

November 7, 2017

Submitted Via Electronic Filing

Federal Energy Regulatory Commission
Secretary of the Commission
888 First Street, NE
Washington, D.C. 20426

**Re: Reply Comments of Clean Air Task Force on Grid Resilience and Pricing,
Notice of Proposed Rulemaking, Docket No. 18-1-000 (October 10, 2017)**

Dear Secretary Bose:

Clean Air Task Force (“CATF”) respectfully submits these reply comments to the Federal Energy Regulatory Commission (“FERC” or “the Commission”) on the proposal from the Secretary of the Department of Energy (“DOE”) on Grid Resilience and Pricing, Notice of Proposed Rulemaking, Docket No. 18-1-000, published at 82 Fed. Reg. 46,940 (October 10, 2017) (the “Proposed Rule” or “DOE’s proposal”).

Founded in 1996, CATF seeks to help safeguard against the worst impacts of climate change by working to catalyze the rapid global development and deployment of low carbon energy and other climate-protecting strategies, through research and analysis and public advocacy leadership.

I. Introduction.

CATF submitted its initial comments in this docket on October 23, 2017, Accession No. 20171023-5376 (“CATF Initial Comments”). After further review of the Proposed Rule and the many initial comments submitted in response thereto, CATF continues to urge FERC to reject outright the Proposed Rule.

The Proposed Rule has no basis in law or support in fact. The stated goal of the Proposed Rule is to ensure a “reliable and resilient electric supply.” 82 Fed. Reg.

46,940, at 46,941-942. While CATF certainly acknowledges the importance of that goal, the Proposed Rule fails to provide any real evidence that the reliability of the nation's electric supply is threatened, that any reliability or resilience issues that may exist are related to generator fuel supply. Nor is there any evidence that DOE's proposed solution -- providing full cost-of-service recovery to certain uneconomic generators that have a 90-day on-site fuel supply -- would improve the reliability and resilience of the nation's electric supply. DOE appears to be proposing a "solution in search of a problem." As one ex-FERC Commissioner put it, DOE's proposal represents "a tax on customers to do favors for friends." See, e.g., Panel 1 video, available at: https://bipartisanpolicy.org/events/former-commissioners-and-key-stakeholders-respond-to-the-proposed-rule-at-ferc/?_cldee=YXdIZWtzQGNhdGYudXM%3d&recipientid=contact-157364a9f01ae311814d00155d47db8c-5026b96c8ec546e48c52add7957931c5&utm_source=ClickDimensions&utm_medium=email&utm_campaign=Energy%20%7C%20FERC%20%7C%2010.31.17&esid=a413d078-d2bc-e711-8105-5065f38b0251.

CATF's reply comments focus in more detail on several points made initially in comments by others:

1. FERC must consider the environmental and economic costs and benefits of the Proposed Rule, by means that include an E.O. 12866 Regulatory Impacts Analysis, and also an environmental impact statement under the National Environmental Policy Act ("NEPA").
2. By prolonging the operational life of aging, uneconomic high polluting power plants, the Proposed Rule will produce significant harmful impacts to the environment, public health and the climate.
3. FERC must not interfere with state regulations and policies governing generating sources. The Proposed Rule will undermine energy regulation and policy in many states, and must therefore be rejected.

II. FERC Must Consider the Environmental Impacts of the Proposed Rule.

Many commenters have pointed out that the Proposed Rule will produce significant harm to the environment, public health and the climate.¹ In reply and furtherance of those comments, CATF estimates in section III below the quantifiable harm to human health and the monetized damages flowing therefrom that will be caused by DOE's proposal. We agree with many other commenters that FERC must consider environmental impacts carefully in its evaluation of the Proposed Rule.²

One of the core concerns expressed by DOE in the Proposed Rule is that the competitive energy market that has been developed with FERC's guidance over the past few decades does not adequately price "resiliency attributes" of "fuel-secure" power generation. See, e.g., 82 Fed. Reg. at 46,942-43. While DOE provides little or no evidence in support of that assertion, it is, on the other hand, clear that the market is not accurately pricing the impacts of emissions of air pollutants (sulfur dioxide, nitrogen oxides and fine particulate matter) and carbon dioxide from coal-fired power generation on the environment, the climate and public health. To the extent that FERC decides pursue an inquiry of the adequacy of current market pricing to internalize the various

¹ See, e.g., Comments of Environmental Defense Fund ("EDF"), Natural Resources Defense Council ("NRDC"), Sierra Club, Earthjustice, Sustainable FERC Project, Union of Concerned Scientists ("UCS"), The Center For Biological Diversity, The Environmental Law & Policy Center, The Southern Environmental Law Center, Conservation Law Foundation, Environmental Working Group, and Fresh Energy (collectively, "Joint Public Interest Organizations") (Accession No. 20171023-5660, Appendix C.); Comments of UCS (Accession No. 20171023-5368), text accompanying nn 39-44; Comments of National Wildlife Federation, *et.al.* (Accession No. 20171023-5562 at 3-4; Comments of the Attorneys General of Massachusetts, California, Connecticut, Illinois, Maryland, North Carolina, Oregon, Rhode Island, Vermont, and Washington, CT Dep't. of Energy and Environmental Protection, RI Div'n of Public Utilities and Carriers, and NH Office of the Consumer Advocate (collectively, "Multistate Comments") (Accession No. 20171023-5466), at 51-52; Comments of EDF (Accession No. 20171023-5471), at 31-34.

² See, e.g., Comments of the Northeast States for Coordinated Air Use management ("NESCAUM") (Accession No. 20171023-5481); Joint Public Interest Organizations, *supra* n1, at 79-82; Comments of EDF, *supra* n1, at 31-34.

It is important to note that the harms CATF has quantified include only effects of increased fine particulates, not for example the effects of increased ozone due to the Proposed Rule. Nor are these the only environmental and public health harms that will result from DOE's Proposal. For example, effects on regional haze, or the health effects due to the hazardous air pollutants (heavy metals, acid gases) emitted by coal fired power plants, are some examples of damages that cannot be quantified in monetary terms, but nevertheless will result and be experienced by Americans as a result of the implementation of DOE's Proposal.

costs and benefits of the nation's electric power generation, the environmental impact of that generation must be a key part of such inquiry.

Furthermore, as other commenters have noted, subsidizing the continued operation of aging, high-emitting coal plants will actually reduce, rather than improve, electric system reliability by, among other things, contributing to worsening climate change and associated severe weather events that are—by far—the main threat to grid reliability.^{3,4} Any FERC resolution of DOE's proposal that considers only an extremely minor piece of the whole picture—that is, the miniscule or nonexistent impact of generator on-site fuel storage—without considering the substantial and negative impact —on the environment, human health, climate, and grid reliability and resilience—of prolonging the life and operation of these uneconomic coal plants, is unreasonable, arbitrary and capricious on its face.

CATF noted in our Initial Comments that Executive Order 12,866 requires the analysis of the costs and benefits of DOE's Proposed Rule. We reiterate that point here. CATF Initial Comments at 3-4.

In addition, as DOE recognizes in its proposal, 82 Fed. Reg. at 46,947, FERC is required to conduct an Environment Impact Statement ("EIS") under NEPA for any action that may have a significant adverse effect on the environment. While the Proposed Rule is clearly a major federal action that may have a significant adverse impact on the environment, DOE asserts that FERC need not prepare an EIS by virtue of a categorical exemption for ratemaking proceedings found in FERC's regulations at 18 CFR 380.4(a)(15). 82 Fed. Reg. at 46,947. CATF disagrees. Rather, CATF agrees with comments of the Attorney General of New York (Accession No. 20171023-5376, at 6), among others, noting that the exclusion does not apply "because the scale and

³ See, e.g., Comments of EDF, *supra* n1, at 38; Comments of M.J. Bradley and Associates (Accession No. 20171023-5430), at 4; Comments of NY State Public Service Commission, *et.al.* (Accession No. 20171023-5551), at 3; Comments of The Nature Conservancy, (Accession No. 20171023-5367), at 2.

⁴ Joint Public Interest Organizations, *supra* n1 at 63-69: stating that aging coal plants such as those the Proposed Rule would subsidize are inherently more susceptible to forced outages, are less flexible, and thus less reliable than newer plants.

effect of the Proposed Rule is much more environmentally significant than the type of rulemakings covered by the categorical exclusion.”⁵ Furthermore, the exclusion applies by its terms to “electric rate filings submitted by public utilities” and certain other rate filings. The Proposed Rule is not a “rate filing” and therefore the exclusion found in 18 CFR 380.4(a)(15) does not apply.

In any event, the categorical exclusion in section 380.4(a) is inapplicable to the Proposed Rule by virtue of the exception set forth in section 380.4(b), and particularly 380.4(b)(1) which provides in pertinent part:

[T]he Commission and its staff *will* independently evaluate environmental information supplied in an application and *in comments by the public*. Where circumstances indicate that an action may be a major Federal action significantly affecting the quality of the human environment, the Commission: ...
Will prepare an environmental assessment or an environmental impact statement.” [emphasis supplied].

Because CATF (see part III below) and others (*see supra* n.1) have supplied information to the Commission in this proceeding on the potential substantial adverse impacts on the human environment of DOE’s Proposal, FERC must prepare an EA or an EIS in conformance with NEPA and 18 CFR 380.4(b)(1).

Finally, even assuming that FERC is not legally required to prepare an EIS, it nevertheless should exercise its discretion to do so, as it has done in the past in cases where significant environmental impact could be anticipated. *See, e.g.*, 49 FERC ¶61,091, at pp. 61,353, 61,357; 72 FERC ¶61,022 at p. 61,061.

⁵ *See also, e.g.*, Joint Public Interest Organizations, *supra* n1, at 79-82; Comments of EDF, *supra* n1, at 3, 30-39; Comments of Attorney General of New York (Accession No. 20171023-5376), at 7.

III. CATF's Estimate of the Harm to Human Health and Monetized Damages Resulting from the Proposed Rule.

Environmental Defense Fund (“EDF”), Natural Resources Defense Council (“NRDC”), Sierra Club, Earthjustice, Sustainable FERC Project, Union of Concerned Scientists, The Center For Biological Diversity, The Environmental Law & Policy Center, The Southern Environmental Law Center, Conservation Law Foundation, Environmental Working Group, and Fresh Energy filed joint comments (“Joint Public Interest Organizations” *supra* n1) that included an analysis of the potential impacts of the proposal in increased air emissions. See Joint Public Interest Organizations at C-3 and C-4. These comments included two increased “utilization cases” under the Proposed Rule in which the owners of unregulated merchant coal plants in MISO, PJM, NYISO, and ISO-NE increased their annual generation as a result of the operating subsidy contemplated by the Proposed Rule. In reply, CATF undertook to estimate the adverse human health impacts and monetized damages associated with those impacts due to the increased emissions under each of these cases.

Based on CATF's analysis, the Proposed Rule will produce monetized damages associated with the estimated quantifiable harm caused by to human health during the initial one-year period of application of the Proposed Rule at between \$10 billion and \$21.4 billion.⁶ The Proposed Rule is projected to cause an estimated 1,340 to 2,854 premature deaths during that time. A description of CATF's health impacts analysis follows.

⁶ Again, it must be emphasized that the actual damages to human health and the environment will exceed these figures, as there are other kinds of expected health and environmental damages that will result from the implementation of DOE's Proposal, but that cannot be monetized, due to constraints of current metrics for doing so, or that were not included in the analysis provided here. For example, human health is impacted by exposures to the metallic Hazardous Air Pollutants and acid gases emitted by coal fired power plants, but such damages cannot yet be monetized, nor can the impact on regional haze due to persistent and increased emissions of PM 2.5 be monetized. Ozone impacts on human health can be monetized, however, CATF's analysis did not estimate or evaluate increased ozone emissions which will occur if the Proposed Rule is implemented.

To create the health impacts analysis for the Proposed Rule, MSB Energy Associates, on behalf of CATF, ran a software tool developed by Abt Associates for CATF called the Powerplant Impact Estimator (“PIE”). PIE was developed specifically to estimate the health effects and monetized damages of pollution from coal-fired electric generating units (“EGUs”) in the United States. In building the PIE model, Abt Associates applied methodologies and health studies used by the US Environmental Protection Agency (“EPA”) in recent regulatory impact analyses and that have been extensively peer-reviewed and approved by both EPA’s Science Advisory Board and by the National Academy of Sciences, and in previous CATF studies.⁷

The PIE model estimates coal plant pollution-related health effects and monetized damages of ambient concentrations of particulate matter less than 2.5 microns in aerodynamic diameter (PM_{2.5}) – an air pollutant that has been linked in the published, peer-reviewed health literature to a variety of serious health effects, including asthma attacks, chronic bronchitis, hospital admissions, and premature mortality. The contributions of coal plant emissions to ambient PM_{2.5} levels include both primary emitted PM_{2.5} and secondarily-formed PM_{2.5} that is created through atmospheric

⁷ See U.S. EPA, Regulatory Analysis for the Clean Power Plant Rule EPA-452/R-15-003 (October 23, 2015) at 4-11 to 4-36; Regulatory Impact Analysis for the Final Mercury and Air Toxics Standards EPA-452/R-11-011 (December 2011) at 5-1 to 5-55. See also, Hoek G, Krishnan RM, Beelen R, Peters A, Ostro B, Brunekreef B, Kaufman JD, Long-term air pollution exposure and cardio-respiratory mortality: a review, 12 (1) *Envtl. Health* 43 (2013); Pope A, Ezzati M, Dockery DW, Fine-Particulate Air Pollution and Life Expectancy in the United States, 360(4) *New Eng. J. Med.* 376 (2009); Abbey, D. E., B. E. Ostro, F. Petersen and R. J. Burchette. 1995c. Chronic Respiratory Symptoms Associated with Estimated Long-Term Ambient Concentrations of Fine Particulates Less Than 2.5 Microns in Aerodynamic Diameter (PM_{2.5}) and Other Air Pollutants. *J Expo Anal Environ Epidemiol.* Vol. 5 (2): 137-159.; Moolgavkar, S. H. 2000a. Air Pollution and Hospital Admissions for Chronic Obstructive Pulmonary Disease in Three Metropolitan Areas in the United States. *Inhalation Toxicology.* Vol. 12 (Supplement 4): 75-90; Ito, K. 2003. Associations of Particulate Matter Components with Daily Mortality and Morbidity in Detroit, Michigan. In: Revised Analyses of Time-Series Studies of Air Pollution and Health. Health Effects Institute. Boston, MA. May; Sheppard, L., D. Levy, G. Norris, T. V. Larson and J. Q. Koenig. 1999. Effects of ambient air pollution on nonelderly asthma hospital admissions in Seattle, Washington, 1987-1994. *Epidemiology.* Vol. 10 (1): 23-30; Norris, G., S. N. Young Pong, J. Q. Koenig, T. V. Larson, L. Sheppard and J. W. Stout. 1999. An association between fine particles and asthma emergency department visits for children in Seattle. *Environ Health Perspect.* Vol. 107 (6): 489-93. See also: U.S. EPA, OAR, "Final Report to Congress on Benefits and Costs of the Clean Air Act, 1970 to 1990", EPA 410-R-97-002 (October 1997) at I-23.

chemical reactions to the direct emissions of sulfur dioxide and nitrogen oxides from coal plants.

Analytical Procedure.

Using the PIE model, MSB Energy Associates analyzed the primary and secondarily-formed PM_{2.5} emissions from the unregulated merchant coal plants operating at the end of 2016 and that likely will take advantage of the subsidy under the proposed rule, namely those located in PJM, MISO, ISO-NE, or NYISO regions. See: S&P Global Market Intelligence (2017). For the year 2016, we found that the average capacity factor for this set of plants was 46 percent. 2016 plant emissions (for sulfur dioxide, nitrogen oxides, and primary PM_{2.5}) were taken from U.S. EPA 2016 Continuous Emissions Monitoring System (CEMS) data.

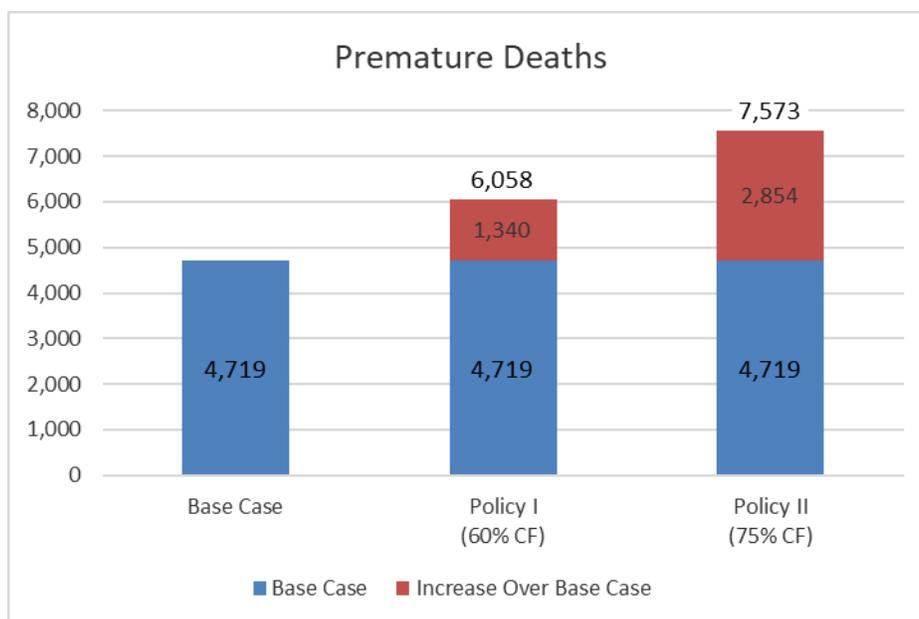
To create the “base case”, we identified five unregulated merchant coal plants in these power regions whose owners have publicly announced their intention to close those plants within the next year (*i.e.*, between October of 2017 and October 2018) and those that are currently mothballed. Those five plants were assumed to retire in the base case and the other coal plants in those regions were assumed to run at their 2016 levels of generation and emissions. In fact, because many more coal plants are expected to retire over the next several years, this analysis likely understates the PM_{2.5}-related health impacts from the Proposed Rule.

We then analyzed two policy cases. Under the first, Policy 1, due to the subsidy contemplated by the proposed rule the five retiring units do not retire, but rather increase their average capacity factor to 60 percent, because the subsidy makes them more price competitive in the wholesale market, so they are called upon to run more often. Similarly the additional plants likely to take advantage of the subsidy increase their average capacity factors to 60 percent. Under Policy II, the five retiring units do not retire, but increase their average capacity factor to 75 percent, and the additional plants units receiving the subsidy increase their average capacity factor to 75 percent. We

then calculated the increased PM_{2.5}-related mortality and morbidity under each of due to the continued operation of the five plants and the increased capacity factors in each policy case relative to those in the base case.

Results.

The impacts of the proposed rule on mortality are presented in the bar graph below:



The results for the full suite of health effects endpoints are presented in Tables 1. And 2.:

Table 1. Total Health Impacts Damages from DOE's Proposal.

Health Impact	Base Case	Policy I	Policy II
Premature Deaths	4,719	6,058	7,573
Hospital Admissions	1,363	1,749	2,186
Asthma ER Visits	1,674	2,147	2,684
Heart Attacks	2,910	3,732	4,665
Asthma Attacks	29,803	38,232	47,790
Chronic Bronchitis	1,108	1,422	1,777

Table 2. Additional Health Impacts and Monetized Damages from DOE's Proposal.

Health Impact	Policy I		Policy II	
	Incremental Incidences	Valuation	Incremental Incidences	Valuation
Premature Deaths	1,340	\$9,785,296,940	2,854	\$20,848,873,728
Hospital Admissions	386	\$8,983,918	823	\$19,157,194
Asthma ER Visits	473	\$174,554	1,010	\$372,621
Heart Attacks	822	\$89,893,013	1,755	\$191,873,025
Asthma Attacks	8,429	\$438,289	17,987	\$935,300
Chronic Bronchitis	314	\$139,254,071	669	\$296,946,728
Total Valuation		\$10,024,040,785		\$21,358,158,595

PIE Model Details

To estimate the PM_{2.5}-related damages associated with the Proposed Rule, the PIE model first calculates the impact on ambient air quality under each of the scenarios modelled, and then using the results from epidemiological studies, it estimates the number of adverse health impacts (e.g., premature deaths), and then estimates the associated economic damages.

Abt Associates developed the PIE tool to support assessments of the human health benefits of air pollution reductions and their associated economic benefits. PIE is the result of years of research and development, and reflects methods that are based on the peer-reviewed health and benefits analysis literature. PIE is based on a damage

function approach, which involves modeling changes in ambient air pollution levels, calculating the associated change in adverse health effects, such as premature mortality, and then assigning an economic value to these effects. For changes in the concentrations of particulate matter and ozone, this is typically done by translating a change in pollutant levels into associated changes in human health effects. These health effects are then translated into economic values based on valuation studies in the peer-reviewed published literature.

The first step in this process involves health impact functions, which are derived from concentration- response functions reported in the peer-reviewed epidemiological literature. A typical health impact function has four components:

1. an effect estimate, which quantifies the change in health effects per unit of change in a pollutant, and is derived from a particular concentration-response function from an epidemiology study;
2. a baseline incidence rate for the health effect;
3. the affected population; and
4. the estimated change in the concentration of the pollutant.

The result of these functions is an estimated change in the incidence of a particular health effect for a given change in air pollution. Examples of health effects that have been associated with changes in air pollution levels include premature mortality, hospital admissions for respiratory and cardiovascular illnesses, and asthma exacerbation.

The second step in the damage function approach involves estimated unit values that give the estimated economic value of avoiding a single case of a particular endpoint – a single death, for example, or a single hospital admission. These unit values are derived from the economics literature, and come in several varieties.

- For some endpoints, such as hospital admissions, Abt Associates used cost of illness (“COI”) unit values, which estimate the cost of treating or mitigating the effect. COI unit values generally underestimate the true value of reductions in

risk of a health effect, since they include hospital costs and lost wages, but do not include any estimate of the value of avoided pain and suffering.

- For other endpoints, such as asthma exacerbation, we use willingness to pay (WTP) unit values, which are estimates of willingness to pay to avoid an asthma exacerbation.
- Typically value of statistical life (“VSL”) unit values are used for increases in risk of premature mortality.

Estimating the economic damages of the estimated change in health incidence is a simple matter of multiplying that change by the associated unit value. Finally, the calculation of total damages involves summing estimated damages across all non-overlapping health effects, such as hospital admissions for pneumonia, chronic lung disease, and cardiovascular- related problems.

This three-step process is the standard approach for evaluating the health and economic benefits of reduced air pollution in the regulatory context. EPA has used this approach when evaluating the National Ambient Air Quality Standards (U.S. EPA, 2006), the Clean Air Act (U.S. EPA, 1999b), the benefits of reducing greenhouse gases (Abt Associates Inc., 1999), the health effects of motor vehicles (U.S. EPA, 2000; 2004), and other major regulations.

For detailed information on each step in the PIE analysis, please see:

“Technical Support Document for the Powerplant Impact Estimator Software Tool”:

http://www.catf.us/resources/publications/files/Abt-Technical_Support_Document_for_the_Powerplant_Impact_Estimator_Software_Tool.pdf.

IV. The Proposed Rule will Impermissibly Intrude on State Power Generation Regulation and Policy.

CATF agrees with many commenters who have recognized that the Proposed Rule will undermine state energy laws and policies, and exceeds FERC's authority under the Federal Power Act.⁸ Specifically, we agree with the attorneys general of a number of states that DOE's proposal

directly subsidizes generation resources in a manner that intrudes on states' role as overseers of 'the economic aspects of electrical generation.' *Pacific Gas & Elec. Co. v. State Energy Res. Conservation & Dev. Comm'n*, 461 U.S. 190, 206 (1983); see also Federal Power Act, § 201(b)(1), 16 U.S.C. § 824(b)(1) (Commission lacks general jurisdiction over 'facilities used for the generation of electric energy').

Multistate Comments, *supra*, n1 at 44-45.

FERC authority over generation extends *only* to questions related to the justness and reasonableness of wholesale rates, it does not extend over "capacity planning, determination of power needs, plant siting, licensing, construction and the operations of coal-fired plants" as that was "deliberately withheld ...when Congress specifically preserved the States' authority over such matters in section 201(b) of the FPA." *Monongohela Power Co.*, 40 FERC ¶ 61,256 at 5-6 (1987). And FERC cannot, in the guise of its ratemaking authority, create rates that in effect dictate or interfere with a state's choice of generation resource mix in its capacity planning function. Again, agreeing with the Multistate Comments, "[DOE's] Proposal effectively overrides the choices made by states with restructured electric market to allow those markets, along with other *policy decisions by the states* to promote alternative energy sources and to secure reductions in power sector emissions, to guide capacity additions and retirements, and the *choices made by states* with traditional cost-of-service regulation to retire facilities in the best interest of ratepayers." [emphasis supplied] *Id.* at 45. And, such interference with state policies will have the effect of undermining and potentially

⁸ See, e.g., Multistate Comments, *supra*, n1, at 44-51; Joint Public Interest Organizations, *supra* n1, at 60-63; Comments of Attorney General of New York, *supra* n4, at 6-8; Comments of NY State Public Service Commission, *et.al.*, *supra* n3, at 4, 9-15.

reversing the hard-fought progress many states have made in reducing power plant pollution and thereby protecting the health of their own citizens.⁹

Conclusion.

For all of the reasons stated herein, and in CATF's Initial Comments and other comments we have referenced, CATF strongly urges FERC to reject DOE's Proposal.

Respectfully submitted,



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⁹ See, e.g., Multistate Comments, *supra* n1, at 45-51 (providing examples of such state energy initiatives).