

ORAL ARGUMENT NOT YET SCHEDULED

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

STATE OF NORTH DAKOTA, <i>et al.</i> ,)	
)	
Petitioners)	No. 15-1381
)	(consolidated with Nos.
v.)	15-1396, 15-1397,
)	15-1399, 15-1434,
)	15-1438, 15-1448,
)	15-1456, 15-1458,
)	15-1463, 15-1468,
UNITED STATES ENVIRONMENTAL)	15-1469, 15-1481,
PROTECTION AGENCY, and REGINA A.)	15-1482, 15-1484,
MCCARTHY, Administrator)	16-1218, 16-1220,
)	16-1221, 16-1227)
Respondents.)	
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**UNOPPOSED MOTION OF TECHNOLOGICAL INNOVATION EXPERTS
NICHOLAS ASHFORD, M. GRANGER MORGAN, EDWARD S. RUBIN,
AND MARGARET TAYLOR FOR LEAVE TO FILE *AMICUS CURIAE*
BRIEF IN SUPPORT OF RESPONDENTS**

Pursuant to Federal Rule of Appellate Procedure 29(b) and D.C. Circuit Rule 29(b), Nicholas Ashford, M. Granger Morgan, Edward S. Rubin, and Margaret Taylor (collectively, “technology innovation experts”), by and through their undersigned counsel, respectfully move this Court for leave to participate as *amici curiae* in the above-captioned case in support of Respondents U.S. Environmental

Protection Agency (“EPA”) and EPA Administrator Regina A. McCarthy.

Proposed amici curiae have consulted with the parties regarding this motion.

Counsel for Respondents to these consolidated cases have communicated that their clients consent to participation by the four technological innovation experts.

Counsel for the following Respondent-Intervenors also gave consent to the four experts to file an *amicus* brief: 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; and NextEra Energy, Inc.

Counsel for Petitioner State of Missouri has provided the consent of their client.

Counsel for the Petitioners in Nos. 15-1434, 15-1458, and 15-1463 have stated that their clients do not oppose the motion to participate. Counsel for Petitioners in Nos. 15-1381, 15-1396, 15-1399, 15-1448, and 15-1469 responded that they take no position on the question of whether this motion for leave to participate as amici curiae should be granted. No other counsel for any of the additional petitioners or movant intervenors in this consolidated case responded to notice sent to liaison counsel asking whether they consented, objected, or took no position on amici’s proposed participation. Counsel for the four experts sent that notice on Friday, November 4, 2016 and asked that responses be provided by Tuesday, November 8,

2016. It was noted that if no response was received by that date, counsel for proposed amici would take that to signal that the parties take no position on this motion.

This motion is timely under Federal Rule of Appellate Procedure 29(e) because it is filed before Respondents' brief is filed. In addition, this motion is timely under Circuit Rule 29(b)-(c) because it is filed as soon as practicable after the docketing of the case.

In support of this motion, proposed technology innovation expert amici curiae state as follows:

I. Nature of the Case

Petitioners challenge the Standards of Performance for Greenhouse Gas Emissions from New, Modified, and Reconstructed Stationary Sources: Electric Utility Generating Units (the "Rule"), which the Environmental Protection Agency ("EPA") finalized on October 23, 2015. 80 Fed. Reg. 64,510 (Oct. 23, 2015). The Rule requires new coal-fired electric generating units to limit their greenhouse gas emissions to the level achievable using partial carbon capture and sequestration. *Id.* at 64,513. EPA has the authority to set New Source Performance Standards, like the Rule, under section 111(b) of the Clean Air Act. 42 U.S.C. § 7411(b).

Petitioners argue that the Rule is unlawful because it is not based on a system of emissions reduction that is “adequately demonstrated” or “achievable,” and that EPA acted arbitrarily and capriciously because the Rule purportedly will impose excessive costs.

II. Interest of Proposed Amici Curiae and Relevance and Desirability of Participation

The four technology experts requesting permission to file an *amicus curiae* brief are all highly-respected and recognized academics from top American universities whose work is focused on technology innovation and diffusion, including both the relationship between regulatory policy and technology innovation and diffusion, and the impact of technology innovation and diffusion on the costs of implementing new pollution control technology. Their expertise in this field informs their view of the EPA’s action in this case.

Dr. Nicholas Ashford is Professor of Technology and Policy at the Massachusetts Institute of Technology. He is Director of the Technology and Law Program there, and holds faculty positions at the Center for Technology, Policy and Industrial Development in the School of Engineering, the Institute for Work and Employment Research in the Sloan School of Management, and the Environmental Policy Group in the Urban Studies Department. He is also a

frequent visiting professor at the Harvard School of Public Health, Cambridge University, and the Cyprus University of Technology. He has served on the EPA Science Advisory Board and was chairman of the Committee on Technology Innovation & Economics of the EPA National Advisory Council for Environmental Policy and Technology. His research encompasses sustainability and regulatory law and economics, policy design for encouraging technological innovation and improving health, safety, and environmental quality, and labor's role in technological change. Since the 1970s, Dr. Ashford's pioneering and continuing research on regulation-induced innovation has been influential in shaping academic thought on the subject and informing policy actions by governmental agencies.

Dr. M. Granger Morgan is the Hamerschlag University Professor of Engineering in the Department of Engineering and Public Policy, where until 2014 he was the founding Department Head, at Carnegie Mellon University. He is the Co-Director of the Center for Climate Energy Decision Making and the Co-Director of the Electricity Industry Center. He founded and was the Director of Carnegie Mellon's Wilton E. Scott Institute for Energy Innovation in 2012, and is a Member of the National Academy of Sciences. He earned his B.A. in Physics from Harvard, a Masters in Astronomy and Space Science from Cornell, and a Ph.D. in Applied Physics and Information Science from the University of California, San

Diego. His research interests focus on policy problems involving technical and scientific issues, with an emphasis on energy and environmental systems, and risk analysis. His publications have included work relating to the future performance and costs of, and the impact of regulation on, implementation of carbon capture and sequestration technology.

Dr. Edward S. Rubin is a Professor of Engineering and Public Policy and of Mechanical Engineering in the Department of Engineering and Public Policy, of which he is a founding member, at Carnegie Mellon University. He was also the founding Director of the Center for Energy and Environmental Studies and the Environmental Institute. His research focuses on technical, economic and policy issues related to energy, particularly the developing market for carbon capture and sequestration. He received his Bachelor's degree in Mechanical Engineering from the City College of the City University of New York, and his M.S. and Ph.D. in Mechanical Engineering from Stanford University. His work has generated the Integrated Environmental Control Model (IECM), a widely-used stochastic simulation model for designing and evaluating cost-effective emission control systems for fossil-fuel power plants, as well as insights used to estimate the future cost trends of advanced power systems. He is a Fellow Member of the ASME, recipient of the CMU Distinguished Professor of Engineering Award, and is a National Associate member of the National Academies. He served as a

coordinating lead author for the Intergovernmental Panel on Climate Change and is currently a Board member of the UK CCS Research Centre. Dr. Rubin's research is particularly relevant to the EPA rulemaking at issue here; his research has focused on technological innovation and diffusion in the context of pollution reduction technology, the ways that innovation and associated "learning curves" reduce costs of technology implementation, and the specific application of these principles to the case of carbon capture and sequestration.

Dr. Margaret Taylor is a Research Scientist at Lawrence Berkeley National Laboratory (LBNL) and an Engineering Research Associate in Stanford University's Precourt Energy Efficiency Center. She is also affiliated with several units at the University of California, Berkeley, where she served on the faculty from 2002-11 with a primary appointment in the Goldman School of Public Policy (GSPP). She earned both an M.S. (1998) and Ph.D. (2001) in Engineering & Public Policy at Carnegie Mellon University, and a B.A. from Columbia University in Environmental Science (Geochemistry) and American History (1993). Her research, which has won awards from the Academy of Management and the International Institute of Applied Systems Analysis, explores questions at the nexus of innovation and energy/environmental policy. Among other insights, Dr. Taylor's research has shed light on policy-induced innovation, technological development and diffusion, and the cost reductions achievable as technology

development and diffusion create a dynamic of “learning by doing.” In its preamble to the Rule, U.S. EPA references and relies on Dr. Taylor’s published research on these topics. 80 Fed. Reg. 64,575.

The technology innovation experts have a significant interest in the outcome of the present case, and their perspective will assist the court in evaluating the claims of the parties. They study the relationship between regulation and the development and diffusion of technology, with particular focus on the pollution control field, and the effect of that relationship on technology cost. The Rule would require emissions reduction achievable through implementation of existing pollution control technology not yet widely used in the U.S. power sector, and therefore is directly relevant to their professional expertise.

The technology innovation experts propose to file an *amicus curiae* brief responding to arguments raised in Petitioners’ and Petitioner-Intervenors’ briefs regarding the historical context of technology-forcing regulation under the Clean Air Act and the implications of the Rule for the cost of carbon capture and sequestration technology. The amici propose to draw upon their expertise in technological innovation, and in the relationship between regulatory policy and innovation, to assist the Court in analyzing Petitioners’ arguments. The technology innovation experts believe that the “system” EPA identified, partial carbon capture and sequestration, has been “adequately demonstrated.” Furthermore, based on

historical evidence from other technology-based pollution regulations, the cost of such systems will likely will be lower than projected by EPA. No other amici of which we are aware can provide the perspective of these scholars, or plan to address these same issues.

If permitted to file an *amicus curiae* brief, the technology innovation experts would file their brief in accordance with the briefing schedule, Circuit Rules, and any formatting requirements established by the Court.

CONCLUSION

For the foregoing reasons, the unopposed motion for leave to file an *amicus curiae* brief in support of Respondents should be granted.

Respectfully submitted on November 16, 2016.

/s/ Sean Hecht

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*Counsel for Nicholas Ashford, Granger Morgan,
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CIRCUIT RULE 28(a)(1) CERTIFICATE AS TO PARTIES AND AMICI

Except for the following, all parties, intervenors, and amici appearing in this court are, to the best of my knowledge, listed in the Certificate as to Parties, Rulings, and Related Cases filed by counsel for the State of North Dakota on October 13, 2016:

Amicus Curiae:

No. 15-1381

& consolidated cases: Institute for Policy Integrity at New York University
School of Law

/s/ Sean Hecht
Sean Hecht

*Counsel for Nicholas Ashford, Granger
Morgan, Edward Rubin, and Margaret Taylor*

CERTIFICATE OF SERVICE

I hereby certify that on November 16, 2016, I filed the foregoing Unopposed Motion of Technological Innovation Experts Nicholas Ashford, M. Granger Morgan, Edward S. Rubin, and Margaret Taylor for Leave to File an *Amicus Curiae* Brief in Support of Respondents through the Court's CM/ECF system, which will send a notice of filing to all registered CM/ECF users. I also caused the foregoing to be served via first-class mail on counsel for the following parties at the following addresses:

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