

Affordable Energy: Threatened in New Mexico

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How Is Affordable Energy Threatened in New Mexico?

- New Mexico House passed legislation that would prevent future increases in the state's renewable power mandates. The Democrat-controlled Senate blocked the legislation.
- What are the key issues, and how will this affect New Mexicans?

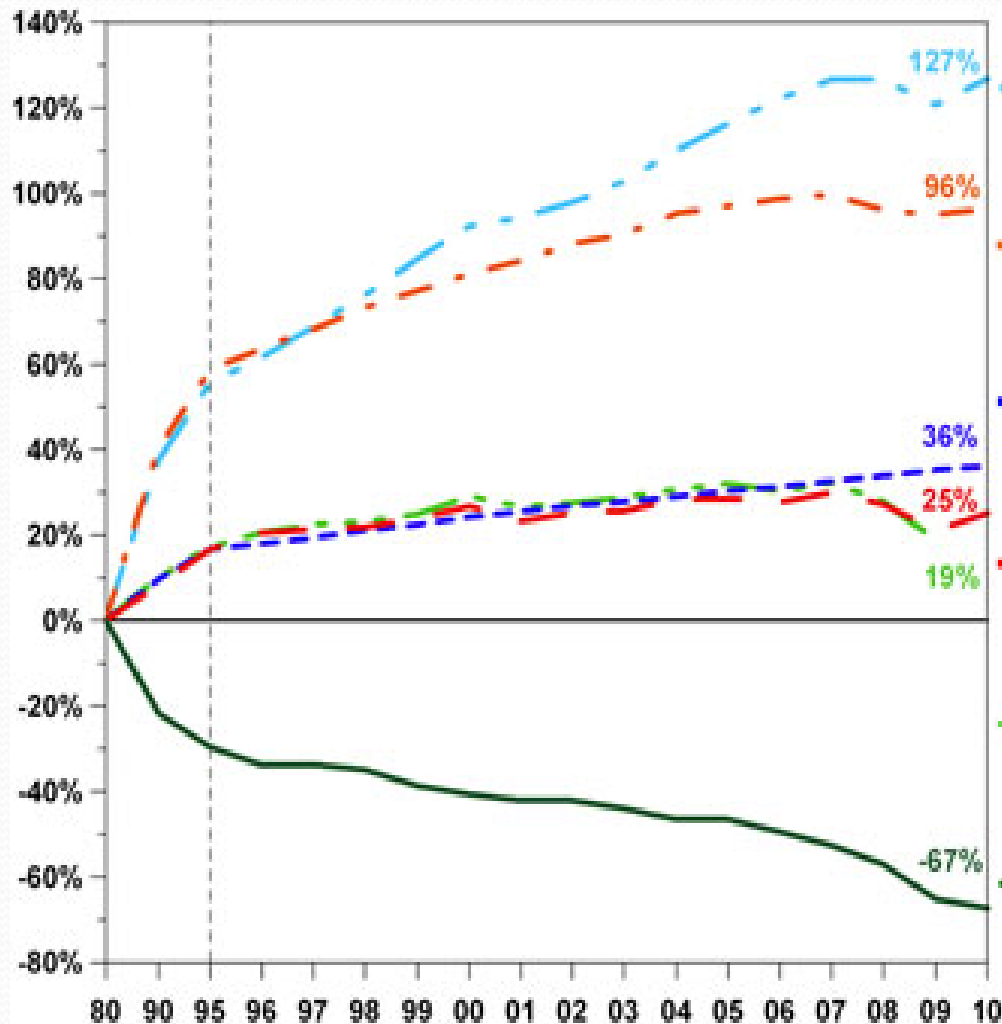
New Mexico's Renewable Power Mandate

- In 2007, New Mexico imposed renewable power mandates (RPMs) requiring 20% renewable power generation by 2020 (10% for rural electric coops).
- Prior to the mandates, New Mexico generated little electricity from renewable sources. Currently, New Mexico is up to 8% renewable power.
- Renewable power advocates claim the test of whether the mandates are successful is whether the mandates have forced more renewable power onto the grid. The real test, however...

What Were the Justifications for Renewable Power Mandates?

- Common assertions:
 - Environmental benefits
 - All about emissions
 - Economic benefits
 - Home-grown jobs
 - Energy independence / National security

Pollution – Since 1980



Gross Domestic Product



Vehicle Miles Traveled



Population



Energy Consumption

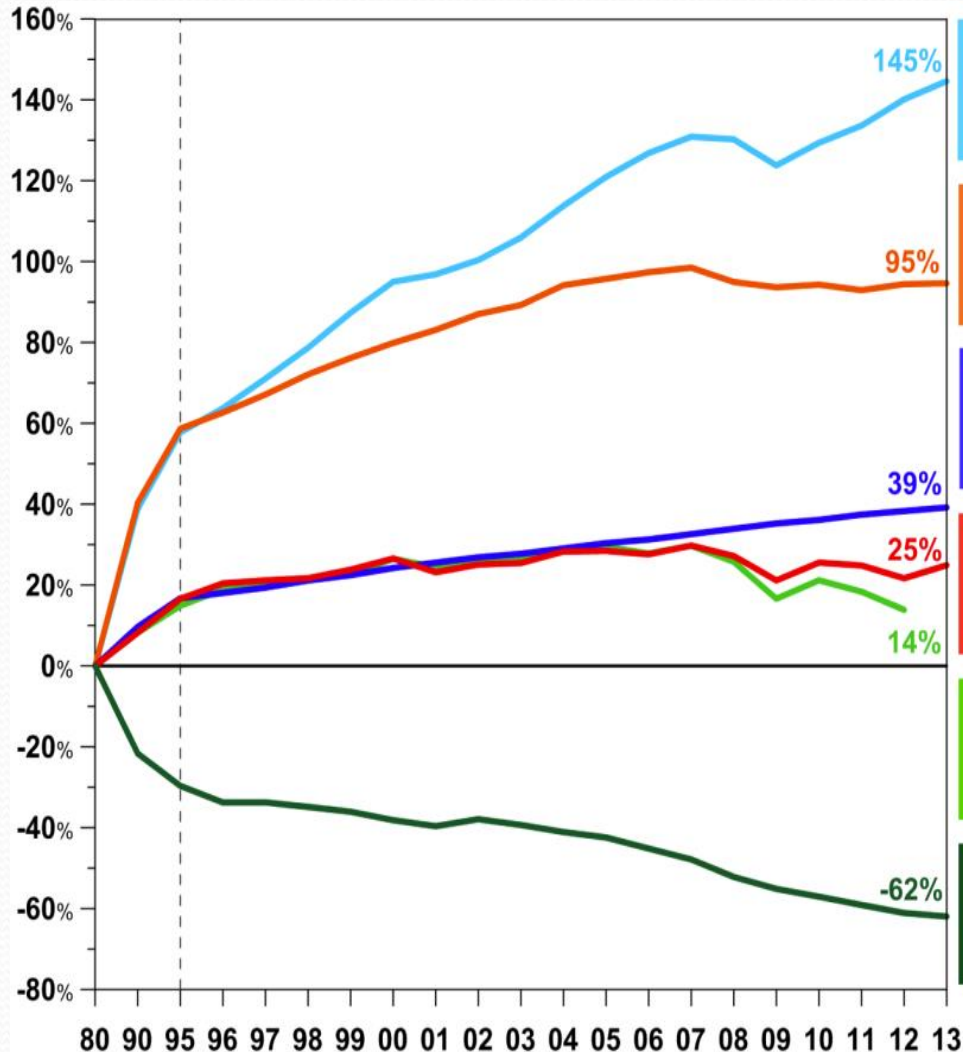


CO₂ Emissions



Aggregate Emissions
(Six Common Pollutants)

Pollution – Since 1980



Gross Domestic Product



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Energy Consumption



CO₂ Emissions



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Wind Power



Wind Power Facts and Impacts

- **Environmental impacts:**
 - Land intensive - 600 sq. mi.
 - Plus transmission lines
 - Most favorable locations
 - Mountaintop ridges
 - Coastal shores
 - Open plains
 - Powers only 3% of nation's electricity, yet kills 1.4 million birds and bats every year
 - Includes protected and endangered species
 - Oil and natural gas prosecutions, wind farms get free pass
 - Compare to BP Gulf oil spill
 - Rare Earths necessary for wind turbines...

Rare Earth Environmental Harms

Yale University Environment 360 report, *Boom in Mining Rare Earths Poses Mounting Toxic Risks* – “Contrary to their name, the 17 rare earth elements are relatively common — their rarity comes from the labor involved in separating them from surrounding rock. The process requires a cocktail of chemical compounds and produces a ‘tremendous amount’ of solid waste, according to the U.S. Environmental Protection Agency.”

Rare Earth Environmental Harms

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Solar Power



Solar Power Facts and Impacts

- **Environmental impacts:**
 - Land intensive – 40 sq. mi., typically in undisturbed desert
 - BrightSource Ivanpah project attracts and incinerates thousands of birds each year in mid-flight
 - Thermal - Water intensive – twice coal, 4x natural gas
 - Most economical where water is scarce
- Rare Earths necessary for solar equipment...

Solar Environmental Harms

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Gasoline vs. Ethanol



Ethanol Facts

- Requires 3.1 gallons of water to produce a gallon ethanol (not counting the water used in irrigating crops, etc.)
- Encourages the development of marginal cropland
- Is CO₂ neutral vs. gasoline
- Emits more of some pollutants, less of others
- Consumes 40% of America's corn crop merely to produce 10% of transportation fuel

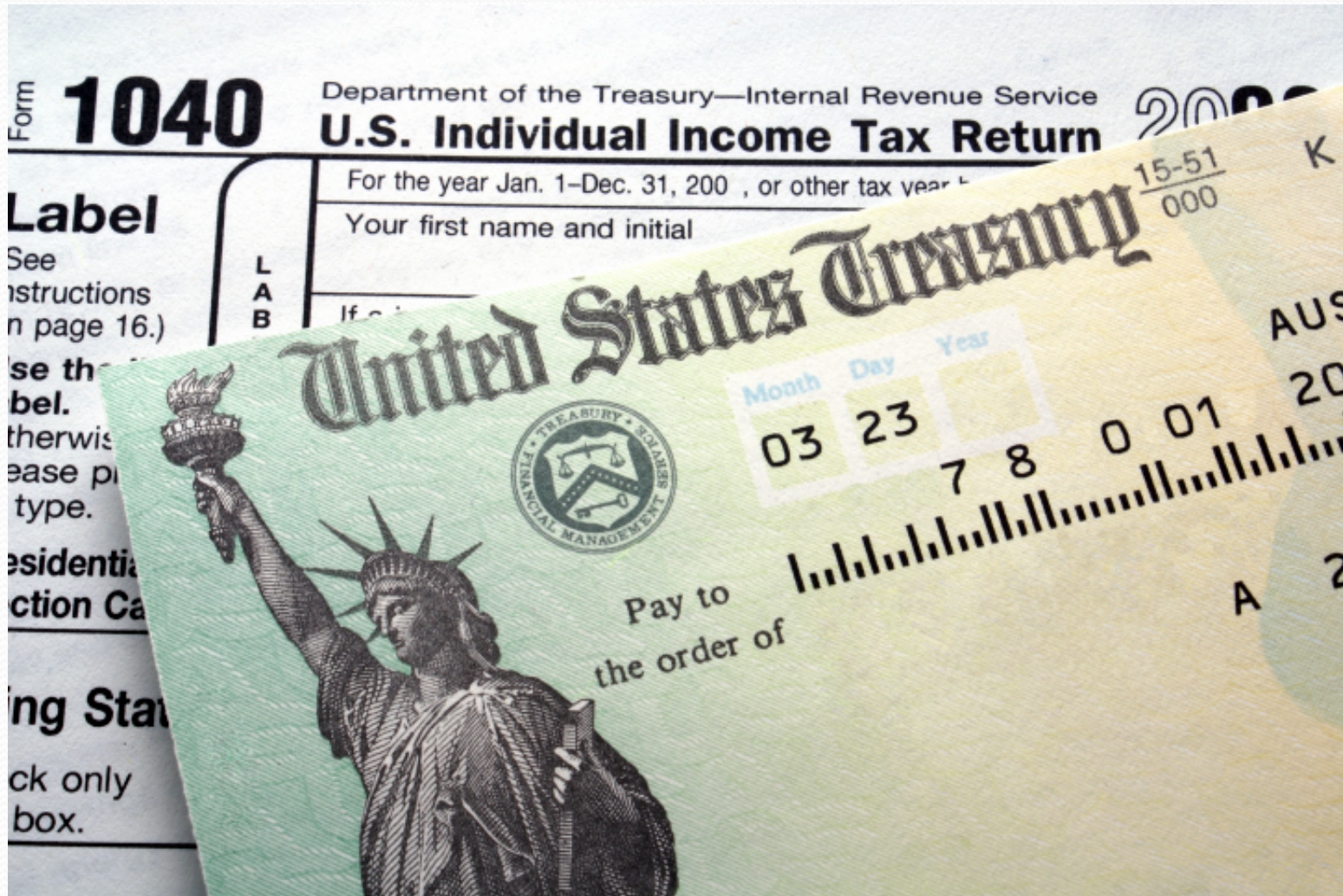
Environmental Priorities Are Determined by Subjective Preferences



Environmental Priorities Are Determined by Subjective Preferences



Energy Economics



Solar Power



Solar Power Economic Facts

- Left-of-center Brookings Institution reported in a 2014 study – **New** solar power is **triple** the cost of coal and natural gas
- U.S. Energy Information Administration – **New** solar power over the next 30 years will be **five times** more expensive than conventional power
 - Pro-solar biases
 - Assumes equal 30-year lifespans for equipment
 - Solar power is often of little utilitarian value
 - Solar power forces higher inefficiencies in baseload power

Solar Power Subsidies

- Is solar power more expensive merely because conventional energy gets more subsidies?
- U.S. Energy Information Administration
 - March 2015 report – Solar power receives more preferential subsidies than all conventional energy sources combined
 - Weighed per-unit of energy delivered, solar and other renewable power receives approximately 25 times as many subsidies as conventional energy

But Doesn't the Sun Shine for Free?



But Don't Rats Run Around NYC for Free?



Wind Power



Wind Power Economic Facts

- Brookings Institution 2014 report – **New** wind power is twice the cost of coal and natural gas
- PJM Electric Grid Operators – Three times as expensive
- U.S. Energy Information Administration – **New** wind power over the next 30 years will be somewhere between twice as expensive and three times as expensive as conventional power
 - Pro-wind biases
 - Assumes equal 30-year lifespans for equipment
 - Wind power is often of little utilitarian value
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But Doesn't the Wind Blow for Free?



How Does This Apply to New Mexico?



Electricity Prices Since New Mexico Enacted Its Renewable Power Mandate

- In 2007, New Mexico enacted its renewable power mandates. Since doing so, New Mexico's electricity prices have risen 32%, which is more than twice as much as the national average.
- In 2014 alone, these unnecessarily high electricity prices cost the New Mexico economy \$300 million.
- Broken out among New Mexico's 765,000 households, the average household paid \$400 in 2014 alone in unnecessarily high electricity prices.
- In addition to charging higher prices for electricity, New Mexico-specific tax subsidies further add to electricity costs.

Electricity Prices Since New Mexico Enacted Its Renewable Power Mandate

- IT WILL ONLY GET WORSE!
- New Mexico electricity use is growing by only 1% per year, yet renewables must gain 12% in next 5 years. How do you get there?

But What about Green Jobs?



Spain Economy

Economics professors at Spain's King Juan Carlos University published a 2009 study showing that **for every 1 “green” job created, 2.2 jobs were destroyed** elsewhere in the economy.

UK Economy

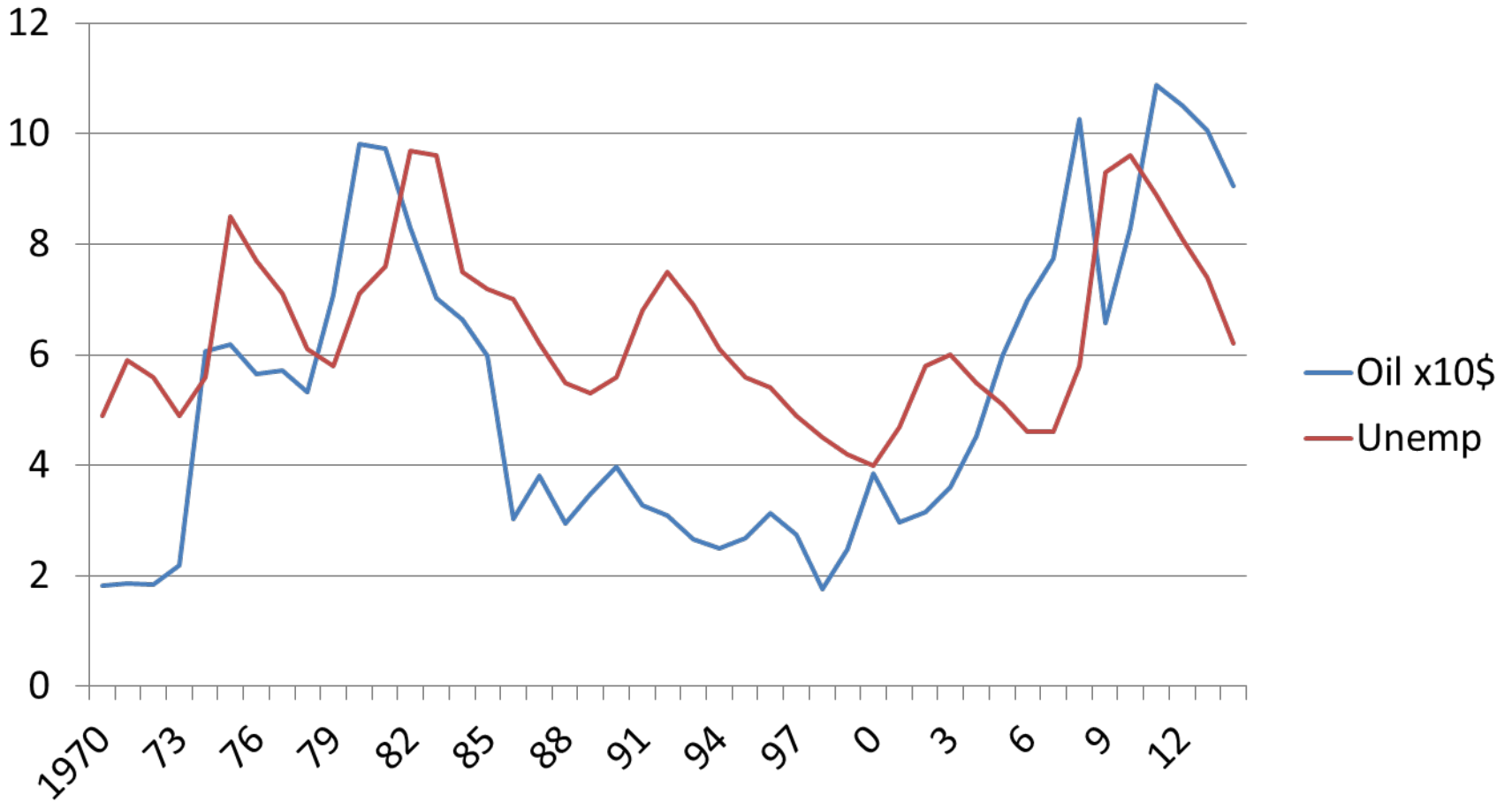
A 2011 study by Verso Economics found that renewable energy mandates in the UK **killed 3.7 jobs for every 1 job created.**

For Every 1,000 Jobs Claimed Created...

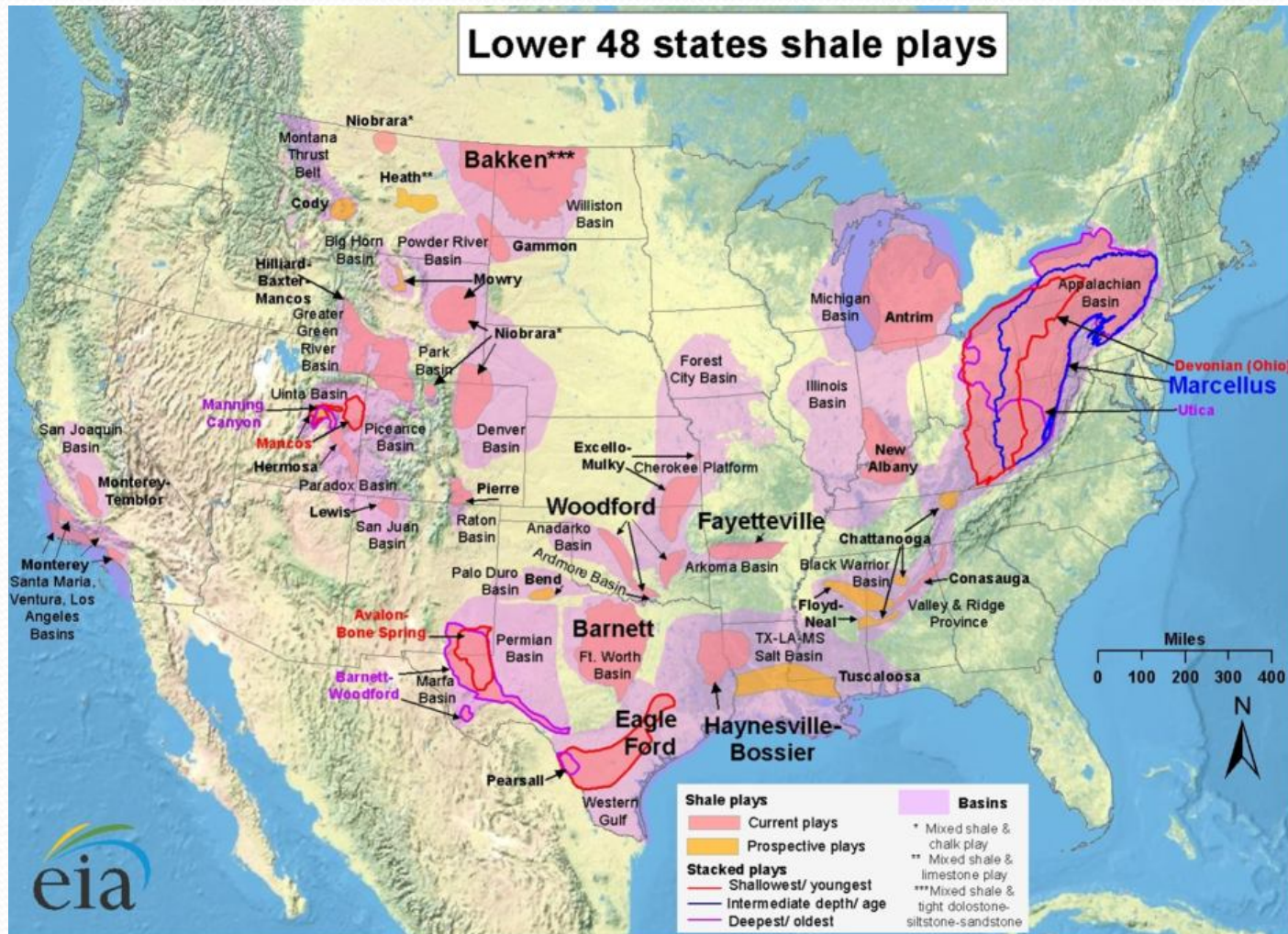
- The job numbers cited are not actual “renewable” jobs, they are primarily “multiplier” jobs that apply generically to every unit of economic activity.
- Apply that same “multiplier” to the greater number of jobs destroyed by economy-wide higher energy prices. For every 1,000 “renewable” jobs cited, 2,200 to 3,700 jobs are killed elsewhere in the economy for the benefit of those few 1,000 jobs.
- The actual renewable jobs are not jobs “created,” but jobs “shifted” from conventional power.
- Conventional power is more equipment-heavy and operational-dependent, creating a higher number of jobs.
- Conventional power jobs are almost entirely U.S. and New Mexico-specific. Wind and solar jobs are largely foreign.
- Provide specific numbers here.

Oil Prices vs Unemployment

Sources: U.S. Energy Information Administration and U.S. Bureau of Labor Statistics
Oil prices are in \$10 per barrel in Dec. 2014 dollars. Data current through Dec. 2014.



Newly Available Energy Resources



Energy Independence and National Security

- America has huge surpluses of coal and is the world's leading coal exporter.
- American has huge surpluses of natural gas that will last for many centuries.
- Wind turbines and solar equipment are manufactured primarily in China, then Europe.
- Strong economies are the most important factor in maintaining a strong national defense.



Thank You, I Am Happy to Field Questions

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Thank You, Any Questions?

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