DOE Secretary Perry issued a letter on September 28, 2017 to FERC requesting rulemaking regarding effective, reliable, and resilient support for the nation’s electricity grid. The proposal includes an implicit subsidy to both coal and nuclear suppliers in order for these companies to recover costs associated with maintaining excess baseload capacity in the event of a disruption to the grid. The purpose of this weekly is to update you on the key elements of this proposal and to indicate the timeline for the rulemaking. As background, a few points about the supply fuel structure for electricity:

- As of 2016, over one-third of U.S. electricity generation at utility-scale facilities is from natural gas, followed by coal at 30% and nuclear at nearly 20% (see top chart).
- Renewables’ energy sourcing was at 14.9% and has grown from just 8.5% in 2007 (see 2nd chart). This growth has been due to several factors, including technology advances and a reduction in the unit cost of renewables, particularly solar and wind.
- Secretary Perry’s request is centered on an assertion that there is not enough spare capacity to make the electric grid reliable during periods of stress, citing the 2014 "Polar Vortex" as an example.
- The letter indicates that DOE analysis shows that price signals are distorted and lead to an undervaluation of grid reliability benefits, especially for conventional sources such as coal and nuclear.
- The 3rd chart shows natural gas wholesale prices to electric utilities. During the period following the 2014 Polar Vortex, there is evidence of a 10-month elevation in natural gas prices, but no evidence that the supply was constrained. Most importantly, the regional mismatch during periods of disruption is where baseload capacity needs evaluation. Next week, we will look at whether regional baseload capacity is problematic for states like Michigan.
- The 2016 report issued by DOE provided statistics on the frequency and duration of 2015 electric utility outages (see top chart on p.2). The average number of outages, including “major” events, was in the range of 1.5. The average outage length was about 3 hours. The cost of these events would require quantification in order to compare to pricing associated with providing a cushion of fuel excess capacity being proposed by the ruling proposal. To date, this cost-benefit analysis is not available. The FERC is expected to issue a statement on rulemaking shortly.

A recent study published here analyzed the data from the Electrical Disturbance Events as reported on form (OE-417) by the Department of Energy (DOE). As shown on the bottom of p.2, over 80% of electric utility disruptions affected under 1 million customers, on average, for each event.
EIA data show average frequency and duration of electric power outages

**Average electric power service interruptions per customer by utility type, 2015**

- Frequency (number of instances)
- Total duration (minutes)

### Without Major Events

- All utility types
- Municipal
- Investor-owned
- Co-op

### With Major Events

- All utility types
- Municipal
- Investor-owned
- Co-op


*Figure 4.2: Histogram of Customers Impacted*