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DOE Report Offers Extensive Insight, but Limited Policy Suggestions

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In recounting the history of the grid and the wholesale electricity markets, the Staff Report makes one thing clear—the grid has never been static. The image that emerges instead is one of industry and infrastructure in a constant state of flux. The Staff Report describes successive waves of generation development between 1950 and 2015, with the type of generation constructed being "largely influenced by policy, fuel costs, and technology development."[1] The 2002-2017 period—on which the Staff Report focuses—has also been marked with almost constant change. Early in the Staff Report, DOE staff recounts:

- implementation of the RTOs/ISOs[2] in 2002
- the establishment of competitive markets in the RTOs/ISOs in the mid-2000s
- the development of capacity markets in the Eastern ISOs (i.e., PJM Interconnection, L.L.C; New York Independent System Operator; and ISO New England, Inc.) in 2006-2007
- the shale gas revolution, which occurred concurrently with the implementation of capacity markets in 2006-2007
- the decrease in the demand for electricity as a result of the global financial crisis in 2008, which has since remained largely flat
- several environmental regulations impacting the capital and operating costs for traditional baseload generation with compliance deadlines falling between 2010 and 2017
- state and federal incentives encouraging the development of renewable resources, which began to influence the resource mix in 2010, around the same time that demand response began to penetrate the wholesale markets.[3]

Another key point highlighted in the Staff Report is that the wholesale markets are largely functioning as intended, providing low-cost, reliable power.[4] But while the markets are doing what they were designed to do—providing power at the lowest marginal cost—that outcome may no longer be what the public or policymakers actually want. For example, low gas prices have meant low prices for electricity, but low prices also threaten coal and nuclear resources that are still valued from a policy perspective. Moreover, a market design predicated on picking winners and losers based on marginal cost may be poorly suited to a future with a high penetration of zero-marginal cost renewable resources such as wind and solar. The Staff Report suggests that changes to the markets, such as improved price formation and valuation of reliability and resilience-enhancing attributes, may be needed to accommodate a changing resource mix.

The Staff Report also underlines the complexity inherent in trying to determine to what extent resources have been forced into "premature retirement."[5] The Staff Report lists nine different "definitions" of premature retirement from such different viewpoints as a power plant engineer (retiring prior to the end of a facility's nominal design life); a legislator (retiring when it is still capable of providing attributes valued by society, such as emissions-free power or local jobs); and an economist (retiring when still capable of providing electricity at competitive prices). The Staff Report recognizes that defining "premature retirement" is a highly subjective exercise and, as such, the DOE has no official definition for the term. There are overall trends that are leading to "premature" retirements, the Staff Report notes, but whether any particular retirement is premature depends on individual perspectives.

The Staff Report provides only a few concrete recommendations regarding policy and areas of further research. Among these recommendations is a request that the Federal Energy Regulatory Commission (FERC) continue moving forward with reforms to valuation and price formation in wholesale markets. The Staff Report specifically recommends that negative pricing—which is particularly detrimental to nuclear generation—be mitigated to the "broadest extent possible."[6] It also recommends that FERC and the DOE look into further reforms designed to promote reliability and grid resilience, suggesting specifically that the agencies "explore the potential" of using federal authority to strengthen reliability and resilience by, for example, applying cost-of-service regulation to specific at-risk plants that contribute to overall grid resilience.[7] On the broader regulatory front, the Staff Report suggests exploring regulatory reforms aimed at infrastructure development, including

lowering the costs of improving existing coal plants, licensing and relicensing hydropower plants, and ensuring safety at nuclear facilities.[8]

But, beyond these actual (modest) policy recommendations, the Staff Report provides advice for energy policy-makers, cautioning them to assess the costs and benefits of perceived "desirable" grid attributes: "There are tradeoffs between multiple desirable attributes of the grid [and thus] [i]t is important that policymakers have a clear understanding of the true costs and benefits of services to the grid, as well as an understanding of the tradeoffs between desirable attributes like reliability, flexibility and affordability."[9] If the Staff Report is short on answers, these words of wisdom may at least help the industry and policy-makers ask the right questions.

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[1] Staff Report at 15.

[2] Regional Transmission Organizations and Independent System Operators ("RTOs/ISOs").

[3] Staff Report at 2; *see id.* at 19.

[4] *Id.* at 10.

[5] *Id.* at 7-8.

[6] *Id.* at 126.

[7] *Id.* at 129.

[8] *Id.* at 127.

[9] *Id.* at 12.

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