Nos. 14-840 & 14-841

IN THE
Supreme Court of the United States

FEDERAL ENERGY REGULATORY COMMISSION,
Petitioner,

AND

ENERNOC, INC., ET AL.,
Petitioners,

v.

ELECTRIC POWER SUPPLY ASSOCIATION, ET AL.,
Respondents.

On Petitions for a Writ of Certiorari to the United States Court of Appeals for the District of Columbia Circuit

MOTION FOR LEAVE TO FILE BRIEF AS *AMICUS CURIAE* AND BRIEF OF NRG ENERGY, INC. AS *AMICUS CURIAE* IN SUPPORT OF PETITIONS FOR A WRIT OF CERTIORARI

ABRAHAM H. SILVERMAN
CORTNEY MADEA
NRG ENERGY, INC.
211 Carnegie Center
Princeton, New Jersey 08540
(609) 524-4696

AARON M. PANNER
Counsel of Record
BRADLEY E. OPPENHEIMER
KELLOGG, HUBER, HANSEN, TODD, EVANS & FIGEL, P.L.L.C.
1615 M Street, N.W.
Suite 400
Washington, D.C. 20036
(202) 326-7900
(apanner@khhte.com)

February 17, 2015

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MOTION FOR LEAVE TO FILE BRIEF AS *AMICUS CURIAE*

Under Rule 37.2 of the Rules of this Court, NRG Energy, Inc. ("NRG") moves for leave to file the accompanying brief as *amicus curiae* in support of the petitions for a writ of certiorari. Thirty-four of the 38 parties have consented to the filing of this brief;* none of the remaining 4 parties has denied

* The following parties have consented to – or, in one case (American Forest & Paper Association), stated that it does not oppose – the filing of the accompanying *amicus* brief: American Forest & Paper Association, American Municipal Power, Inc., American Public Power Association, California Independent

consent, but they have not affirmatively provided written consent as of the time of the filing of this brief.

Amicus NRG sells power into the wholesale power market from both its traditional generating facilities and, increasingly, energy resources "distributed" across the electric grid. In addition, NRG sells electricity at retail to 2.9 million end-users in States that have restructured their retail regimes to allow customers to choose a competitive energy supplier.

Demand response technologies are an integral part of NRG's suite of innovative goods and services that allow end-user energy consumers to produce, conserve, and otherwise actively manage their usage of electricity. These technologies allow consumers to

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System Operator Corporation, Coalition of MISO Transmission Customers, Edison Electric Institute, Electric Power Supply Association, EnergyConnect, Inc., EnerNOC, Inc., Federal Energy Regulatory Commission, Lower Mount Bethel Energy, LLC, Madison Gas and Electric Company, Maryland Public Service Commission, Missouri Joint Municipal Electric Utility Commission, Missouri River Energy Services, National Rural Electric Cooperative Association, Old Dominion Electric Cooperative, Pennsylvania Public Utility Commission, PJM Industrial Customer Coalition, PJM Interconnection, LLC, PJM Power Providers Group, PPL Brunner Island, LLC, PPL Electric Utilities Corporation, PPL Energy-Plus, LLC, PPL Holtwood, LLC, PPL Maine, LLC, PPL Martins Creek, LLC, PPL Montour, LLC, PPL Susquehanna, LLC, Southern Minnesota Municipal Power Agency, Steel Producers, Viridity Energy, Inc., Wal-Mart Stores, Inc., and WPPI Energy. Written consents of these parties are being submitted contemporaneously with this brief.

The following parties had not responded to NRG's request for consent as of the time of the filing of this brief: California Public Utilities Commission, PSEG Energy Resources & Trade LLC, PSEG Power LLC, and Public Service Electric and Gas Company.

save money, to realize more value from their use of electricity, and to reduce their reliance on the electric grid. NRG's distributed energy resources include rooftop solar and other on-site renewable generation facilities, efficient combined heat and power facilities, electrical vehicle charging services, smart home energy management systems, and sophisticated microgrid solutions, as well as traditional demand response services. NRG uses all of these technologies both to provide energy to the wholesale market and to provide services important for the proper operation of the energy grid (known as "ancillary services"), used by wholesale energy markets.

To deploy capital and innovate efficiently, companies like NRG must be able to invest on the supply and demand side of the energy value chain, and be able to utilize those investments efficiently, without being made subject to a patchwork of state programs favoring incumbent monopoly utilities and frustrating innovation. Sound federal regulation across the entire scope of wholesale electricity markets will facilitate rational investment in *both* demand response and other innovative behind-the-meter resources on a level playing field with generation resources, to the benefit of the public interest.

NRG is a long-standing member of respondent Electric Power Supply Association ("EPSA"). NRG supported EPSA's challenge to Order 745 before the court of appeals because the level of compensation set in the order overcompensates providers of demand response, encouraging the inefficient curtailment of electricity production whose continued use would otherwise be economic (i.e., its economic value to the customer would exceed the cost of producing it). *See infra* note 5. At the same time, NRG agrees

with petitioners that the Federal Energy Regulatory Commission must have the authority to regulate wholesale demand response to fulfill its statutory mandate to ensure that wholesale rates are just and reasonable and to eliminate undue discrimination and preferences.

NRG should be granted leave to file the attached *amicus* brief.

Respectfully submitted,

ABRAHAM H. SILVERMAN
CORTNEY MADEA
NRG ENERGY, INC.
211 Carnegie Center
Princeton, New Jersey 08540
(609) 524-4696

AARON M. PANNER
Counsel of Record
BRADLEY E. OPPENHEIMER
KELLOGG, HUBER, HANSEN,
TODD, EVANS & FIGEL,
P.L.L.C.
1615 M Street, N.W.
Suite 400
Washington, D.C. 20036
(202) 326-7900
(apanner@khhte.com)

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INTEREST OF *AMICUS CURIAE*[1]

The interest of the *amicus curiae* is described in the accompanying motion for leave to file this brief.

SUMMARY OF ARGUMENT

I. Federal Energy Regulatory Commission ("FERC") regulation has helped to promote development of a robust *wholesale* market for demand response resources that helps to ameliorate several inefficiencies that raise the cost of wholesale power at times of peak demand. Electric power cannot currently be stored economically, and the cost of power production rises steeply when electrical generation is near its available capacity. But because retail electric rates typically do not vary based on time of use, among other reasons, demand for electricity is highly inelastic and does not generally respond directly to rising wholesale costs. Accordingly, energy production and wholesale prices rise beyond efficient levels at times of peak demand: that is, consumers will inefficiently consume electricity even though the cost of producing the electricity exceeds the economic value of using it.

The participation of demand response resources in wholesale markets directly addresses these inefficiencies. Not only does voluntary demand reduction to efficient levels reduce the wholesale price of electrical energy at times of high demand, but it also helps to improve the reliability of the electrical grid

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[1] Pursuant to Supreme Court Rule 37.6, counsel for *amicus* represent that they authored this brief in its entirety and that none of the parties or their counsel, nor any other person or entity other than *amicus* or its counsel, made a monetary contribution intended to fund the preparation or submission of this brief. Pursuant to Rule 37.2(a), counsel for *amicus* represent that all parties were provided notice of *amicus*'s intention to file this brief at least 10 days before its due date.

by providing a tool to reduce wholesale demand at times of unexpected supply limitations due, for example, to power plant or transmission outages.

II. The D.C. Circuit's rejection of Order 745 on jurisdictional grounds improperly expands the domain of exclusive state regulation. Section 205(a) of the Federal Power Act ("FPA"), 16 U.S.C. § 824d(a), provides that "all rules and regulations affecting or pertaining to . . . rates or charges" for "sale of electric energy subject to [FERC's] jurisdiction" are likewise within FERC's power to regulate. *See*, *e.g.*, *Mississippi Power & Light Co. v. Mississippi ex rel. Moore*, 487 U.S. 354, 371 (1988); *see also* 16 U.S.C. § 824e. Contrary to the court of appeals' view, demand response directly affects wholesale prices of electricity by competing head-to-head with generation resources. This is nothing like the indirect effect that, say, an increase in the cost of inputs to the production of wholesale power may have on wholesale prices.

Section 201(b) of the FPA does not carve wholesale demand response programs out of FERC's jurisdiction. That provision indicates that FERC jurisdiction does not extend to "any other sale of electric energy" other than "the sale of electric energy at wholesale in interstate commerce." 16 U.S.C. § 824(b)(1). But FERC reasonably determined that sale of demand response resources is not a sale of electric energy at all, and this restriction on FERC jurisdiction therefore does not apply. The court should have deferred to this reasonable construction of the statute. *See City of Arlington v. FCC*, 133 S. Ct. 1863, 1868, 1874-75 (2013).

III. If allowed to stand, the D.C. Circuit's decision will result in operational and economic inefficiencies

and will jeopardize the development and implementation of innovative new technologies in the electricity markets that have environmental and consumer benefits. New distributed energy resources blur the line between pure demand reduction of the type considered by the D.C. Circuit and sales of electricity for resale, which are clearly within FERC's purview. The D.C. Circuit's over-simplified treatment of demand response will impede investment and hamper progress towards deploying new technologies that provide substantial benefit to the public.

ARGUMENT

I. DISTRIBUTED RESOURCES, INCLUDING DEMAND RESPONSE, ADDRESS A SET OF PROBLEMS UNIQUE TO THE ELECTRICITY MARKET

A. The Electricity Market Has Unique Constraints That Create Inefficiencies

Several features of the electricity market – due to the inherent nature of electric energy and decades-old regulatory structures – create systemic inefficiencies that make the reliable provision of clean, low-cost electricity especially challenging at times of peak demand.

First, unlike most other commodities that can be bought and sold in markets, electricity cannot be economically stored in appreciable quantities. *See* Office of Enforcement, FERC, *Energy Primer: A Handbook of Energy Market Basics* 38 (July 2012) ("*Energy Primer*"), http://www.ferc.gov/market-oversight/guide/energy-primer.pdf. As a result, supply (generation) and demand (load) must balance in real time, *see id.*, or a variety of reliability problems, including brownouts and blackouts, may result.

Second, many of our Nation's electricity providers are not vertically integrated – that is, many retail providers of electricity (referred to as "load serving entities" or "LSEs") do not themselves generate the electricity that they sell to end-user customers. LSEs buy enough power from wholesale sellers to satisfy the needs of their customers. In large parts of the country, these transactions take place through organized markets run by regional organizations that balance generation with load, establish the wholesale price, and allow purchases to be settled between sellers and buyers at that price. *See id.* at 64-65. Generators bid the price at which they are willing to generate a particular quantity of electricity. LSEs bid quantities of expected demand. Generator bids are accepted, beginning with the lowest and moving up until all demand bids are satisfied. The price of the final bid that satisfies all demand for a given location is known as the "market clearing price" or "locational marginal price" and is paid uniformly for all generation. *See Sacramento Mun. Util. Dist. v. FERC*, 616 F.3d 520, 524 (D.C. Cir. 2010) (per curiam). LSEs, in turn, may be rate-regulated distribution utilities selling at regulated retail prices or, in States that permit competition, either regulated utilities or competitive entities selling at competitive prices.

Third, the wholesale price of electricity rises very steeply at times of peak demand. Markets naturally deploy the most efficient and cheapest generators first; additional quantity must be provided by less efficient generators that cost more to run. *See* FERC App. 22a (Edwards, J., dissenting). Maintaining some reserve generation capacity is also critical for reliability, and any shortfall in supply, including

these critical reserves, makes it impossible to operate the system securely.

Fourth, end-users' electricity demand generally does not respond to wholesale prices for a variety of reasons. The electric meter technologies needed to support billing for real-time prices are not widely disseminated. Retail ratemaking policies for regulated LSEs often favor rates based on average costs. Moreover, many States impose price ceilings or other regulatory constraints on competitive LSEs' abilities to adjust prices in real time. As a result, end-users generally do not know and are not required to pay the actual cost of electricity at any given time. *See* U.S. Dep't of Energy, *Benefits of Demand Response in Electricity Markets and Recommendations for Achieving Them* 7 (Feb. 2006) ("*DOE Report*"), http://energy.gov/sites/prod/files/oeprod/DocumentsandMedia/DOE_Benefits_of_Demand_Response_in_Electricity_Markets_and_Recommendations_for_Achieving_Them_Report_to_Congress.pdf. Unlike in ordinary markets, even a substantial increase in generation cost – and hence the price of wholesale power – will not significantly alter retail demand for electric energy. *See Energy Primer* 43-44.[2] While supply and demand generally match efficiently in ordinary markets, the lack of dynamic retail price signals means that demand must be more actively managed in order to align efficiently with supply.

Taken together, these constraints tend to result in higher than optimal loads and higher than optimal

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[2] For this reason, the term "demand response," as defined in 18 C.F.R. § 35.28(b)(4), is not, as respondents termed it below, "FERC-speak." Rather, these programs are developments to ensure that *demand responds* to increases in price – something that prior regulation did not effectively ensure.

prices at times of highest demand. If generation or transmission capacity falls short of these excessive demand levels, the grid operator will take a series of FERC-mandated steps to limit the negative consequences, starting with voltage reductions or "brownouts" and ending, in more severe cases, with mandatory disconnection – the sudden termination of all retail sales – of large blocks of retail customers through load shedding or "rotating blackouts" to restore balance. If these draconian measures to reduce load to meet available supply are not successful, uncontrolled widespread blackouts may result. Regulators and industry participants must look to additional market mechanisms, including demand response, to avoid those problems and keep the entire bulk power system operating reliably with efficient prices and quantities.

B. Demand Reduction and Other Distributed Energy Resources Allow Customers To Address These Inefficiencies

Distributed energy resources, including demand response, provide consumers with the ability to modify their own consumption of electricity drawn from the wholesale market, and hence can reduce demand at times of high wholesale electricity market prices. Properly designed demand response programs can increase the efficiency of the wholesale market and the reliability of the entire electric grid. To achieve these efficiencies, such programs and practices must be integrated into the wholesale market – which can only be accomplished under FERC's jurisdiction.

When demand response can be achieved reliably and verifiably – for instance, when customers with well-established baseline loads are able to commit to curtail or time-shift measurable load amounts – they

are considered "dispatchable." *Energy Primer* 47. Dispatchable demand response resources can be used to reduce loads at times of peak usage or critical emergencies, such as on hot summer afternoons or when a major generator or transmission line unexpectedly fails. *See DOE Report* 8.

For several years, providers of demand response resources have been permitted to bid those resources into next-day and real-time energy markets operated by Independent System Operators and Regional Transmission Organizations on the wholesale side of the market. Under FERC Order 719, dispatchable demand resources can be bid directly, either by the end-user itself if the end-user's electricity loads are significant enough – for example, a steel mill – or else by an aggregator that can place a bid on behalf of a collection of smaller users, such as large retail establishments or office buildings. *See generally* Order 719, *Wholesale Competition in Regions with Organized Electric Markets*, 125 FERC ¶ 61,071 (2008), *aff'd as modified on denial of reh'g*, Order 719-A, 128 FERC ¶ 61,059 (2009). These demand response resources function in the wholesale market as direct substitutes for additional generation resources – functioning as virtual power plants – helping to balance supply and demand when demand threatens to outstrip supply.

Demand response can thus provide significant increases in economic efficiency and other benefits to the wholesale market. Those benefits flow through to retail customers in terms of both lower prices and increased reliability – benefits that are in addition to the savings reaped by individual customers who provide the demand response services. During times of peak demand, the generation resources that need

to be brought online are the least efficient. Thus demand response resources, facing an efficient wholesale market price, provide a host of benefits ranging from lower prices to increased reliability to cleaner air. *See* FERC App. 79a-80a, ¶ 33. Over the long term, by reducing the need to invest in generation resources to meet occasional periods of peak demand, demand response resources can also free up capital for investment in other, more valuable products and services, including innovative technologies on both the wholesale and retail sides of the electricity market. *See* Int'l Energy Agency, *Empowering Consumer Choice in Electricity Markets* 16 (Oct. 2011) ("*IEA Report*") (explaining that, in the European electricity grid, without demand response, the *ten* peak load hours in a year would require approximately *seven gigawatts* of installed capacity, representing 1.7% of total capacity, and that, in the United States, reducing demand by 2% during just the ten peak load hours in a year would save $67 million annually), http://www.iea.org/publications/freepublications/publication/empower.pdf; The Brattle Group, *The Power of Five Percent* 5-6 (May 16, 2007) (estimating that a 5% overall peak load reduction through demand response produces $5-10 billion per year in short-term benefits and another $3 billion per year in long-run benefits), http://www.brattle.com/system/publications/pdfs/000/004/740/original/The_Power_of_Five_Percent_May_2007.pdf?1378772126.

Furthermore, dispatchable demand response that is integrated into the wholesale market's clearing of supply and demand can improve the reliability of the entire electric system by providing a mechanism to reduce usage and balance the grid on short notice. *See DOE Report* 28. The quick response time coupled with physical limits on adding more generation

(in cases of transmission failures, for example) make demand response an efficient way to respond to emergencies and avoid blackouts. *See id.* at 8.

C. State-Regulated Demand Response Programs Are No Substitute for FERC Regulated Wholesale Demand Response Programs

To be sure, demand response programs can be and are offered at the retail level by state-regulated LSEs without being dispatched into the wholesale market. Such programs, however, are complementary to, and not a substitute for, wholesale demand response programs. By itself, a state-regulated demand response program is unlikely to create the efficient outcomes discussed above for several reasons. *First*, distribution utility programs are typically not integrated with the wholesale market clearing process where demand response can efficiently compete with generation – and likely could not be under the D.C. Circuit's decision.[3] *Second*, regulated LSEs' demand response programs are typically focused on reducing the distribution utility's costs, not on improving the efficiency and reliability of the wholesale power system. The costs of retail demand response programs are often recovered from captive retail customers. Thus, a demand response program

[3] If the decision below were allowed to stand, not only would FERC be disabled from regulating the level of compensation for wholesale demand response, but the States would likely be barred from doing so as well. *Cf. PPL EnergyPlus, LLC v. Nazarian*, 753 F.3d 467 (4th Cir. 2014) (state laws designed to promote generation facilities by governing rate for sales into wholesale capacity markets preempted), *petitions for cert. pending*, No. 14-614 (filed Nov. 25, 2014) & No. 14-623 (filed Nov. 26, 2014); *PPL EnergyPlus, LLC v. Solomon*, 766 F.3d 241 (3d Cir. 2014) (same), *petitions for cert. pending*, No. 14-634 (filed Nov. 26, 2014) & No. 14-694 (filed Dec. 10, 2014).

operated by a regulated LSE may be further skewed towards increasing the utility's earnings rather than efficiently reducing energy use and costs.

Third, distribution utility demand response programs are often closed to competitive demand response providers and, instead, limited to programs provided by the distribution utility itself. This limits competitive participation and excludes an entire universe of competitive smart energy technologies that are available for demand response and related purposes today and that are evolving rapidly. This creates buyer's side market power in the demand response market, which will suppress innovation and consumer benefits from demand response.[4]

Fourth, there are literally thousands of regulated retail utilities across the United States, each with its own tariffs and rules and operating under a maze of state, municipal, co-operative, and other regulatory authorities. The patchwork of demand response programs and rules that would result from this splintered regulatory authority would effectively prevent

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[4] For example, PJM, the grid operator for 13 States and the District of Columbia, recently interpreted the court's decision – erroneously, in our opinion – as prohibiting competitive demand response firms from participating directly in the FERC-jurisdictional market, while allowing LSEs to continue placing demand bids into the market. This would eliminate the class of demand-side management firms that "have historically accounted for a majority of the demand response registered in PJM." *See* PJM Interconnection, L.L.C., *Revisions to the Reliability Pricing Market ("RPM") and Related Rules in the PJM Open Access Transmission Tariff ("Tariff") and Reliability Assurance Agreement Among Load Serving Entities ("RAA")*, Docket No. ER15-852-000, at 3 (FERC filed Jan. 14, 2015), http://elibrary.ferc.gov/idmws/file_list.asp?document_id=14290658. PJM has stated, however, that it intends to withdraw those tariff changes if this Court grants review. *See id.* at 6.

efficient investment or operation of demand response resources, as well as harm the rest of the wholesale market.

To counter concerns over buyer-side market power, FERC gave end-users and aggregators the ability to bid in the wholesale markets directly, without the need for an LSE intermediary. *See* Order 719, ¶ 3. Through this process, aggregators can create demand response resources that are able reliably to deliver a reduction in consumption, benefitting the efficiency and reliability of the wholesale market. *See DOE Report* 27-29. Furthermore, by ensuring that entities purchasing demand response resources can participate directly in wholesale markets, FERC regulation ensures that end-users have a choice of whether to deal with a monopsonist buyer or sell to open access markets directly or through aggregators.

As a result of FERC regulations authorizing direct participation by demand response resources in the wholesale market, that market is highly competitive, and firms compete to attract and retain customers by delivering innovative energy management strategies. If priced appropriately,[5] compensation for demand

[5] NRG's principal objection to Order 745 was its failure to provide economically rational prices for wholesale demand response. End-users should consume electricity when its value exceeds the cost of producing it and not otherwise. Because forgoing consumption always brings the benefit of avoiding the retail price of electricity, the appropriate wholesale price for demand response resources should *not* be the full wholesale price for generation resources – a price that reflects the marginal cost of generation – but instead should be adjusted to reflect the benefit to consumers of the avoided retail price. Otherwise, wholesale demand response will discourage efficient consumption. *See generally* Brief of Robert L. Borlick et al., *Electric Power Supply Ass'n v. FERC*, Nos. 11-1486 et al. (D.C. Cir. filed June 13, 2012).

response in the wholesale market ensures efficient investment in those resources and encourages the development of innovative new technologies. *See*, *e.g.*, FERC App. 58a, ¶ 8.

II. THE D.C. CIRCUIT'S HOLDING IMPROPERLY RESTRICTS FERC'S JURISDICTION TO ESTABLISH RULES AND REGULATIONS THAT AFFECT THE WHOLESALE MARKET FOR ELECTRIC ENERGY

Contrary to the majority's decision, authority to regulate sales of demand response resources in the wholesale market falls squarely within the agency's jurisdiction to establish "rules and regulations affecting or pertaining" to wholesale sales. 16 U.S.C. § 824d(a). Furthermore, because FERC reasonably determined that sales of demand response are not "sale[s] of electric energy" within the meaning of § 201(b) of the FPA, *id.* § 824(b)(1), nothing in the FPA restricts FERC's jurisdiction over wholesale sales of demand response resources.

A. FERC Has Jurisdiction over Wholesale Sales of Demand Response

Section 201(b) of the FPA gives FERC jurisdiction over "the sale of electric energy at wholesale," while denying FERC jurisdiction over "any other sale of electric energy." 16 U.S.C. § 824(b)(1). Section 205 further extends FERC jurisdiction to "rates and charges made . . . for or in connection with the transmission or sale of electric energy subject to the jurisdiction of [FERC]," including "practices[] and regulations affecting such rates and charges." *Id.* § 824d(a), (c); *see also New York v. FERC*, 535 U.S. 1, 16-17 (2002). This "affecting" jurisdiction permits FERC to regulate those practices that directly affect wholesale rates.

Demand response and distributed energy resources affect wholesale rates directly. Energy markets employ elaborate mechanisms and intensive effort to determine the exact point where the supply and demand curves cross. Small changes of supply or demand can cause large swings in wholesale price. *See IEA Report* 15-16. It is accordingly hard to imagine regulations with more direct effect on wholesale prices than rules governing the terms under which demand response and distributed energy resources are authorized to compete with generation resources in wholesale markets.

The wholesale market participation of those resources can reduce wholesale energy costs by hundreds of millions of dollars over the course of a year because wholesale demand response resources can effectively – and substantially – moderate peak pricing in wholesale markets. *See IEA Report* 16; *see also DOE Report* 37 (observing that, "even in regional markets," demand response can produce a cumulative wholesale price reduction "in the billions of dollars"). It is thus clear that wholesale demand response rules "affect[]" wholesale rates and charges. 16 U.S.C. § 824d(c). When FERC concluded that Order 745 was within its jurisdiction, *see* FERC App. 137a, ¶ 112 ("[D]emand response in organized wholesale energy markets . . . directly affects wholesale rates."), it was acting within its authority. And, even if that conclusion were subject to debate, it should be beyond dispute that FERC's conclusion to that effect was reasonable and therefore lawful. *See City of Arlington v. FCC*, 133 S. Ct. 1863, 1868, 1874-75 (2013); *Chevron U.S.A. Inc. v. Natural Res. Def. Council, Inc.*, 467 U.S. 837, 842-44 (1984).

B. Incidental Effects on Retail Markets Do Not Eliminate FERC's Jurisdiction

While granting FERC jurisdiction over sales of electricity at wholesale, § 201(b) also reserves to States jurisdiction over "any other *sale* of electric energy." 16 U.S.C. § 824(b)(1) (emphasis added). The D.C. Circuit, however, improperly equated retail *sales* with the retail *market*. The majority opinion explained: "Demand response – simply put – is part of the retail market. It involves *retail* customers, their decision whether to purchase *at retail*, and the levels of *retail* electricity consumption." FERC App. 11a.

But § 201(b)'s restriction on FERC jurisdiction is more limited than this. The retail *market* includes the universe of energy alternatives and choices available to end-user customers. The rates charged for retail sales of electricity, along with the rates, terms, and conditions that govern those sales, are just one aspect of the retail market. The retail market also includes such things as customer-owned solar panels or back-up generators, other distributed energy resource investments, and more efficient devices for using and managing energy in the customer's home or facility. Although the FPA reserves to States jurisdiction over "any other *sale* of electric energy," it does not broadly reserve to States exclusive jurisdiction over any regulations that might affect or interact with the retail electricity market. Although Order 745 involves compensation for retail customers who have entered the wholesale market, FERC determined that customers' decisions *not* to purchase electricity are not "other sale[s]" of electri-

cal energy that are carved out from FERC jurisdiction.[6]

That determination was reasonable, particularly when considering the complex interactions that take place in the electricity markets. When an end-user elects to install a micro-turbine in its basement or solar panels on its roof, or simply reduce consumption during peak periods, it eliminates the need to purchase that amount of energy from its retail provider. As FERC recognized in Order 745-A, at a minimum, it is ambiguous whether *forbearing* from purchasing electricity at retail involves a retail *sale* of electric energy jurisdictionally reserved to States. FERC App. 199a, ¶ 32. Faced with that ambiguity, FERC reasonably concluded that the load reduction was not a retail sale and that FERC could assert jurisdiction. As Judge Edwards explained:

> The statute, to my mind, is ambiguous regarding whether forgone consumption constitutes a "sale" under section 201(b)(1). Because of this ambiguity, the Act is also ambiguous as to whether a rule requiring administrators of wholesale markets to pay a specified level of compensation for such forgone consumption constitutes "direct regulation" of retail sales that would contravene the limitations of section 201.

Id. at 20a-21a.

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[6] Indeed, if a customer's decision to forgo consumption is a sale, it is properly characterized as a sale "at wholesale" – that is, the forgone consumption is akin to a commodities contract wherein the purchaser may opt to resell the contract prior to delivery, thereby liquidating its position at the prevailing market price. *See* 16 U.S.C. § 824(b)(1) (granting FERC jurisdiction over "the sale of electric energy at wholesale").

Given the clear grant of jurisdiction under § 205 and the ambiguity of the restriction on FERC's authority contained in § 201(b) as applied to this issue, the D.C. Circuit majority erred by allowing its reading of the ambiguous provision to trump the express authorization provided by § 205. *Cf. New York v. FERC*, 535 U.S. at 22 (explaining that a general policy statement "'cannot nullify a clear and specific grant of jurisdiction'") (quoting *FPC v. Southern California Edison Co.*, 376 U.S. 205, 215 (1964)).

Moreover, FERC reasonably concluded that, under the FPA's jurisdictional provisions, it could properly induce retail customers to participate in the wholesale market, even if there would be some downstream effects in the retail market. Any regulation in the wholesale market will impact the retail market, because price or quantity changes in the electricity LSEs buy will always impact how they charge downstream consumers.[7] And the effects on the retail market in this case are indirect; FERC did not attempt to regulate retail sales, and retail sales could still proceed on the same terms under Order 745 as they could have before the order was created, because FERC has reserved authority for state regulations. *See* 18 C.F.R. § 35.28(g)(1)(i)(A). The D.C. Circuit erred by failing to defer to FERC's reasonable judgment. *See City of Arlington*, 133 S. Ct. at 1868, 1874-75.

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[7] Even when LSEs cannot change their pricing in real time due to technological or state regulatory constraints, they may still pass along these costs in the form of capacity charges or other fees.

III. DENYING FERC JURISDICTION OVER WHOLESALE DEMAND RESPONSE CREATES SUBSTANTIAL REGULATORY GAPS

Wholesale electricity markets are extremely complex, with many features that interact in sometimes unexpected ways. The D.C. Circuit did not consider aspects of the electricity markets aside from demand response and consequently did not recognize the problematic regulatory inconsistencies its decision creates.

A. The D.C. Circuit's Decision Creates Regulatory Inconsistencies That Threaten Development and Use of Innovative Technologies

The United States is experiencing a wave of innovation in electric technologies, many of which are deployed by retail end-users but that nevertheless contribute directly to the efficient operation of wholesale markets. This innovation is threatened by the regulatory gaps created by the D.C. Circuit's ruling.

Technologies are currently being deployed to participate in wholesale markets through demand response and other programs. And, although the court below treated a reduction of energy purchases as a retail sale, the same devices that deliver reductions of consumption can also deliver increases in production, including production that can be sold into wholesale markets or that can interact with wholesale markets in other ways. For example, when the frequency of the grid is too low (usually because demand slightly exceeds supply), regulation service (that is, maintaining the grid's frequency) may be provided by both reducing the rate of charg-

ing of batteries – reducing consumption – or increasing the rate of production of electricity by combined heat and power devices across a "fleet" of aggregated retail customers. Other ancillary grid services – that is, wholesale market services that improve the operation of the grid itself – may also be provided by distributed resources, again through a combination of reducing consumption and increasing production (or vice-versa).[8]

There is nothing inherently "retail" or "wholesale" about electricity; there is nothing inherently retail or wholesale about demand response. The demand response programs that fall within FERC's jurisdiction are critical to efficient functioning of *wholesale* markets for electric energy; that is inconsistent with the D.C. Circuit's insistence that demand response is inherently a retail product. NRG's current offerings are capable of interacting with wholesale electricity markets by supplying both demand response and electric energy for resale. Distributed solar panels may reduce the amount of grid power consumed directly by the customer or feed excess electricity into the grid for resale. Smart thermostats in homes and buildings allow the owner to adjust temperatures

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[8] Ancillary services are those that are necessary for the operation of the electrical grid itself. These services include operating reserves, which are resources that can be brought online quickly to increase supply or reduce demand to balance the grid and prevent outages, and "regulation" or "frequency" response, which involves modulating power generation or consumption to maintain the proper frequency in the grid. *See Energy Primer* 59. Ancillary services fall within FERC's § 201(b) jurisdiction over the transmission of electricity in interstate commerce. 16 U.S.C. § 824(b)(1); *see also New York v. FERC*, 535 U.S. at 17 ("[t]here is no language in the statute limiting FERC's *transmission* jurisdiction to the wholesale market").

automatically or remotely, reducing or potentially increasing power drawn from the grid on command. This can reduce retail consumption or be aggregated and sold into the wholesale market. Battery-powered electric vehicles plug in to charge, with charging systems that can intelligently shift electricity use to overnight hours when wholesale prices are lowest, while also varying the rate of charging and, potentially, supplying ancillary services from vehicles to the wholesale market. Innovative combined heat and power devices can heat buildings while also producing supplemental electricity that is cheaper or cleaner than the LSE's grid-sourced power, or provide backup power during grid outages.

Under the D.C. Circuit's ruling, these services would be regulated under different and potentially conflicting jurisdictional regimes. Demand response and other services that deliver reductions in consumption from the grid would presumably be subject to exclusive state regulation, with all the distortions and barriers to competition identified above. Sales of excess generation would remain within FERC's § 201(b) jurisdiction as sales of electricity for resale. *See* 16 U.S.C. § 824(b)(1). And, although it has been considered settled that ancillary grid services also fall within FERC's jurisdiction under §§ 201(b)(1), 205, and 206, *see id.* §§ 824(b), 824d, 824e; *see also New York v. FERC*, 535 U.S. at 16-17, FERC authority over certain ancillary services that depend on reductions or increases in retail consumption may be thrown into confusion.

These issues of overlapping jurisdiction become even more complex when considered in the context of microgrids. Microgrids are complex integrated networks of generation and consumption devices that

can operate independent of the grid or in connection with it. *See* U.S. Dep't of Energy, *How Microgrids Work* (June 17, 2014), http://energy.gov/articles/how-microgrids-work. Depending on market conditions and other considerations, microgrid customers can precisely tailor their self-generation and outside consumption decisions to support their energy needs while minimizing cost (or maximizing revenue or environmental attributes) at any given time. But the microgrid's decision-making becomes much more difficult if different aspects of its interaction with the wholesale market are subject to different regulatory regimes – or if it is unclear to which regulatory regime they are subject.

If allowed to stand, the D.C. Circuit's ruling would likely force regulatory agencies and courts across the country each to draw an artificial line between "pure" reduction in retail consumption, which would be state jurisdictional, and power production services and (at least under current law) ancillary services, which would remain within FERC's jurisdiction. Yet innovative technologies continually cross any such artificial lines in both directions, as they maximize customer value by reducing direct customer costs and simultaneously helping to improve the overall efficiency of the wholesale power market.

The fact that the D.C. Circuit's decision requires such an artificial and unworkable division, leading to inconsistent line-drawing in hundreds of different jurisdictions, is evidence that the D.C. Circuit failed to distinguish between the retail "sales" regulated by States under § 201(b) and the more general retail "market," which is not specifically jurisdictionally assigned by the FPA. *See supra* pp. 14-16. This jurisdictional error threatens to have profound real-

world effects. These innovative technologies, and others like them, involve switching between modes – on and off, charging and discharging, generation and consumption – repeatedly and in coordinated ways. They can operate efficiently only when they are subject to a coherent national regulatory regime. Such a national regime, supporting regional wholesale markets and the commercial, competitive deployment of distributed energy resources across multiple States, requires giving appropriate scope to federal jurisdiction. If a solar panel, battery bank, or combined heat and power system switches not only between modes but also in and out of regulatory regimes many times each day, developers and adopters of those technologies will not be able to deploy them efficiently. The resulting uncertainty will deter investment. *See Morgan Stanley Capital Grp. Inc. v. Public Util. Dist. No. 1 of Snohomish Cnty.*, 554 U.S. 527, 551 (2008) (recognizing that regulatory uncertainties "'can have a chilling effect on investments and a seller's willingness to enter into long-term contracts and this, in turn, can harm customers in the long run'") (quoting Final Rule, *Market-Based Rates for Wholesale Sales of Electric Energy, Capacity and Ancillary Services by Public Utilities*, 72 Fed. Reg. 39,904, 39,906 (July 20, 2007)).

B. The D.C. Circuit's Decision Will Lead to Many Economic and Operational Inefficiencies

The constraints on operation of wholesale electricity markets are national in scope. Without a coherent national regulatory framework, States will be left to attempt to solve these national problems on a patchwork basis. They are unlikely to be able to do so.

A patchwork regulatory system will result in major economic inefficiencies. If demand response resources cannot access the wholesale market, regulated LSEs can use their monopsony power to dictate the price for demand response participation and to arbitrage against their non-competitive regulated retail energy rates. The two sides need not match, and regulated LSE buyers can induce less than optimal amounts of demand response and favor their regulated rate-base assets while stymieing competition in the retail market. *See DOE Report* 78.

Additionally, net buyers of energy may find it economically advantageous to induce inefficient levels of demand response to enter the market by over-paying. *Cf. PJM Interconnection, LLC*, 143 FERC ¶ 61,090 (2013) (explaining that net buyers have an economic interest in suppressing capacity market prices). As a result, the LSE may choose to pay demand response program customers more than the economic value of their forgone consumption, creating inefficiencies that would harm the market as a whole.

FERC, as a regulator charged with promoting competition, is required to prevent undue discrimination and preference in the organized energy markets. *See* 16 U.S.C. § 824e. The D.C. Circuit's decision, however, leaves it without the means of achieving its statutory responsibilities.

These economic concerns also affect innovation incentives. Cost and return on investment are the largest hurdles to end-users' adoption of innovative technologies like microgrids. *See* Robert Liam Dohn, Siemens AG, *The Business Case for Microgrids* 7 (2011), http://www.energy.siemens.com/us/pool/us/energy/energy-topics/smart-grid/downloads/The%20

business%20case%20for%20microgrids_Siemens%20white%20paper.pdf. Those concerns can be alleviated through reliable benefits, including revenue from providing demand response or ancillary services. If compensation is left to state regulation, LSE programs may not provide enough of an incentive for customers to install these technologies. *See* Ranjit Bharvirkar et al., *Retail Demand Response in Southwest Power Pool* 19 (Jan. 2009) (discussing insufficient incentives by LSEs), http://energy.gov/sites/prod/files/oeprod/DocumentsandMedia/Retail_DR_in_SPP.pdf; Order 719, ¶ 165 (explaining that undercompensation may "thwart innovation"). On the other hand, access to the competitive wholesale market for compensation for demand response helps assure industry participants that their innovative technologies will be able to generate revenue and produce a satisfactory return on investment in a well-regulated market designed to support efficient investment. *See* Order 719, ¶ 203 ("[W]ith better price signals, more buyers would find it worthwhile to invest in technologies that allow them to respond to prices. . . . [S]uch price signals would encourage entry by generators, investment in new technology, and more participation in demand response programs."). Recognizing FERC's proper jurisdiction over demand response programs will ensure that industry participants can continue developing and implementing new technologies that improve the electricity market as a whole.[9]

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[9] Distributed energy resources and demand response provide non-economic benefits as well. Grid reliability, for instance, is an issue of national security and interstate commerce that transcends state lines. *See New York v. FERC*, 535 U.S. at 7; Office of Inspector General, U.S. Dep't of Energy, *Federal Energy*

CONCLUSION

The Court should grant the petitions.

Respectfully submitted,

ABRAHAM H. SILVERMAN
CORTNEY MADEA
NRG ENERGY, INC.
211 Carnegie Center
Princeton, New Jersey 08540
(609) 524-4696

AARON M. PANNER
Counsel of Record
BRADLEY E. OPPENHEIMER
KELLOGG, HUBER, HANSEN,
TODD, EVANS & FIGEL,
P.L.L.C.
1615 M Street, N.W.
Suite 400
Washington, D.C. 20036
(202) 326-7900
(apanner@khhte.com)

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Regulatory Commission's Monitoring of Grid Cyber Security 5 (Jan. 2011), http://www.ferc.gov/industries/electric/indus-act/reliability/cybersecurity/doe-ig-report.pdf. Demand response is a powerful tool for preserving grid reliability, but the D.C. Circuit's decision will deny FERC the use of that tool even as it tries to address interstate problems. Moreover, even when state and local authorities make serious attempts to address these large-scale issues, local areas simply may not have enough demand response resources to achieve the benefits associated with those programs. *See* Bharvirkar, *supra*, at 19 (describing direct load control demand response program in Oklahoma that failed because air conditioners enrolled in program were not large enough).