

May 24, 2018

**UNITED STATES DEPARTMENT OF ENERGY'S
USE OF FEDERAL POWER ACT EMERGENCY AUTHORITY**

Comments of Microsoft Corporation

Microsoft Corporation (“Microsoft”) appreciates the opportunity to offer these comments on the appropriate use by the U.S. Department of Energy (“DOE” or “the Department”) of emergency authority under sections 202(c) or 215A of the Federal Power Act or under the Defense Production Act of 1950. Microsoft believes it is critical that the Department consider the perspective of large corporate energy consumers, such as Microsoft, that actively purchase energy in FERC-jurisdictional markets like the PJM energy market and that require resilient and reliable 24 x 7 energy supply for their operations.

Microsoft uses an increasingly large amount of electricity to power our datacenters throughout the nation, and depends upon a very high degree of reliability in order to meet its always-on uptime commitments to its customers. Microsoft has seen no evidence of the kind of imminent emergency that would warrant DOE’s exercise of its emergency authorities. Moreover, there is no basis for invoking the extraordinary step of broad-scale intervention in the operations and price-setting of the competitive wholesale electricity markets. Rather, Microsoft’s experience shows that market-based regulatory policies enable the adoption of cost-effective technical innovations that lower consumer costs and enhance grid reliability, without the need for disruptive and unfair out-of-market interventions. We have found that a competitive electricity market structure is essential to driving lowest-cost supply while maintaining reliability. We’ve also found that a market-based approach best enables our development of innovative approaches that enhance grid reliability, lower costs and also achieve the cleaner generation demanded by our customers.

Microsoft has not seen any evidence to date that an interventionist approach is necessary to improve the resiliency, reliability, or any other aspect of the power system. Instead, Microsoft is deeply concerned that the particularized use of Federal Power Act emergency authorities sought by FirstEnergy

Solutions Corp. (“FirstEnergy”) in its March 29, 2018, Petition to the Secretary, is unwarranted, unnecessary, and unwise for energy consumers and the broader market of energy suppliers. The requested emergency intervention would reward uneconomic facilities and lagging technologies, forcing their subsidization by ratepayers, thus distorting energy markets in ways that will increase energy prices for all consumers, reduce competition, impede innovation, and actually stand in the way of continued expansion of a more resilient and environmentally sustainable grid.

FirstEnergy’s Petition, and the ongoing Federal Energy Regulatory Commission (FERC) rulemaking inquiry on grid resilience and reliability, certainly raise important questions about the ability of the power system to sustain itself during -- and to recover from -- sabotage and natural disasters. Microsoft believes that it is important to air these concerns and ensure they are being addressed. In many cases, companies like Microsoft have already been investing in assets and technologies to help increase the resiliency and reliability of the grid. Continuing the current market-based approach would support such innovation by Microsoft and other players in the energy market. An affordable, reliable, resilient -- and environmentally sustainable -- electricity system is vital to our business, as well to the economic and national security of the United States. Innovation and market operations remain the surest pathway to achieving fuel diversity and a more resilient grid. However, granting relief under the Petition would require the imposition of cost-of-service (“CoS”) regulation on the PJM market, thereby undermining market competition. Accordingly, Microsoft believes that the action requested by the Petition would not advance resiliency or reliability nor help assure energy security for the country.

Microsoft’s long-term energy planning needs benefit from a stable regulatory framework that embraces market-based structures. Competition in PJM and other FERC- jurisdictional power markets has benefited U.S. consumers by providing reliable, affordable electricity service and, more recently, has

facilitated a market-based platform that encourages deployment of innovative and cost-competitive clean energy products and services.¹

Microsoft has deep concerns that granting relief under the Petition would introduce instability into competitive markets that will increase both costs and price volatility for consumers, as well as reduce customer choice -- all undesirable outcomes without gains to grid resiliency.

I. Microsoft's extensive investment in the future of the U.S. power system as a large energy consumer, a clean energy purchaser, and an innovator in energy technology demonstrates the path toward enhanced grid reliability.

Microsoft has three principal areas of interest in the U.S. power sector. *First*, Microsoft is a large electric energy consumer with significant operations in multiple FERC-jurisdictional markets, including PJM. *Second*, this energy powers mission-critical operations for Microsoft, a key element of which is the highly reliable provision of electricity to run our business and meet our commitments to customers. For example, Microsoft's U.S. datacenter operations require a continuous uninterrupted supply of power to run Microsoft cloud services and live up to our always-on commitments to our customers. *Third*, to meet growing customer demands for sustainable products and services, Microsoft has made major public commitments to use power from clean energy sources. To help meet these commitments, Microsoft has announced major investments of its own in clean energy generation, cutting-edge technologies, and partnerships with utilities, all of which benefit from competition in power markets.

The Petition identifies reliability and resiliency as key risks facing PJM, highlighting several extreme weather events that led competitive energy markets to increase temporarily the deployment of baseload coal and nuclear generation – resources that are now faced with eventual phase out as being

¹ Several recent studies from premier academic and market sources have found that competitive power markets provide consumers with billions of dollars in savings of energy supply and services. Not only have competitive markets supported customer planning and reliability needs, but they have also served as a platform for deploying innovative clean energy technologies. See Steve Cicala, "Imperfect Markets versus Imperfect Regulation in U.S. Electricity Generation." University of Chicago, Jan 22, 2017. Available at: http://home.uchicago.edu/~scicala/papers/elec_gov_v_mkt_draft_2.pdf. Also see PJM Interconnection, "Resource Investment in Competitive Markets." May 5, 2016. Available at: www.pjm.com.

uneconomic. The Petition seeks to address the risks of occasional weather events by locking in the use of these baseload generation resources with subsidies, resulting in market-distorting price hikes for energy consumers. There is no credible evidence from any other source that these generators are needed to address reliability or resiliency needs of the PJM market or even that there is a reliability or resilience problem. Instead, Microsoft's own experiences in securing power in the PJM market, which represents one of Microsoft's biggest datacenter regions and hence one of its largest markets for securing power, is that there has not been a reliability or resiliency issue with its own energy procurement. Instead, the PJM market is one where Microsoft has successfully invested in new sources of energy generation and pursued other energy innovations. Microsoft firmly believes that market-based solutions and advanced energy technologies hold the key to increasing energy resilience and security in the United States. Microsoft's own experience has shown that innovations such as demand response, energy storage, and flexible fast-start resources -- resources facilitated by well-structured market operations -- can help increase reliability and resiliency and help prepare the U.S. power system for ever-greater quantities of generation from renewable energy.²

Nor have we seen any first-hand evidence that the growth in renewables or natural gas generation, or other nimble forms of grid resilience management, has resulted in a threat to grid reliability. We believe that this conclusion was borne out by the recent DOE Staff Report to the Secretary on Electricity

² The deployment of renewable energy continues rapidly across the United States, as corporate and public policy drive investment into the industry. According to the Advanced Energy Economy, 71 companies within the Fortune 100 have set public renewable energy or sustainability targets. According to the American Wind Energy Association, corporate and other non-utility customers held more than 50% of new wind power contracts signed in 2015. To put these numbers into context, the Lawrence Berkeley National Laboratory finds that today's existing state Renewable Portfolio Standards (RPS) goals would require more than 60 GWs of new renewables build by 2030 – the same GW development goals that the Renewables Energy Buyers Alliance has targeted for corporate buyers by 2025.

Markets and Reliability.³ Indeed, on the whole, PJM has demonstrated ample capacity through this mix of resources to meet even its most extreme demand.⁴

Microsoft's innovative power plan for its Cheyenne, Wyoming datacenter shows how highly capable onsite energy systems at our datacenters can be deployed to provide flexible capacity to the grid when needed, bringing new generation resources into the grid in a far more nimble manner. In Cheyenne, Microsoft offered the use of its onsite natural gas backup generators as a secondary resource for the grid.⁵ This helped increase reliability and resiliency for the grid without additional costs for ratepayers, in that it avoided the need for ratepayers to pay for a new power plant or to perpetuate old, uneconomic ones. Microsoft is deeply concerned that were the Petition granted, continued innovation by major energy consumers will be stifled and the motivation for existing power providers to seek out and cooperate with customers in realizing such innovative approaches will be dampened by the perception that extraordinary relief will instead become available.

II. Consumers benefit from competition in power markets, which have provided low cost, reliable power.

U.S. businesses require steady delivery of electricity to maintain their operations, and are also sensitive to energy costs and concerns about power system resiliency. While Microsoft shares the resiliency goals that seem to animate the Petition and FERC's regulatory proceedings on resiliency, we

³ U.S. Dep't of Energy, Staff Report to the Secretary on Electricity Markets and Reliability (August 2017)(available at https://energy.gov/sites/prod/files/2017/08/f36/Staff%20Report%20on%20Electricity%20Markets%20and%20Reliability_0.pdf)

⁴ PJM's most recent capacity auction yielded a 23.9% reserve margin, which well exceeds its target of 16.6%. PJM's analysis of the deactivation notice from FirstEnergy regarding the retirement of three units (in 2020 and 2021) found "the deactivation of these generating units is not expected to adversely affect the reliability of the PJM Transmission System due to a combination of remedial measures . . . With these measures, the PJM Transmission system will remain reliable, and therefore the generating units listed above may plan to deactivate as scheduled." PJM Comments on 202(c) application (available at: <http://www.pjm.com/-/media/documents/other-fed-state/20180430-motion-to-intervene.ashx>).

⁵ See Brad Smith, Microsoft's President and Chief Legal Officer, Blog Post (Nov. 14, 2016) ("With our latest energy deal, Microsoft's Cheyenne datacenter will now be powered entirely by wind energy, keeping us on course to build a greener, more responsible cloud.")(available at <https://blogs.microsoft.com/on-the-issues/2016/11/14/latest-energy-deal-microsofts->).

are deeply concerned that the precipitous actions called for could actually undermine resiliency by disrupting the core functions of wholesale markets. In particular, compensating selected generating units via CoS, while other generating units depend upon market-based payments, would disrupt the ability of markets to send accurate, least-cost price signals for new innovative investments. It is also difficult to understand how CoS in FERC-jurisdictional markets such as PJM could result in just and reasonable rates for consumers.

This approach of increased use of CoS in FERC-jurisdictional markets could also trigger recurring requests for policy intervention to prevent retirements by other uneconomic generating units that do not receive cost recovery assurance. Many older generating units that have been retired also faced situations virtually identical to that facing FirstEnergy. Thus, action to provide relief under this Petition seems likely to create an unintentional ‘un-virtuous cycle,’ where costs to consumers become increasingly detached from actual wholesale market prices. Indeed, FirstEnergy’s Petition cites that, “[i]n the past four years, over 11,000 MW of coal-fired generation has closed in PJM, the equivalent of a dozen large power plants.” Petition at 7, 19. The dynamic of an effort to resuscitate uneconomic generation could jeopardize some of the key benefits to consumers afforded by competitive power markets, namely transparent, best-in-price electricity that can be managed through a portfolio or with traditional financial instruments (e.g. hedging). The perception of a non-level playing field may also dissuade new resources from entering the market, thereby hampering the development of the lowest cost energy supply.

In energy-intensive industrial applications, like datacenters, these benefits are essential for maintaining reliable operations and planning new capital investments for our business. The availability of cost-competitive, reliable, market-based electricity rates in a consistent policy environment is a critical factor in Microsoft’s decision-making for developing and siting new datacenter sites. Where policy uncertainty threatens the stability of electricity markets, it undermines the attractiveness of these regions for future economic development.

III. Competitive markets encourage the technology innovation behind a cleaner and more resilient power system.

The very essence of market-based competition is that uneconomic sources of generation get replaced by more economic ones – not that they are simply perpetuated at rate-payer expense, as the Petition seeks. Those sources that are no longer able to compete on an economic basis are appropriately shut down as more economic replacement generation becomes available. That scenario is not an emergency – it is, rather, evolutionary, fully appropriate and beneficial. Competition in FERC-jurisdictional power markets has spurred innovation in a wide range of technologies that support a more resilient grid, including battery storage, fuel cells, and a host of renewable energy technologies. Transparent pricing, market-based services on a level playing field, and technology-neutral market governance in competitive markets represent durable foundations for ongoing innovation.

Conversely, CoS for selected units in competitive markets deviates from the core principle of market-based discovery of costs and value. As a result, relief under the Petition would send inaccurate price signals to consumers about the actual costs and market value of electricity. Among the key benefits of competitive markets is their ability to accurately reflect the least-cost sources of electricity production, such that corporate consumers have visibility into their cost structures and can make informed business decisions about investment and energy technology needs. By extension, accurate pricing sends signals to entrepreneurs and researchers to develop new energy products and services to meet consumer demands. If the power system becomes defined by distorted wholesale prices eroded by non-market CoS intervention within a competitive market environment, and imposes higher non-bypassable price increases on end-users, the resulting economic dynamics would stifle price signals for the development and deployment of innovative energy products and services.

Furthermore, the current competitive market rules overseen by FERC already contain adequate provisions to provide discrete targeted relief in the event there are individual, uneconomic generating

resources that must be retained to avoid unacceptable reliability risks throughout PJM and other competitive electricity markets. PJM and other RTOs/ISOs have the ability to make reliability must run designations of selected resources and FERC has the authority to approve such designations for CoS rates on a year-by-year or shorter basis. These designations are made pursuant to a set of well-developed rules under applicable FERC-approved tariffs. And while no RTO or ISO identified an urgent reliability or resilience problem, FERC, in response to the Secretary's Notice of Proposed Rulemaking on Grid Resilience, is now conducting an inquiry to develop a common understanding of resilience, identify how RTOs and ISOs assess resilience, and examine how RTOs and ISOs mitigate threats to resilience in a market context. Accordingly, there is no need for the heavy-handed imposition of CoS regulation here or independently of FERC's ongoing inquiry.

IV. DOE does not have the authority to invoke emergency powers under the Federal Power Act or the Defense Production Act to address this general, non-exigent market evolution.

The Petition seeks to distort DOE's authorities far beyond the limited relief valve that Congress created under the Federal Power Act. Section 202(c) was not designed to allow the Department to supersede FERC's authority over wholesale rates on a scale that could pertain here and on the basis of a slowly unfolding and fully predictable set of market dynamics. As the Department's own regulations make clear, this provision was designed to address imminent and unexpected, temporary outcomes: "“Emergency,” as used herein, is defined as an unexpected inadequate supply of electric energy which may result from the unexpected outage or breakdown of facilities for the generation, transmission or distribution of electric power.” 10 CFR Part 205.371. The Petition seeks to extend this limited grant to entirely new and largely unbounded circumstances that are otherwise addressed through PJM's and FERC's rulemaking processes and rate structures. It seeks to depict as an emergency the slow evolution of the electric generation market that has been underway for years. Petition at 26-27. Indeed, the only emergency the Petition cites is that facilities “continue to retire prematurely” (Petition at 12) -- hardly the imminent threat the Act and its regulations contemplate.

To the extent that the Petition may identify shortcomings with the regulation of natural gas distribution system reliability as the overall grid has become more dependent upon natural gas generation, Petition at 23 (citing the absence of a NERC equivalent for natural gas), it proposes the wrong cure. The logical remedy for this challenge is to enhance the reliability of the natural gas supply and transportation system and retain dual fuel capabilities, rather than to override competitive energy markets.

Nor does the Defense Production Act provide any other legitimate basis for action. That law, which was enacted in 1950 at the beginning of the Korean War, is designed to authorize rare and extraordinary market interventions critical for pressing national defense needs attendant to a wartime effort. The Defense Production Act does not allow the government to set prices or force market participants to buy products or services they do not wish to buy. 50 U.S.C. App. 2061 et seq.

Similarly, the more recently enacted FAST Act, which added new section 215A to the Federal Power Act, only authorizes the Department of Energy to issue temporary “orders for emergency measures” in response to a “grid security emergency.” A “grid security emergency” is defined as the occurrence or imminent danger of cyberattacks, electromagnetic pulse attacks, geomagnetic storms, and direct physical attacks that would have significant adverse effects on the reliability of critical electric infrastructure. Orders providing for “emergency measures” may last only fifteen days before an additional emergency finding is required. 16 U.S.C. section 215A(a)(7). These circumstances are not presented by the gradual and successful market evolution described by the Petition and the PJM response, nor is the remedy proposed limited in time as contemplated in the FAST Act.

Microsoft urges the Secretary to consider carefully the negative impacts on end-users regarding economic development, technology deployment, and innovation that would come from granting the extraordinary intervention that is being sought. The goals of grid reliability and resilience are better served through the on-going FERC and RTO/ISO regulatory processes that are convening power industry stakeholders to establish the technical and commercial directions necessary to prepare wholesale markets

for an influx of new technologies and consumer preferences that advance reliability and resiliency.

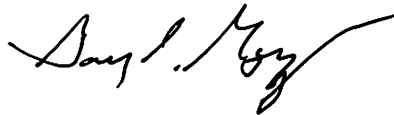
Please do not hesitate to reach out for more information should further perspective be helpful.

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