AMERICAN BANKRUPTCY INSTITUTE

2018 Annual Spring Meeting

CONCURRENT SESSION

# Power Industry: What's Next?


**Carlyn R. Taylor, Moderator**
*FTI Consulting, Inc.; Denver*

**Scott D. Cousins**
*Bayard, P.A.; Wilmington, Del.*

**Judah Rose**
*ICF, Inc.; Fairfax, Va.*

**Steven N. Serajeddini**
*Kirkland & Ellis LLP; Chicago*

**Morgan Suckow**
*Guggenheim Securities; New York*


2018

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# American Bankruptcy Institute
# 2018 Annual Spring Meeting

# Power Industry: What's Next?

**Carlyn Taylor (Moderator) – FTI Consulting, Inc.**

**Panelists:**

**Scott D. Cousins**, *Bayard, P.A.; Wilmington, Del.*
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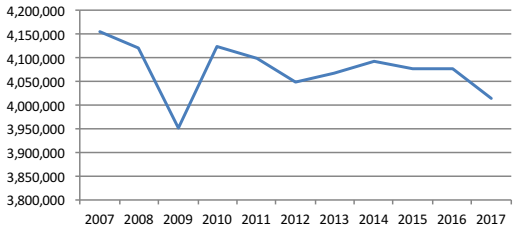
***April 20, 2018***

## Power Industry: What's Next?
## Electricity Demand Has Been Weak for Several Years

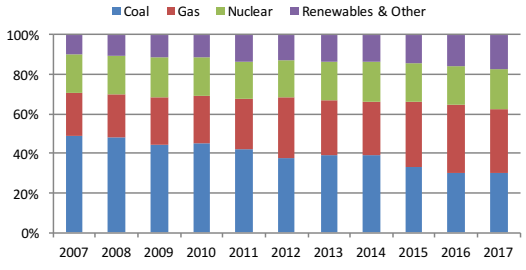
**Despite stronger economic growth, U.S. electricity generation growth has been stagnant since the end of the recession and was nearly 3% lower in 2017 than in 2010.**

- *Coal share of electricity generation decreased from 49% in 2007 to 30% in 2017.*
- *Natural gas share of electricity generation increased from 22% in 2007 to 32% in 2017.*
- Nuclear share of electricity generation is nearly unchanged at 20% over the last decade.
- *Renewables (excluding hydroelectric) share of electricity generation increased from 3% in 2007 to 10% in 2017.*
- Hydroelectric share of electricity generation is nearly unchanged at 7% over the last decade.

**Total Electricity Generation**
(in thousand megawatt hours)




**Total Electricity Generation**

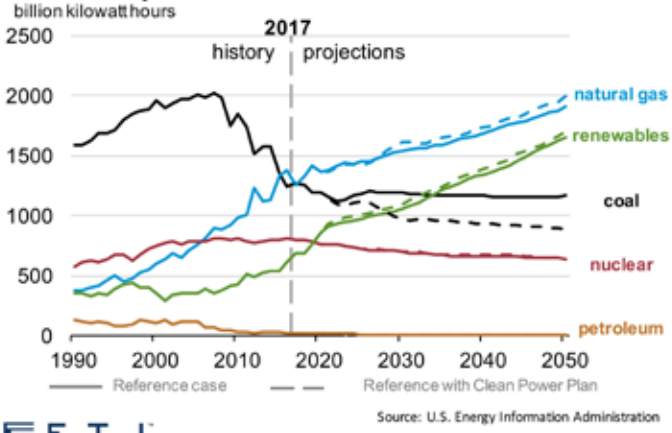



Source: U.S. Energy Information Administration

## Power Industry: What's Next?
### Renewables by Source: Solar Just Getting Warmed Up

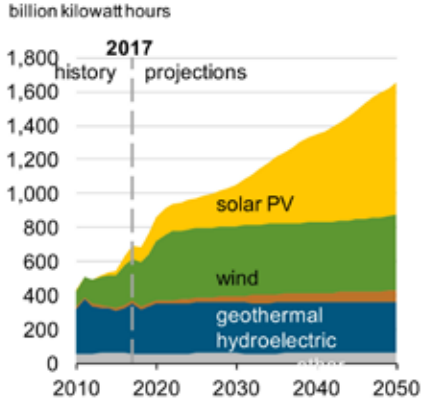
- The share of renewables in the power generation mix has gained critical mass and is expected to continue increasing rapidly, led by hydroelectric and wind power in the near term but eventually to be surpassed by solar PV.
  - Electric generation by renewables expected to increase from 610b kwh in 2016 to 1,100b kwh by 2030.
- The International Energy Agency has estimated that the U.S. power grid would need $2.1 trillion in new investments by 2035 to accommodate the transition to newer energy sources and the necessary development of the smart-grid and efficient large scale electricity storage capacity.

**Net Electricity Generation From Select Fuels**




Source: U.S. Energy Information Administration

**Renewable Electricity Generation**

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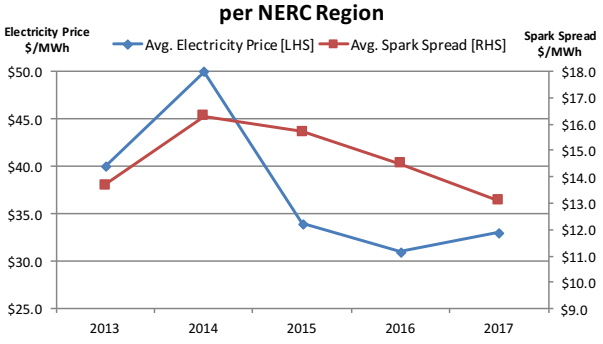
## Power Industry: What's Next?
### Power Sector Challenged by Weakness in End Market Pricing

- Capacity additions to the electric power sector in recent years combined with meager end markets demand growth have combined to weaken power prices and spark spreads for the sector since 2014.
  - On average, spark spreads are 20% lower than in 2014 but this varies significantly by NERC region.

| Avg. Electricity Price ($/MWh) | | | | | |
|---|---|---|---|---|---|
| **NERC Region** | **2013** | **2014** | **2015** | **2016** | **2017** |
| TRE | 37.0 | 45.0 | 31.0 | 26.0 | 26.0 |
| FRCC | 37.0 | 44.0 | 33.0 | 31.0 | 31.0 |
| MRO | 38.0 | 46.0 | 31.0 | 31.0 | 32.0 |
| NPCC | 58.0 | 71.0 | 46.0 | 35.0 | 36.0 |
| RFC | 42.0 | 55.0 | 38.0 | 33.0 | 34.0 |
| SERC | 36.0 | 46.0 | 31.0 | 30.0 | 31.0 |
| SPP | 34.0 | 46.0 | 33.0 | 33.0 | 38.0 |
| WECC | 41.0 | 46.0 | 30.0 | 27.0 | 33.0 |
| **Avg. Electricity Price** | **40.0** | **50.0** | **34.0** | **31.0** | **33.0** |

| Implied Spark Spread ($/MWh) | | | | | |
|---|---|---|---|---|---|
| **NERC Region** | **2013** | **2014** | **2015** | **2016** | **2017** |
| TRE | 11.3 | 14.6 | 13.3 | 9.3 | 6.6 |
| FRCC | 8.9 | 9.6 | 12.1 | 10.7 | 8.5 |
| MRO | 11.1 | 9.3 | 12.4 | 14.0 | 11.2 |
| NPCC | 20.1 | 19.7 | 17.7 | 16.5 | 13.6 |
| RFC | 15.2 | 21.2 | 21.9 | 18.7 | 15.3 |
| SERC | 10.5 | 15.7 | 13.3 | 12.7 | 10.7 |
| SPP | 17.1 | 25.3 | 22.0 | 22.7 | 25.1 |
| WECC | 15.3 | 14.7 | 12.5 | 10.9 | 13.8 |
| **Avg. Spark Spread** | **13.7** | **16.3** | **15.7** | **14.5** | **13.1** |

**Avg. Electricity Price & Implied Spark Spread per NERC Region**




Source: SunTrust Robinson Humphrey, February 2018

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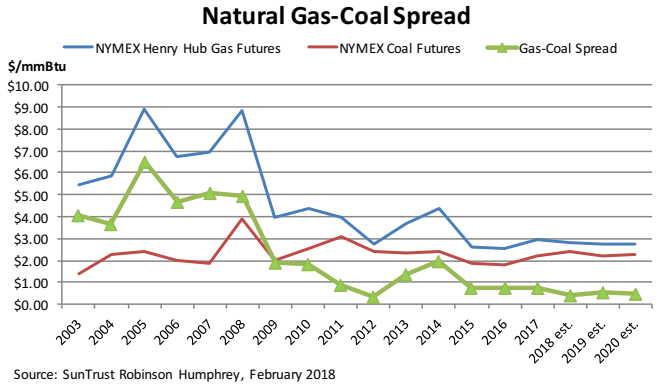
# Power Industry: What's Next?
## The "War on Coal" is Often Mischaracterized

**The "War on Coal" is Primarily an Economic Battle Rather Than a Political One.**

- Coal-fired electricity generation has been losing the economic battle with natural gas for nearly a decade as gas prices have plummeted in recent years.
- The natural gas vs. coal price differential is under $1/mmBtu, where it is expected to remain through 2020.
- EIA expects that an additional 60 gigawatts of coal-fired generating capacity, or more than 20% of coal-fired electric power capacity, will be retired over the next decade even in the absence of the Clean Power Plan.
  - Expected retirements of coal-fired capacity through 2030 roughly matches the decrease from 2011-2016.




Source: SunTrust Robinson Humphrey, February 2018

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