

# **Making Fossil Fuels Great Again!**

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# America's Incredible Energy Potential Remains Untapped!

## What Country Was He Talking About?

- Every year since 2012, the United States has produced more oil and natural gas than any other country.
- And its not just fossil fuels- the amount of electricity generated by wind and solar energy has also soared in the past decade.
- The U.S. has built 12,000 miles of liquid pipe since 2010- the equivalent of 10 Keystone pipelines.
- The oil and gas industry has seen a steep decline lately — which has led to industry wide layoffs and retrenchment.
- It's largely a victim of its own success- a glut of domestic oil and gas has caused prices to drop, leading to a slowdown in production.
- Working natural gas in storage reached a record high of 4,017 Bcf) on November 4.

# We Are Going to Turn Everything Around!

- President Elect Trump's has promised to reopen coal mines, pull out of the Paris climate treaty and roll back environmental regulations. The top priorities include:
  - Lifting restrictions on the production of shale, oil, natural gas and coal on Federal lands which will include methane regulations.
  - Removing roadblocks to "vital energy infrastructure projects such as the Keystone Pipeline.
  - Cancel funding commitments to U.N. climate change programs.
  - Increase onshore and offshore leasing of federal lands and waters, streamline permitting for all energy projects.
  - Rescind the coal mining lease moratorium.

## Back to the Future Part I

- President Obama's coal-killing Clean Power Plan is history, the EPA will be defunded;
- The U.S. will not ratify the Paris climate accord;
- There will be no chance of a federal carbon tax or cap-and-trade regime;
- Repeal of the onerous regulations placed on every industry in the past eight years;
- Yes, low natural gas prices have hurt coal, but policy such as the MATS rule, the CPP, renewable portfolio standards, New Source Performance Standards, the retroactive vetoes of mining permits, and large federal subsidies for competing fuels are clearly all governmental decisions that are exacerbating the situation.
- The election of President Trump is a huge lifeline to the coal industry - the obvious difference between drastic decline or stagnation/slight growth;

## Back to the Future Part II

- American oil and gas production will surge;
- We will see an abrupt end to the Bureau of Land Management's efforts to grab authority to regulate hydraulic fracturing on federal lands;
- Methane emissions regulations will be repealed;
- Trump's pro-infrastructure regulators will unlock private capital for pipeline projects;
- The bump for oil, gas and coal will mean fewer dollars flowing into renewables;
- We'll build more nuclear power plants;
- There will be a huge surge in SUV sales.
- This will all happen in 100 days.

## Does Anyone Believe a New Coal Plant Will be Built

- The EPA has made it harder and harder to build new coal-fired plants.
- Cheap natural gas, the declining cost of renewables and aggressive carbon emissions restrictions have all led to the cancelation of 750 GW proposed coal capacity between 2010 and 2016.
- Cleaner natural gas is preferred not only by federal but also by state and local policies.
- Coal is not coming back- its just not economically feasible to build a new coal plant.
- Some existing coal plants could get a “new lease on life” in vertically-integrated markets, in spite of attempts to eliminate regulations affecting coal, in competitive markets ... gas would continue to dominate.
- The 100,000 lost mining jobs Trump promises to restore are almost all in the eastern Appalachian coal region, where mining costs are 10 times those of Wyoming, which has cleaner, more easily mined coal, and where the industry is highly mechanized.

## Does the President Matter? Will We See Dramatic Changes in Our Energy Mix?

- It is important to remember that the U.S. doesn't have a coherent "energy policy" per se.
- What we call an energy policy is actually a large array of interconnected laws, regulations, market systems, leasing arrangements, tax provisions, etc. affecting the production, refining, distribution and sale of various energy resources.
- A possible reaction to these anticipated policy shifts at federal agencies could be increased regulation from states, and more citizen suits aimed at filling any perceived gaps in enforcement.
- Similarly, existing state-only environmental regulation, such as California's Global Warming Solutions Act are unaffected by administration changes at the federal level.
- In an energy market economy such as the U.S., energy choices are more shaped more by price and technology.

## A Reality Check

- States have no federal requirement to reduce CO2 emissions from existing power plants, but other programs will remain in place.
- Most growth in electricity demand is met by generation with natural gas and renewable capacity which are more economic to build to meet new demand even without the CPP in place.
- Solar will thrive because the cost of solar and solar components have been driven down and now the cost of batteries is coming down as quickly.
- Over 80% of all wind farms are in Republican-held congressional districts.
- There is little that can be done to reverse the economic challenges that nuclear power faces which, like coal-fired generation, are largely the result of low priced natural gas, which has driven down wholesale power prices.



## A Reality Check

- Federal lands hold reserves but the big shale gas plays have been primarily on non-federal lands and have attracted a significant portion of investment for natural gas development.
- U.S. drilling activity is increasingly concentrated in the Permian Basin, which spans parts of western Texas and southeastern New Mexico. The Permian now holds nearly as many active oil rigs as the rest of the United States combined.
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- In an energy market economy such as the U.S., energy choices are more shaped more by price and technology. Most of the big factors impacting the energy industry have been market driven.
- High world oil prices, more drilling. Low prices technology improvements that reduce costs.

## LNG Exports Are Needed to Support U.S. Prices

- U.S demand cannot sustain gas prices at a level that will maintain these production levels hence the rush for exports.
- Can the United States simultaneously ramp up LNG exports at a rapid rate while fully satisfying a host of other emerging market needs, with only a minimal impact on energy prices in the domestic market?
- Can the U.S. market absorb increases in demand of this magnitude with only moderate increases in prices for natural gas?
- What domestic price will knock us out of international markets?

## Is This the Golden Age of Natural Gas?

- In Europe sluggish economic growth, enforced expansion of renewable energy and poor policy has worked against gas.
- Every country in the Middle East needs more natural gas but supply has not kept up owing to government regulation of price and barriers to investment in new supply infrastructure.
- Asia has been the big hope for demand growth, but the continent is turning instead to a coal and renewable energy strategy. Five hundred coal-fired power plants are being built in Asia, with plans for another 1,000.
- SSA is plagued by infrastructure that is outdated and not well maintained. There is simply no money for expanding infrastructure to include gas.
- The assumption in Paris was that the easiest and cheapest ways to cut greenhouse gas emissions actually starts with these developing nations, where there is more opportunity to improve energy efficiency and land use and to scale up clean energy.
- Most developing countries have, or are currently devising, climate change response strategies. Whether these strategies will effectively influence their development planning remains to be seen.

## Gas Is Under Attack World Wide

- Natural gas is recognized as a clean energy resource that can provide needed energy to billions of people and when substituted for coal and other higher CO<sub>2</sub> emitting fossil fuels, can dramatically reduce CO<sub>2</sub> emissions and improve the quality of air.
- The use of gas is being challenged by concerns about the extent of methane emissions that occur during its production, transportation and distribution.
- These emissions are being used to discount gas' advantage over coal.
- The existence of industry emissions also provides ammunition to those who want to phase out the use of fossil fuels as soon as possible.

## Natural Gas In An All Electric World

- States will continue to have their own environmental enforcement agencies and priorities.
- After years of growth, state programs to foster renewable energy are considerably more durable now and are positioned to withstand federal abandonment.
- 19 States are well down the road in implementing the CPP.
- As the NRDC says: the country will not reverse course on decarbonization because the effort is being led by states, citizens and markets.
- In the central United States, utilities are purchasing wind power for as low as two cents per kilowatt-hour after the production tax credit. Even when you remove the production tax credit from the calculations, the cost of new wind resources is competitive with the annual fuel costs for existing natural gas combined cycle generation.
- Siting and constructing pipelines could get easier at the federal level, but shut out in Washington, the greens will “go to the mats” at the state and local level.
- A lack of natural gas pipeline capacity in the Northeast could limit both gas markets and the region's renewable electricity expansion in the event that utility-scale battery systems do not quickly become cost-effective

## The Centers of the World Are the States

- The electric industries have presented a vision of the grid of the future where smart meters, home appliances, electric vehicles, rooftop solar, and smart thermostats operating seamlessly with the power grid and are linked through a high speed communication network.
- These new technologies enable grid automation and optimization and will drive the growth of distributed energy resources, such as wind and solar power, electricity storage, demand response, and energy efficiency.
- To take advantage of these potential cost savings, we have to understand how to operate an electricity system reliably – capable of withstanding changing conditions caused by the moment-to-moment fluctuations in the energy balance, extreme weather, and sudden disruptions to the system.
- As explained to me by a California cohort: it is not a matter of renewables being integrated into the grid; renewables become the grid.