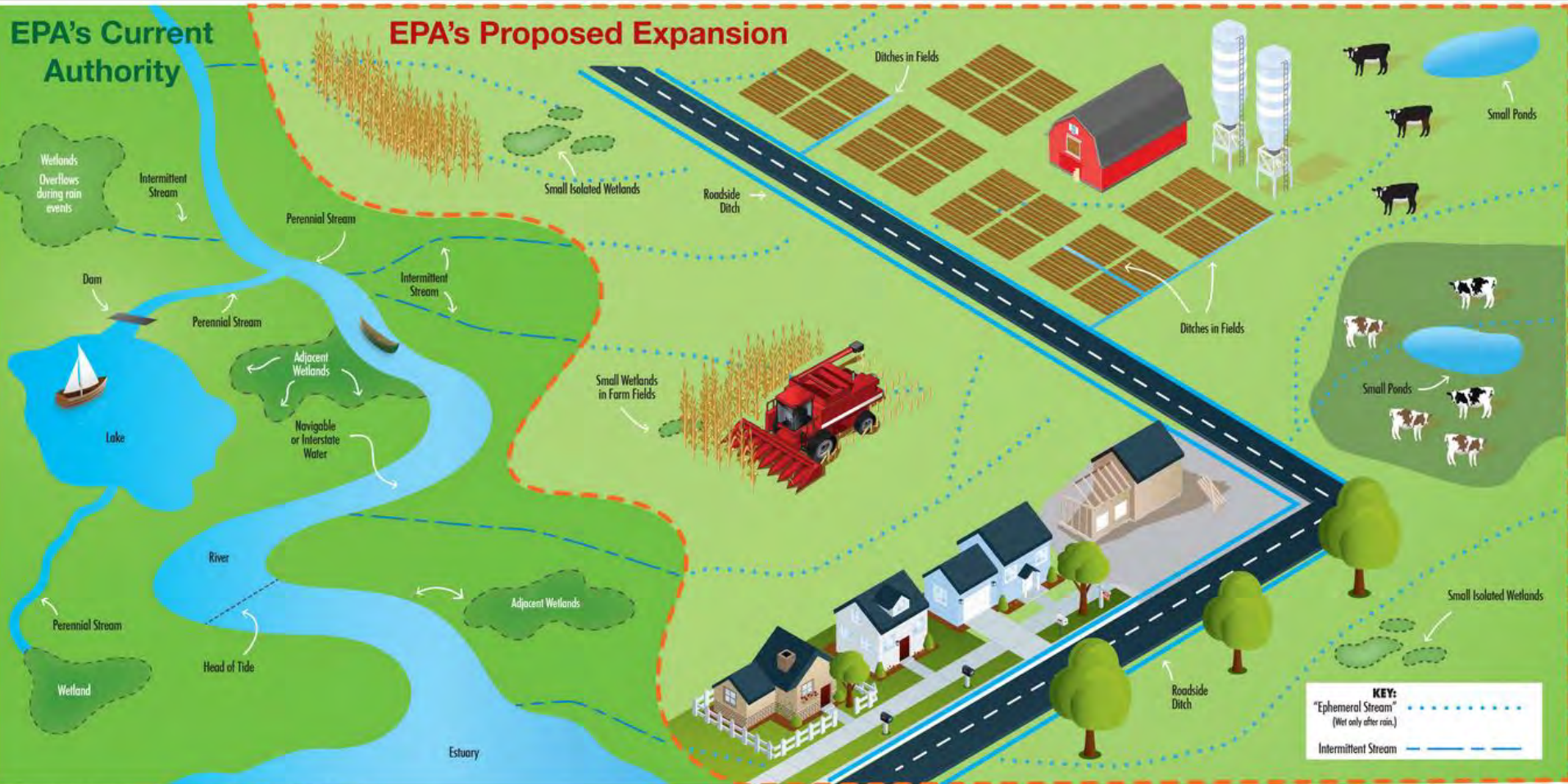


Clean Power Plan – Looking Ahead

- President Trump campaigned on repeal
- Four potential paths:
 - Courts (DC Circuit/SCOTUS)
 - Formal executive withdrawal/rescission
 - Light enforcement/interpretation
 - Congressional repeal
- Regardless of path, **CPP planning is likely to end immediately.**



“Waters of the U.S.” Permit Expansion



Based on an original infographic created by the National Association of Manufacturers.

EPA's "Waters of the U.S." proposed rule would define "navigable waters" to regulate countless ephemeral drains, ditches and "wetlands" that only contain water when it rains. But whether they are wet or dry on any given day, farming, home building, business expansions, commercial development, and countless other land uses in or near these land features will require a federal permit. Permits might take years, or might never be issued. The result amounts to nothing short of federal zoning authority.

This is not what Congress had in mind when it wrote the Clean Water Act. To learn more and help defeat this rule, visit ditchtherule.fb.org.

Source: Farm Bureau



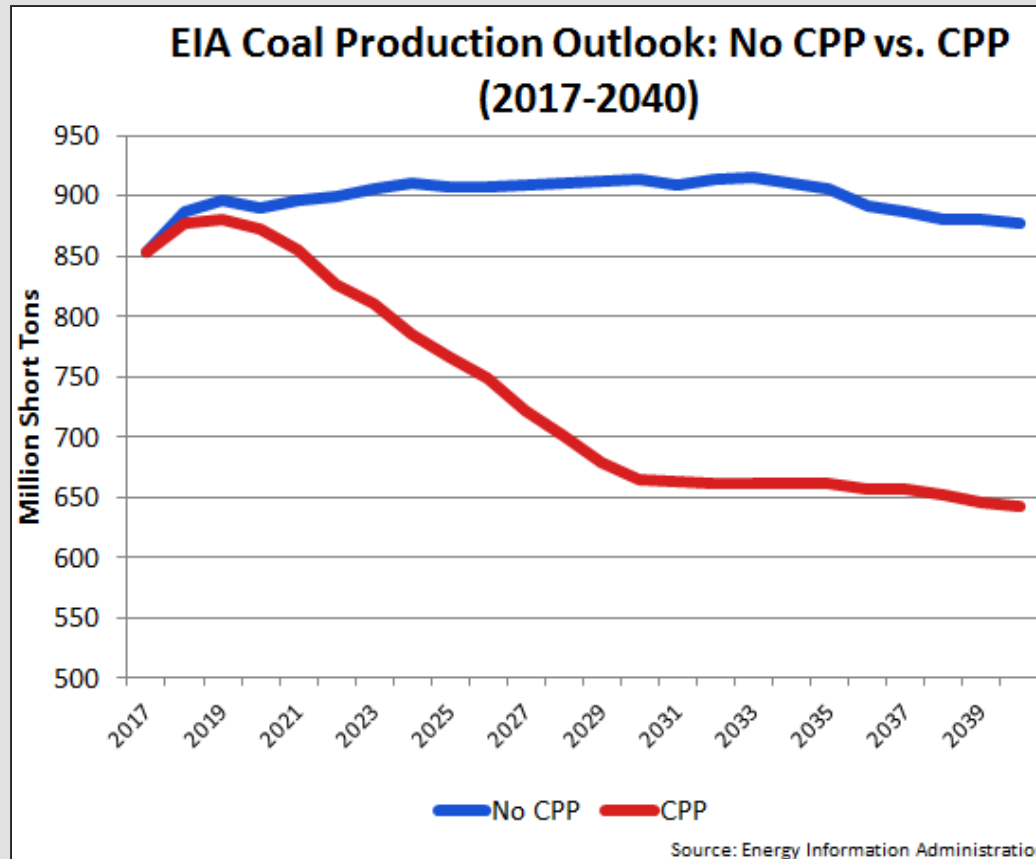
Trump Considerations

- **Personnel is policy**
- **Energy/Environment Policy Outlook**
 - **Early emphasis: Executive Actions (rescind EOs, freeze new regs, enforcement discretion)**
 - **Congressional Review Act (CSAPR, Methane, Stream Protection Rule)**
 - **Energy likely to be key aspect of infrastructure, tax reform legislation**
 - **Comprehensive energy bill? Clean Air Act and Clean Water Act reforms?**
 - **Litigation strategy**



Can Trump Help Coal Country?

CPP Repeal Projected to Hold Production Flat





What About Paris?

- Since 2005, U.S. emissions have fallen by 13 percent while China's have grown by 69 percent and India's by 53 percent.
- Globally there are 510 coal-fired power plant units under construction, with a further 1,874 planned, a total of 2,384 (including 765 in China).
- India has announced that it plans to **double coal production by 2020.**
- Russia has "committed" to **increase** emissions up to 40%

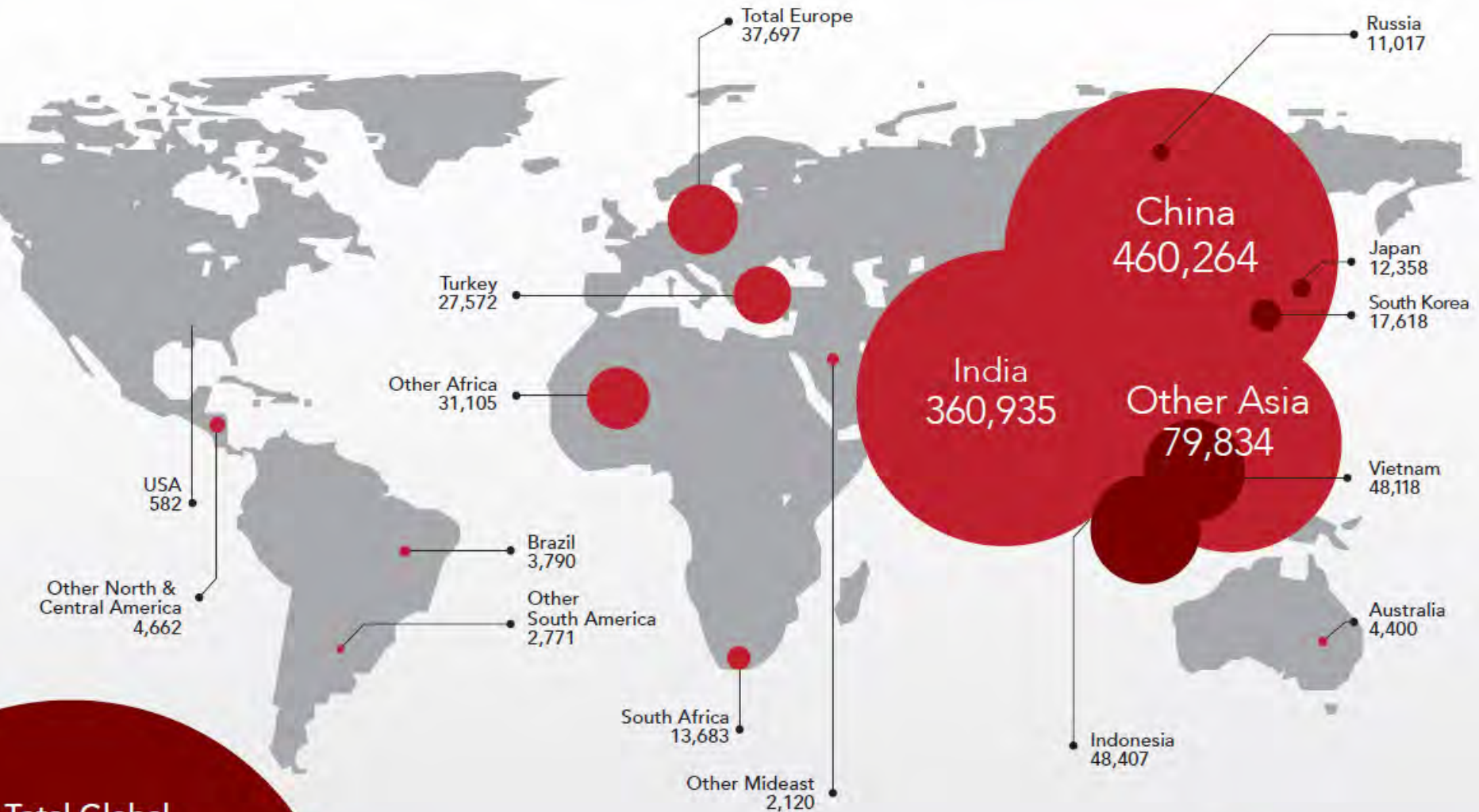
Russia's Submitted INDC

INDC	Limiting anthropogenic greenhouse gases in Russia to 70-75% of 1990 levels by the year 2030 might be a long-term indicator, subject to the maximum possible account of absorbing capacity of forests.
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- **President-elect Trump has promised to "cancel" Paris. Mechanism/priority remains unclear**

Coal-fired Power Plants Planned and Under Construction

Total installed capacity (megawatts)



Total Global Proposed Capacity:
1,167,114

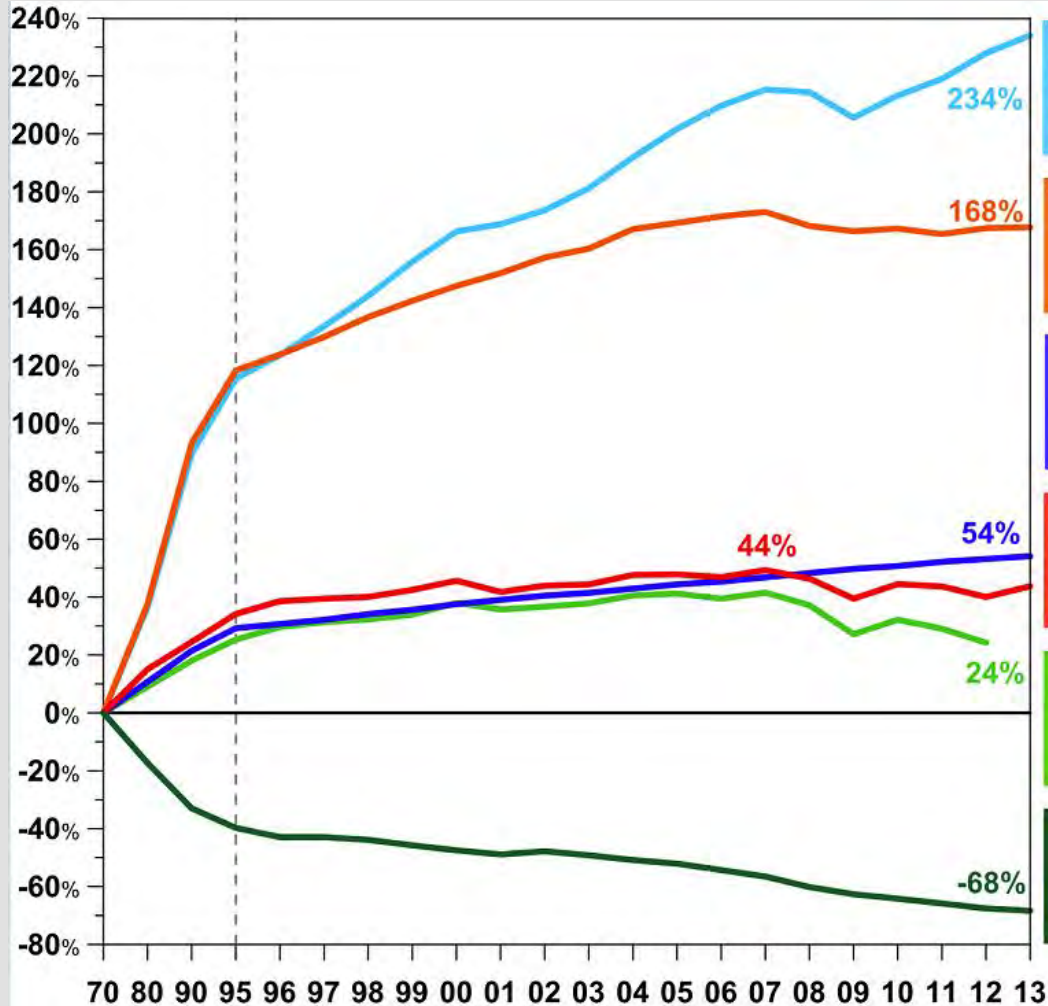
Source: Platts database, September 2015



Anti-Energy Environmentalism Evolves and Goes Mainstream



Economic Growth + Environmental Progress



Gross Domestic Product



Vehicle Miles Traveled



Population



Energy Consumption



CO₂ Emissions



Aggregate Emissions (Six Common Pollutants)



The New Environmentalism

- 1970s – 2000s: pursue **safer** and **cleaner** fossil fuel use that is achievable at a reasonable cost.
- Today: **Eliminate fossil fuels entirely.**



- AEP/SWEPCO Turk Plant: 1st Ultra Supercritical plant in the country is now ***illegal to build and operate*** because of CO2 regulations.

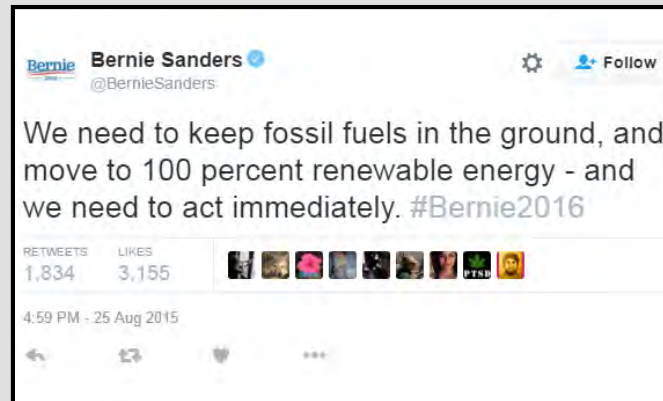


Keep It In The Ground Goes Mainstream

2012

- This country needs an all-out, all-of-the-above strategy that develops every available source of American energy.”
— President Obama, January 2012

2015



2016

- "By the time we get through all of my conditions, I do not think there will be many places in America where fracking will continue to take place.”
— Hillary Clinton, March 2016

Keep It In The Ground Intensifies



No Fracking

No Pipelines

No Exports

No Mining

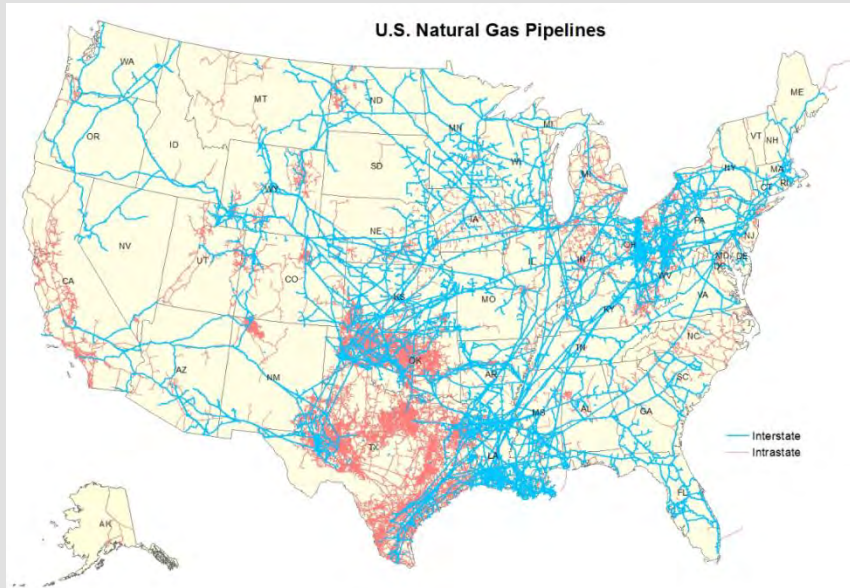
No Power Plants





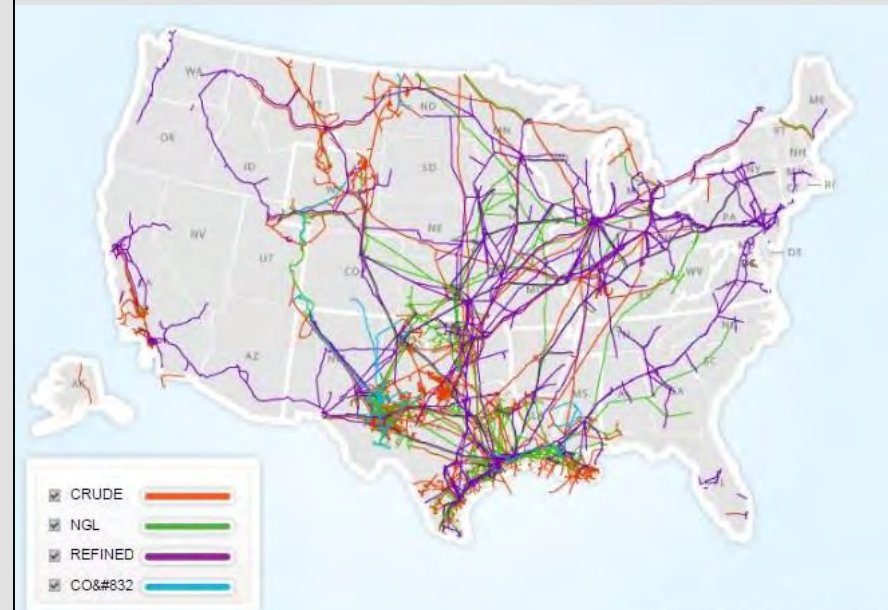
New Battleground: Pipelines

2.5 million miles of natural gas pipelines



Source: American Energy Mapping (AEM) 2013

190,000 miles of oil pipelines



Source: American Energy Mapping (AEM) 2013



Energy Infrastructure Under Assault

Tracking Fossil Fuel Project Cancellations Across the U.S.

Since the Keystone XL pipeline was rejected by Pres. Obama on climate grounds in Nov. 2015, at least 28 other proposed fossil fuel infrastructure projects in the U.S. have been halted. The reasons are complex, but are mainly a combination of unfavorable economic conditions, environmental concerns and local resistance. In some cases, officials rejected the projects or permits or extended the review process; in others, the companies canceled or delayed their plans.

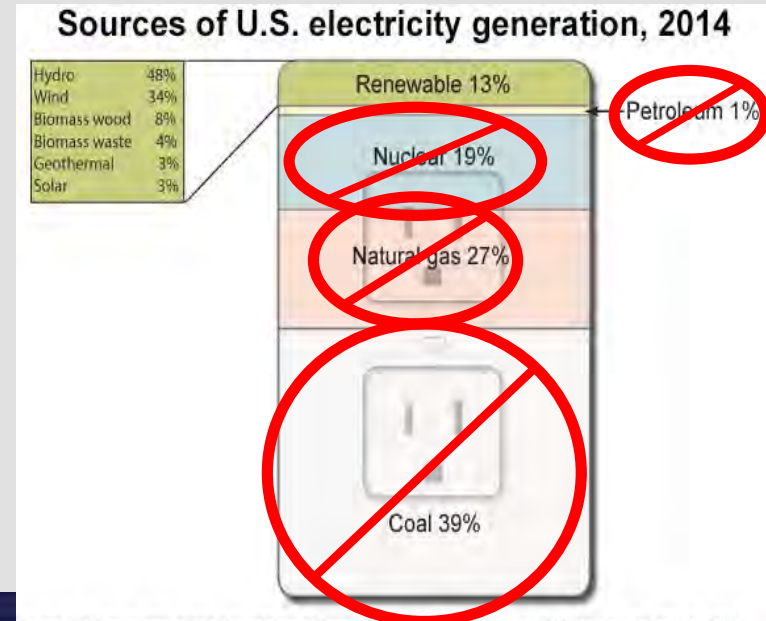


PROJECT NAME	TYPE	DATE
1 Keystone XL Pipeline	Oil sands pipeline	Nov. 2015
2 Port Ambrose LNG project	LNG terminal	Nov. 2015
3 Renewable Energy Group's Grays Harbor project	Oil terminal	Nov. 2015
4 U.S. Development Group's Grays Harbor Rail Terminal	Oil terminal	Nov. 2015
5 WesPac Energy's Oil Terminal	Oil terminal	Dec. 2015
6 Mariner East 2 pipeline	LNG pipeline	Feb. 2016
7 U.S. Oil Sands Inc. mine	Oil sands mine	Feb. 2016
8 Waterside Energy oil terminal	Oil terminal	Feb. 2016
9 Waterside Energy propane export terminal	Propane terminal	
10 Atlantic Sunrise Project	Natural gas pipeline	March 2016
11 Jordan Cove LNG	LNG terminal	March 2016
12 Otter Creek mine	Coal mine	March 2016
13 Pacific Connector Gas Pipeline	Natural gas pipeline	March 2016
14 PennEast Pipeline	Natural gas pipeline	March 2016
15 Atlantic Coast Pipeline	Natural gas pipeline	April 2016
16 Constitution Pipeline	Natural gas pipeline	April 2016
17 Northwest Innovation Works' methanol plant	Methanol plant	April 2016
18 Oregon LNG project	LNG terminal	April 2016
19 Oregon LNG pipeline	Natural gas pipeline	
20 Palmetto Pipeline	Gas and diesel pipeline	April 2016
21 Tongue River Railroad	Coal railroad	April 2016
22 Gateway Pacific Terminal	Coal terminal	May 2016
23 Northeast Energy Direct project	Natural gas pipeline	May 2016
24 Targa's oil terminal	Oil terminal	June 2016
25 Oakland Bulk and Oversized Terminal	Coal terminal	July 2016
26 Dakota Access Pipeline	Crude oil pipeline	Sept. 2016
27 Valero's Oil-by-Rail project	Oil-by-rail	Sept. 2016
28 Contanda Gray Harbor terminal	Oil terminal	Sept. 2016
29 Phillips 66 Oil-by-Rail project	Oil-by-rail	Oct. 2016
30 Shell Puget Sound Refinery's expansion	Oil terminal	Oct. 2016



No Oil, Coal, Gas, Nuclear, Or New Hydro

- 2003: Sierra Club announces “**Beyond Coal**” campaign
- 2010: “We do need natural gas as a bridge fuel—a temporary bridge fuel—to bring about a clean energy revolution” – Sierra Club Executive Director Michael Brune
- 2012: Sierra Club announced “**Beyond Gas**” campaign. “As we push to retire coal plants, we’re going to work to make sure we’re not simultaneously switching to natural gas infrastructure. And we’re going to be preventing new gas plants from being built wherever we can.” – Sierra Club Executive Director Michael Brune
- “The Sierra Club **opposes** the licensing, construction and operation of **new nuclear reactors** utilizing the fission process, pending:
 - 1) Development of adequate national and global policies to curb energy over-use and **unnecessary economic growth** (emphasis added).”
- “The Sierra Club strongly **opposes** the construction of **new large hydroelectric dams.**”



Source: U.S. Energy Information Administration, *Electricity Power Monthly* (February 2015). Preliminary data for 2014

Note: Sum of components may not equal 100% due to independent rounding.



U. S. C h a m b e r o f C o m m e r c e



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