

[Federal Energy Regulatory Commission Response to Department of Energy's Proposed Grid Resiliency Pricing Rule](#)

Terminates a proposed Department of Energy (DOE) rule to provide additional purchasing agreements and cost recovery to certain power plants, and initiates an assessment of grid reliability and resilience.

Updated last **May 21, 2018**

for the 03/09/2018 initial comments by ISOs/RTOs reported back to FERC.



WHAT IT DOES

UPDATE: The nation's independent system operators (ISOs) and regional transmission organizations (RTOs), which operate interstate energy transmission networks, reported back to the [Federal Energy Regulatory Commission](#) (FERC) on March 9, 2018 with their responses to FERC's 18 questions on grid resilience and reliability. These organizations [mostly agreed](#) in stating that, while there are no urgent threats to resilience and reliability on their systems, operators could stand to coordinate more with each other on transmission and power issues. They also pointed out potential future weaknesses in grid resilience, such as with cybersecurity. Most also stated that resilience was an extension of reliability rather than an independent concept.

Of note, however, PJM Interconnection, the largest ISO on the grid, stated in [their filing](#) that resilience should take into account threats to grid stability due to the closure of power plants, which [has been interpreted](#) as a request that FERC update its pricing and cost recovery guidelines to subsidize aging coal and nuclear plants.

ORIGINAL POST: On September 28, 2017, Secretary of Energy Rick Perry submitted a [Notice of Proposed Rulemaking](#) (NOPR) directing FERC to create a financial mechanism that would incentivize "resilient" power generators. Secretary Perry's NOPR instructed FERC to begin a rulemaking process that would make the following changes:

- Require organized electricity markets to provide price incentives for power plants "necessary to maintain the reliability and resilience of the Nation's bulk power system."
- Create a pricing system that allows for "full recovery of costs" for eligible units.
 - Eligible units must:
 - Provide "essential energy and [ancillary](#) reliability services."
 - Maintain a 90-day fuel supply on the site in the case of a crisis situation.
 - Comply with all required environmental regulations.

The Rule was [commonly interpreted](#) as an attempt to help coal power and nuclear power, which typically store fuel on-site, be more cost-competitive with cheaper generating plants like natural gas and renewables, which do not store fuel on-site.

On January 8, 2018, FERC [terminated the Proposed Rule](#), finding that it would violate their requirement that rules are not unduly discriminatory. In the termination order, FERC declined to continue rulemaking for the following reasons:

- The order violated FERC's requirement under the Federal Power Act that electricity rates are not unduly discriminatory to any type of electricity generation [16 USC 824e\(a\)](#).
 - The rule would be unduly discriminatory because it would provide a preferential rate to certain electricity generation types (such as coal and nuclear) and not others (such as natural gas and solar energy) even though generation types not eligible for

special treatment under the proposed rule may also have resilience benefits.

FERC also highlighted the conflation of resilience (recovery from service interruption) and reliability (continued uninterrupted services) in the NOPR. Resilience and reliability are [related but distinct topics](#). Although Secretary Perry's NOPR specifically highlighted resilience, FERC considered the NOPR a mechanism to address both resilience and reliability. A portion of FERC's termination of the NOPR also outlined the need for a unified definition of resilience. The Commission defines resilience as:

"The ability to withstand and reduce the magnitude and/or duration of disruptive events, which includes the capability to anticipate, absorb, adapt to, and/or rapidly recover from such an event."

Finally, FERC ordered regional grid operators ([RTOs or ISOs](#)) to conduct a holistic examination of resilience. General topics that RTOs/ISOs are expected to address and report on are:

- Criteria established to measure resilience.
- Resilience-based studies the operators have conducted.
- Initiatives (including market-based mechanisms) the operator has taken or considered taking to improve resilience.
- Obstacles the operator is facing to address resilience, including an identification of what role FERC may play to remove such obstacles.

RTOs and ISOs were instructed to produce a response within 60 days of the order.

BACKGROUND

Traditionally, the United States electric power industry was largely managed by monopoly companies that were regulated at the state level. In order to encourage innovation and reduce costs, some regions have opted to "restructure" their electricity markets and introduce [competition](#). Currently, restructured energy markets represent about two-thirds of the US energy supply.

Electric market competition aims to serve as a true "market", where the most economical resources are prioritized over more expensive resources. Because coal and nuclear are the [some of the most expensive resources](#), they risk being priced out of the market. Economics, as well as political, technology and environmental factors, contribute to the [expected decline](#) or stagnation in coal and nuclear generation.

In 2014, the extreme weather associated with the [Polar Vortex strained the electricity systems](#) in the Northeast and Midwest. As demand for electricity reached its peak, natural gas plants faced record-high fuel prices and fuel delivery problems. Coal power served as an important generation source to maintain reliable service; however, other resources such as wind also played an [important role](#) in maintaining sufficient electricity supplies and limiting generation costs during the Polar Vortex.

Since this time, FERC and other regional electricity systems have [reviewed crisis procedures](#), and made changes to improve the reliability of natural gas delivery to power plants as necessary. The NOPR intended to take further action by putting a price premium for generators that can store fuel on-site. In this way, [Secretary Perry hoped](#) to stall or reverse the trend of declining fuel resources including coal and nuclear generation in the United States.

RELEVANT SCIENCE

Economics: Electric Market Design

In restructured energy markets, RTOs and ISOs operate the transmission system to ensure open access to the electric grid and also operate wholesale power markets through which generators, load serving entities (LSEs) and other market participants buy and sell power. Among generators that sell into the markets operated by RTOs and ISOs, different generators are more efficient at

performing certain functions. Some generators, like nuclear power plants, may take a long time to turn on and off but provide steady and predictable electricity. Others, like solar energy, provide low-cost energy but can only provide electricity when the sun is shining. The goal of any electricity system is to provide reliable, safe, resilient, and affordable electricity.

The most straightforward type of RTO or ISO market is the energy market, where the RTO or ISO predicts how much power will be necessary, and LSEs provide a “bid”, or cost estimate, to provide such power. The market accepts the lowest bids, stacking resources until enough electricity is secured to meet the estimated need. In this way, the least-cost option to provide the estimated electricity need is secured. Most power is secured in the day-ahead market, but there are additional auctions to accommodate real-time power fluctuations.

Power Systems Engineering: Resilience

Simply having enough electricity at the cheapest price in the short-term is not the only consideration for an RTO or ISO. Electricity providers want to ensure the electric system is both reliable and resilient in both the long-term and during crisis events. While grid reliability is a [well-defined concept](#) - referring to a system’s ability to meet consumer demand for electricity, even during disturbances - the exact meaning of resilience is less clear. In general, however, the term signifies an electric system’s ability to recover after some sort of shock, such as an extreme weather event or even attack.

Studies by the [Department of Energy](#) (DOE) and the [National Energy Research Corporation](#) (NERC) found that the US electricity system is currently not facing an imminent resilience crisis. However, both note that the shifting fuel mix from coal towards natural gas could cause resilience issues in the long-term, and that regulators should continue to support policy that prioritizes resilience.

Experts typically view resilience as a big-picture issue that requires region-specific expertise. For example, in the wake of the Polar Vortex, PJM (Midwest and Mid-Atlantic US RTO) [prioritized better managing natural gas resources](#) to ensure availability in the future. Improving resilience and reliability can involve a suite of options including better managing natural gas supplies to prevent shortages, hardening delivery infrastructure such as transmission lines and substations, integrating diverse fuel sources such as renewables and distributed generation, and storing fuel on-site.

CONTROVERSIES & IMPLICATIONS

Critics of Secretary Perry’s proposal, including a group of eight [bipartisan former FERC commissioners](#), argued that on-site fuel storage is not a useful measure of resource resilience, and that the effort only served to subsidize resources that are no longer economically viable. Among other things, the Commissioners pointed out that fuel supplies like coal can freeze during extreme cold events, thus rendering them unusable. The former FERC commissioners further argued that incentivizing fuel supply would undermine the long-term effort to create a well-functioning electricity market.

Secretary Perry referred to [a study by IHS Markit](#), commissioned by the Edison Electric Institute, the Nuclear Energy Institute, and the Global Energy Institute at the US Chamber of Commerce, to justify his proposed rulemaking. The study suggests that resilience will be under threat without policy intervention to improve the competitiveness of reliable energy sources. The study [has been criticized](#) as having substantial methodological flaws.

The outcome of FERC’s request for comments and the shape of any ensuing policy is also unclear. For instance, FERC called on RTOs/ISOs to help explicitly define the concept of grid resilience and how it differs from grid reliability. According to Duke researchers Kate Konschnik and Brian Murray, any distinctions or lack thereof between these two concepts may have [“foundational” implications](#) on future FERC policy. If resilience is found to be substantively different from reliability, this may require a new set of policy solutions to address potential risks. Conversely, if resilience is simply an aspect of reliability, this may mean little if any policy change.

ENDORSEMENTS & OPPOSITION

Endorsements in the Grid Reliability and Resilience Pricing public docket:

- [Joint comment](#) from the American Coalition for Clean Coal Electricity and the National Mining Association: “The fact remains, however, that without immediate Commission action, more fuel-secure generating facilities will close for good very soon, and the nation’s generating mix – comprised mostly of natural gas and renewables, with their attendant vulnerabilities – will be less robust, less reliable, and less resilient.”
- [Comment](#) from the Nuclear Energy Institute: “Contrary to the vociferous objections to this approach, a cost-of-service mechanism will not harm wholesale markets. Cost-based contracts and pricing mechanisms have co-existed within organized markets for their entire history.”

Opposition in the Grid Reliability and Resilience Pricing public docket:

- [Comment](#) by eight Former FERC Commissioners: “Pursuing the worthy goal of a resilient power system, the Commission’s adoption of the published proposal would instead disrupt decades of substantial investment made in the modern electric power system, raise costs for customers, and do so in a manner directly counter to the Commission’s long experience.”
- [Joint comment](#) from 12 public interest non-government organizations including the Environmental Defense Fund, Natural Resource Defense Council, and Sierra Club: “FERC must reject DOE’s proposal as a misguided and harmful solution to a nonexistent problem.”

STATUS

Proposed Rule terminated by FERC on January 8, 2018.

POLICY HISTORY

- September 28, 2017: Secretary Perry submits the NOPR to FERC
- January 8, 2018: FERC unanimously declines to continue the Rulemaking Process

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ENERGY SUBCATEGORY

[Production, Conversion, Distribution](#)

RECOMMENDED CITATION

Duke SciPol, "FERC response to DOE's Proposed Grid Resiliency Pricing Rule", available at <http://scipol.duke.edu/content/ferc-response-does-proposed-grid-resiliency-pricing-rule> (02/06/2018).

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