ORAL ARGUMENT SCHEDULED FOR JUNE 2, 2016

IN THE UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

STATE OF WEST VIRGINIA, *et al.*, Petitioners, v. UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, and REGINA A. MCCARTHY, Administrator, Respondents.	On Petition for Review of Final Action of the United States Environmental Protection Agency Case No. 15-1363 (consolidated with Nos. 15-1364, 15-1365, 15-1366, 15-1367, 15-1368, 15-1370, 15-1371, 15-1372, 15-1373, 15-1374, 15-1375, 15-1376, 15-1377, 15-1378, 15-1379, 15-1380, 15-1382, 15-1383, 15-1386, 15-1393, 15-1398, 15-1409, 15-1410, 15-1413, 15-1418, 15-1422, 15-1432, 15-1442, 15-1451, 15-1459, 15-1464, 15-1470, 15-1472, 15-1474, 15-1475, 15-1477, 15-1483, 15-1488)

UNOPPOSED MOTION BY GRID EXPERTS BENJAMIN F. HOBBS, BRENDAN KIRBY, KENNETH J. LUTZ, JAMES D. MCCALLEY, & BRIAN PARSONS FOR LEAVE TO PARTICIPATE AS *AMICI CURIAE*

Pursuant to Federal Rule of Appellate Procedure 29(b) and D.C. Circuit Rule 29(b), Benjamin F. Hobbs, Brendan Kirby, Kenneth J. Lutz, James D. McCalley, and Brian Parsons (collectively, "Grid Expert *Amici*") respectfully move for leave to participate as *amici curiae* in support of the Respondents Environmental Protection Agency ("EPA") and Regina A. McCarthy, EPA Administrator.

Grid Expert *Amici* consulted with the parties to these consolidated cases regarding this motion. Counsel for the federal respondents and for environmental non-governmental organization respondent-intervenors have provided the consent of their clients to this motion, as did counsel for several other movant intervenors in support of federal respondents, including: Advanced Energy Economy; Calpine Corporation; the City of Austin d/b/a Austin Energy; the City of Los Angeles, by and through its Department of Water and Power; The City of Seattle, by and through its City Light Department; National Grid Generation, LLC; New York Power Authority; Pacific Gas and Electric Company; Sacramento Municipal Utility District; Solar Energy Industries Association; and Southern California Edison Company. Additionally, counsel for petitioners Denbury Onshore, LLC; State of Missouri; and petitioners in Case No. 15-1488 provided the consent of their clients. Counsel for all other parties stated that their clients did not oppose this motion or took no position as to this motion.

In support of this motion, Grid Expert *Amici* state as follows:

1. Grid Expert *Amici* have expertise in the structure, operation, and economics of the U.S. power system; integration of low- and zero-carbon generation sources into the power system; power-system reliability and planning; and electric grid modernization.

2. Benjamin Hobbs is the Theodore M. and Kay W. Schad Professor in Environmental Management in the Department of Geography and Environmental Engineering at Johns Hopkins University. He has a joint appointment in the Department of Applied Mathematics and Statistics, and directs the Johns Hopkins University Environment, Energy, Sustainability and Health Institute. His research focuses on electric power and energy market planning, risk analysis, and environmental and energy systems analysis and economics. He is Chair of the California Independent System Operator Market Surveillance Committee and a Fellow at the Institute of Electrical and Electronics Engineers ("IEEE") and the Institute of Operations Research and Management Science. He was also a consultant to the PJM Independent System Operator, and developed the methodology it uses to evaluate the capacity market demand curve. From 1995 to 2002, he was consultant to the Federal Energy Regulatory Commission's Office of the Economic Advisor. He holds a Ph.D. in Civil and Environmental Engineering from Cornell University.

3. Brendan Kirby is a private consultant with clients including the Hawaii Public Utilities Commission, National Renewable Energy Laboratory, Utility Variable-Generation Integration Group, Electric Power Research Institute, American Wind Energy Association, Oak Ridge National Laboratory, and others. He has forty-one years of electric grid experience, and has published over 180

papers, articles, book chapters, and reports on power system reliability and integrating renewable energy generation into the power grid. He is a member of the North American Electric Reliability Corporation's Essential Reliability Services Task Force, and previously served on its Standards Committee. He retired from the Oak Ridge National Laboratory's Power Systems Research Program. He is a Licensed Professional Engineer with an M.S. degree in Electrical Engineering (Power Option) from Carnegie-Mellon University and a B.S. in Electrical Engineering from Lehigh University.

4. Kenneth J. Lutz is an Adjunct professor at University of Delaware, where he teaches a specially designed course on the smart grid. He has decades of experience in the regulation of utilities. He founded AMR Strategies, LLC, to help utilities modernize their grids. Previously, he served as an IEEE/American Association for the Advancement of Science Congressional Fellow for United States Senator Ron Wyden, where he played a key role in drafting federal legislation for renewable energy and energy efficiency. He has a Ph.D. in electrical engineering from the Johns Hopkins University and a B.E.E. from the University of Delaware.

5. James D. McCalley is the London Professor of Power System Engineering in the Electrical and Computer Engineering Department at Iowa State University. He has graduated twenty-eight Ph.D. students under his supervision

and is the author of over 230 publications in electric power systems engineering. His areas of research include: transmission planning, power-system security, power-system dynamics, wind energy, long-term investment planning for energy and transportation systems at the national level, and power-system decision problems under uncertainty, including those encountered in operations and planning. Dr. McCalley has been an IEEE Fellow since 2004. He chaired the IEEE Power and Energy Society's Subcommittee on Risk, Reliability, and Probability Applications from 2004 to 2006. He has been involved in the International Conference on Probabilistic Methods Applied to Power Systems (PMAPS) since PMAPS-4 in 1994, and served as General Chair of PMAPS-8. Prior to joining the Iowa State University faculty, from 1985 to 1990, he was a Transmission Planning Engineer with Pacific Gas and Electric Company in San Francisco, California, and a licensed professional engineer. He holds Ph.D., M.S., and B.S. degrees in electrical engineering from the Georgia Institute of Technology.

6. Brian Parsons worked as an engineer and manager at the National Renewable Energy Lab, and its predecessor, the Solar Energy Research Institute, for over three decades. His work included renewable power technology development, systems analysis, and topics related to grid integration of renewable energy. From 2007 to 2013, he led the Transmission and Grid Integration Group at

the National Renewable Energy Laboratory, which developed pioneering renewable energy integration studies. He now advises the National Renewable Energy Laboratory and other organizations on grid integration of renewable energy. He is also Director of the Western Grid Group, and long-time participant and advisor to the Utility Variable-Generation Integration Group. He received his M.S. in mechanical engineering from the University of Wisconsin, Madison and his B.S. in civil engineering from the University of Colorado, Boulder.

7. On October 23, 2015, EPA published its final version of the Clean Power Plan, which regulates carbon dioxide emissions from existing fossil-fuel-fired power plants under section 111(d) of the Clean Air Act, 42 U.S.C. § 7411(d). 80 Fed. Reg. 64,661 (Oct. 23, 2015). Petitioners have filed these consolidated cases seeking judicial review of the Clean Power Plan.

8. Grid Expert *Amici* have an interest in the integrity and reliability of electricity infrastructure, and the efficiency of its management and regulation. Grid Expert *Amici* believe that the Clean Power Plan respects and effectively harnesses the unique features of the electric grid and is consistent with the twin aims of the grid: power reliability and affordability for all consumers.

9. Grid Expert *Amici* seek leave to participate as *amici curiae* in this proceeding so that they may aid the Court in understanding the unique physical features of electricity and the electric grid, and the relevance of those features to

the rule at issue in this case. Grid Expert *Amici* would also aim to clarify what they see as common misunderstandings and confusion about how the electric grid functions, and why. Petitioners have raised arguments about the effect of the Clean Power Plan on grid operations and on grid reliability. *See, e.g.*, Opening Br. of Pet'rs on Core Legal Issues at 4, 6, 20-21, 33 (Feb. 19, 2016); Opening Br. of Pet'rs on Procedural and Record-Based Issues at 38-41, 43 (Feb. 19, 2016). Grid Expert *Amici* are well positioned to offer perspective on grid management, maintenance of electric reliability, and how the power system responds to pollution controls such as the Clean Power Plan. No other *amici* of which we are aware share this perspective, or plan to address these specific issues.

10. D.C. Circuit Rule 29 permits the filing of a motion for leave to participate as *amici curiae* up to seven days after the filing of the principal brief of the party being supported, but encourages the filing of a notice of intent as soon as practicable. Grid Expert *Amici* are filing this motion as soon as practicable.

11. If permitted to file an *amicus* brief, Grid Expert *Amici* would file a document within the briefing schedule established by this Court for all briefs and within any proscribed word limitations.

WHEREFORE, the proposed Grid Expert *Amici* respectfully request leave to file a brief of *amici curiae* pursuant to the schedule and any other direction, including word limitations, established by the Court.

Respectfully submitted,

/s/ Megan M. Herzog

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Dated: March 29, 2016

CERTIFICATE OF COMPLIANCE

This motion complies with Federal Rules of Appellate Procedure 27 (d)(1)&(2) and 29(b) and D.C. Circuit Rule 29(c) because it meets the proscribed format requirements, does not exceed 20 pages, and is being filed as promptly as practicable after the case was docketed in the Court. This motion also complies with the typeface requirements of Federal Rule of Appellate Procedure 32(a)(5) and the type style requirements of Federal Rule of Appellate Procedure 32(a)(6) because this brief has been prepared in a proportionally spaced typeface using Microsoft Office Word 2010 in 14-point Times New Roman font.

/s/ Megan M. Herzog
Megan M. Herzog

Dated: March 29, 2016

CERTIFICATE AS TO PARTIES AND *AMICI CURIAE*

Pursuant to D.C. Circuit Rule 28(a)(1)(A), counsel certifies as follows: except for the Grid Expert *Amici*, all parties, intervenors, and *amici* appearing in this Court are, to the best of my knowledge, listed in the Joint Certificate as to Parties, Rulings, and Related Cases and Respondent EPA's Initial Brief.

/s/ Megan M. Herzog
Megan M. Herzog

Dated: March 29, 2016

CERTIFICATE OF SERVICE

I hereby certify that, on this 29th day of March, 2016, I electronically filed the foregoing with the Clerk of the Court for the United States Court of Appeals for the District of Columbia Circuit using the Court's CM/ECF system, which will send notice of such filing to all counsel who are CM/ECF registered users.

/s/ Megan M. Herzog
Megan M. Herzog

Dated: March 29, 2016