

July 5, 2023

Hon. Michael Regan, Administrator
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue NW
Washington, DC 20004

Re: Multi-Pollutant Emissions Standards for Model Years 2027 and Later Light-Duty and Medium-Duty Vehicles

Docket ID No. EPA–HQ–OAR–2022–0829

Dear Administrator Regan:

Thank you for the opportunity to comment on the Environmental Protection Agency’s (EPA’s) proposal regarding Multi-Pollutant Emissions Standards for Model Years 2027 and Later Light-Duty and Medium-Duty Vehicles in Docket No. EPA–HQ–OAR–2022–0829 (Proposed Rule). The Proposed Rule violates the Clean Air Act because it relies on an incorrect factual basis—on multiple counts discussed below—derived from a misinformed and incomplete Draft Regulatory Impact Analysis (DRIA).

Specifically, the EPA’s DRIA regarding the impact of the Proposed Rule on the cost and reliability of electricity in the U.S. is gravely flawed. It should be redrafted to enable the EPA Administrator to give appropriate consideration to the cost and safety factors of the Proposed Rule, as required by section 202 of the Clean Air Act.¹ Further, the DRIA should address the interactions between the Proposed Rule and other EPA rules—including the recently proposed rule on greenhouse gas emissions from power plants²—as required by Executive Order 12866.³ As written, the Proposed Rule:

1. Violates section 202 of the Clean Air Act by failing to adequately consider:
 - A. Impaired bulk power system reliability and
 - B. Increased retail electricity prices;
2. Does not comply with Executive Order 12866; and
3. Violates the Unfunded Mandates Reform Act.

Considering the deficiencies in the Proposed Rule, EPA should decline to move forward with a final rule in this matter. If EPA chooses to move forward, it should first issue a new proposal that provides an analytically sound DRIA as the basis for reasoned decision-making by the EPA Administrator.

¹ 42 U.S.C. § 7521, <https://www.law.cornell.edu/uscode/text/42/7521>.

² *New Source Performance Standards for Greenhouse Gas Emissions From New, Modified, and Reconstructed Fossil Fuel-Fired Electric Generating Units; Emission Guidelines for Greenhouse Gas Emissions From Existing Fossil Fuel-Fired Electric Generating Units; and Repeal of the Affordable Clean Energy Rule*, 88 FR 33240; May 23, 2023. Available at: <https://www.federalregister.gov/documents/2023/05/23/2023-10141/new-source-performance-standards-for-greenhouse-gas-emissions-from-new-modified-and-reconstructed> (accessed July 2, 2023).

³ Executive Order 12866, *Regulatory Planning and Review*, 58 FR 51735; October 4, 1993. Available at: <https://www.archives.gov/files/federal-register/executive-orders/pdf/12866.pdf> (accessed July 2, 2023).

1. THE PROPOSED RULE VIOLATES SECTION 202 OF THE CLEAN AIR ACT

The Proposed Rule would establish new emissions standards for light-duty and medium-duty vehicles pursuant to section 202 of the Clean Air Act. Significantly, unlike other sections of the Clean Air Act (such as those covering National Ambient Air Quality Standards, for example), section 202 requires the EPA Administrator to consider the impacts of a new standard on cost, energy, and safety. Section 202 states that regulations should apply “standards which reflect the greatest degree of emission reduction achievable” while “giving appropriate consideration to cost, energy, and safety factors associated with the application of such technology.”⁴

The EPA Administrator has not given appropriate consideration to cost, energy, and safety, and thus the Proposed Rule violates section 202 of the Clean Air Act. EPA’s failure to consider cost, energy, and safety in the Proposed Rule is a major flaw that, if left uncorrected, would make the final rule arbitrary and capricious. Not only does the Proposed Rule not provide an accurate assessment of its own impacts in a vacuum, but it also fails to consider key, well-known interactions between the Proposed Rule and other EPA regulations. Because the Proposed Rule fails to offer the Administrator a sound factual basis upon which to build, it is impossible that the Administrator gave “appropriate consideration to cost, energy, and safety factors” when establishing the standards in the Proposed Rule.

A. THE PROPOSED RULE FAILS TO ADEQUATELY CONSIDER IMPAIRED BULK POWER SYSTEM RELIABILITY

The reliability of the electric grid is a matter of public health and safety. The connection between access to reliable electric power and public health and safety is well established: blackouts are a safety hazard worthy of the Administrator’s consideration.⁵ As one recent example, hundreds of lives were lost during Winter Storm Uri in February 2021 due to a lack of reliable electricity supplies during a long-lasting extreme cold weather event.⁶ EPA should avoid contributing to such losses in the future. Unfortunately, because EPA unreasonably assumed the Proposed Rule will have no reliability impacts, it failed to consider the risks to human health stemming from unreliable electricity among the many issues discussed in Chapter 7 of the DRIA (Health and welfare impacts).

The Proposed Rule was issued after many serious warnings of supply shortfalls in the U.S. electricity system. PJM Interconnection, Inc. (PJM), the largest regional transmission organization in the U.S., has warned federal policymakers about the rapid retirement of generation resources. PJM notes:

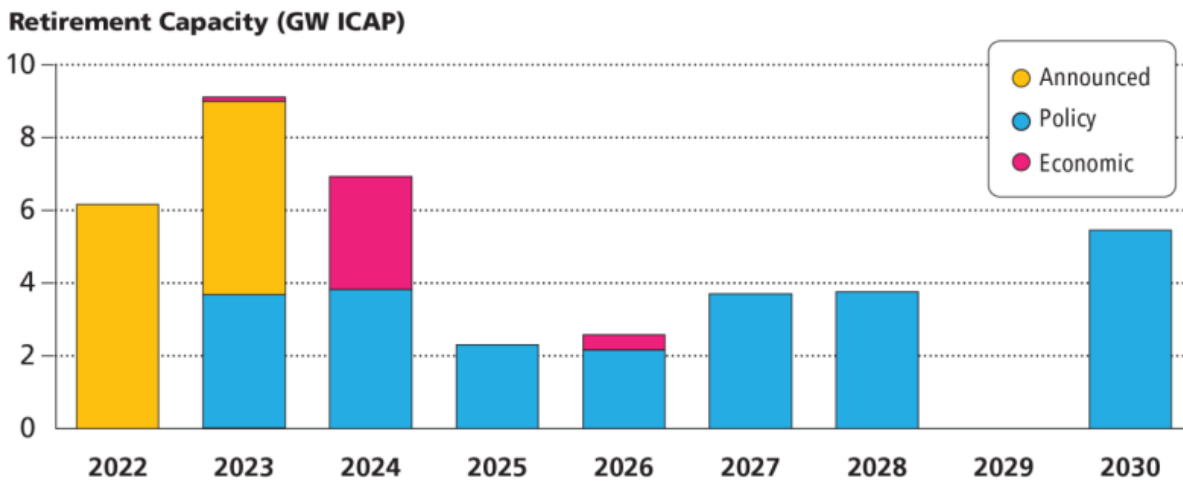
⁴ 42 U.S. Code § 7521(a)(3)(A)(i).

⁵ *Power Outages and Community Health: A Narrative Review*, available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7749027/> (“The existing literature suggests that power outages have important health consequences ranging from carbon monoxide poisoning, temperature-related illness, gastrointestinal illness, and mortality to all-cause, cardiovascular, respiratory, and renal disease hospitalizations, especially for individuals relying on electricity-dependent medical equipment.”)

⁶ See: <https://comptroller.texas.gov/economy/fiscal-notes/2021/oct/winter-storm-impact.php> (accessed July 2, 2023).

Historically, thermal resources have provided the majority of the reliability services in PJM. Today, a confluence of conditions, including state and **federal policy requirements**, industry and corporate goals requiring clean energy, reduced costs and/or subsidies for clean resources, **stringent environmental standards**, age-related maintenance costs, and diminished energy revenues are hastening the decline in thermal resources.⁷

The following figure illustrates forecast retirements in PJM, of which policy-driven retirements comprise the majority. The total expected closures—40 GW—represent 21 percent of PJM’s installed generating capacity. Taken together, the suite of EPA regulations already impacting the supply side of the electricity sector poses a significant threat to the reliable operation of the nation’s bulk power system.



The North American Electric Reliability Corporation (NERC), which is the organization responsible for establishing mandatory reliability standards, is also sounding alarms. In its most recent Long Term Reliability Assessment (LTRA), NERC highlighted the significant grid reliability problems facing the United States in the near term. The LTRA states that “[w]ithin the 10-year horizon, over 88 GW of generating capacity is confirmed for retirement.”⁸ Speaking to the press about the report, John Moura, NERC’s director of reliability assessment and performance analysis, said “[w]e are living in extraordinary times, from an electric industry perspective. There are extraordinary reliability challenges and opportunities in front of us.”⁹

In May of this year, NERC released its Summer Reliability Assessment, which warned that “two-thirds of North America is at risk of energy shortfalls this summer during periods of

⁷ *Energy Transition in PJM: Resource Retirements, Replacements & Risks*. February 24, 2023. Available at: <https://www.pjm.com/-/media/library/reports-notice/special-reports/2023/energy-transition-in-pjm-resource-retirements-replacements-and-risks.ashx> (accessed July 2, 2023) (emphases added).

⁸ *2022 Long-Term Reliability Assessment*. NERC. December 2022. Available at https://www.nerc.com/pa/RAPA/ra/Reliability%20Assessments%20DL/NERC_LTRA_2022.pdf (accessed July 2, 2023).

⁹ *Most of US electric grid faces risk of resource shortfall through 2027, NERC finds*. Utility Dive. December 16, 2022. Available at: <https://www.utilitydive.com/news/nerc-grid-resource-adequacy-shortfall-reliability-assessment/638949/> (accessed July 2, 2023).

extreme demand.” Figure 1 from NERC’s 2023 Summer Reliability Assessment shows the regions of the country that face an elevated risk of supply shortfalls this year.¹⁰

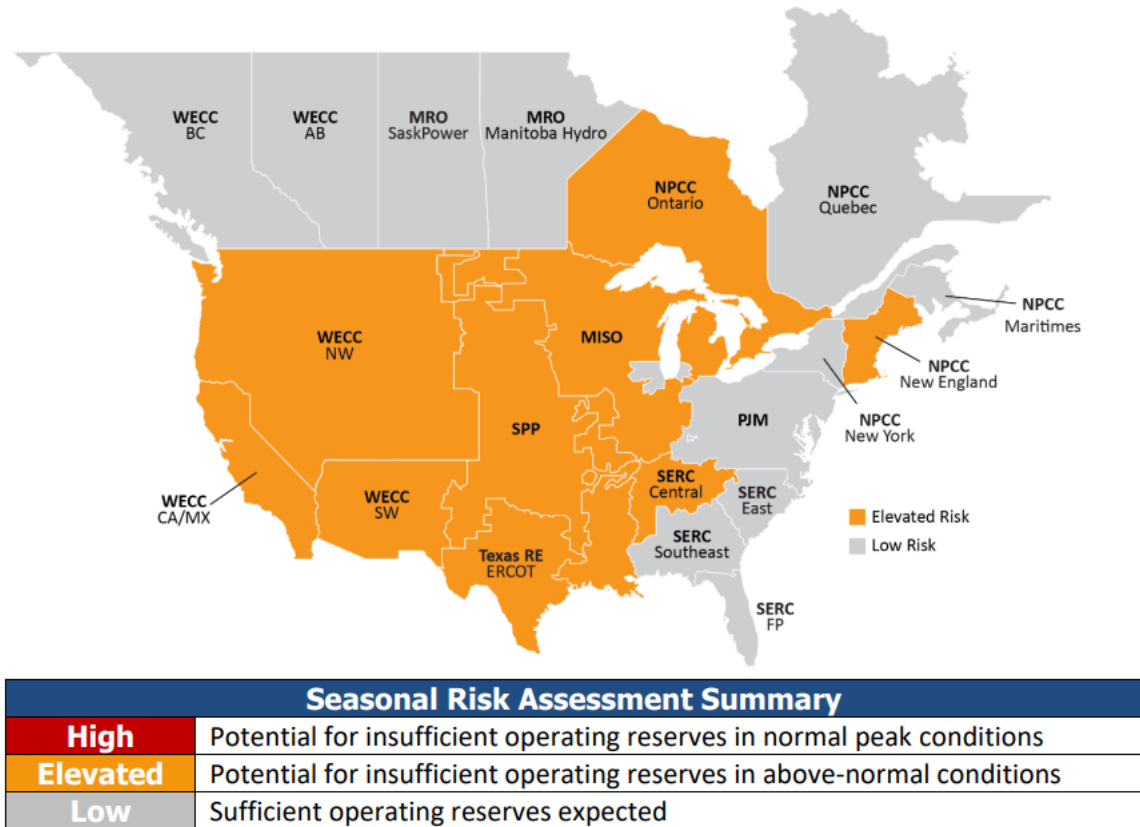


Figure 1: Summer Reliability Risk Area Summary

These risks are well known. NERC has been warning about the speed of the energy transition for years, largely from the perspective of the changing supply resource mix. However, more recently, NERC has set up working groups to help maintain the reliability of the bulk power system under increased penetration of plug-in electric vehicles (PEVs). Earlier this year, NERC CEO Jim Robb said “As the electrification of the transportation sector continues to grow, the North American grid must be prepared. ... Collaboration, innovation, and information sharing are critical if we are to be able to meet future demands successfully.”¹¹

EPA should be involved in NERC working groups in order to base its rulemakings in sound science and to fully consider the safety impacts of its rules. Given the requirement in section 202 of the Clean Air Act that the Administrator consider safety factors, EPA should not move forward with a final rule (or a new proposed rule) until it reaches a better understanding of

¹⁰ 2023 Summer Reliability Assessment, page 6. NERC. May 2023. Available at:

https://www.nerc.com/pa/RAPA/ra/Reliability%20Assessments%20DL/NERC_SRA_2023.pdf.

¹¹ Cross-Sector Collaboration: Addressing the Potential Challenges from Electric Vehicle Grid Impacts, available at:

https://www.nerc.com/news/Headlines%20DL/CMC%20EV%20Grid%20Reliability%20Working%20Group%20Report%20Press%20Release_11APRIL23.pdf.

NERC’s warnings, including NERC’s concerns about distribution-connected inverter-based resources like PEVs.¹²

NERC’s elevated risk scenario is for this summer, meaning reliability challenges are already here. Hence any EPA proposal—including the Proposed Rule—to force an increase in demand or a decrease in supply will further weaken an already fragile state of grid reliability. The Proposed Rule creates a new safety hazard by forcing a rapid increase in electricity demand from PEVs amid an extraordinary and worsening supply crisis. The DRIA notes this tension but ultimately makes no adverse finding in Chapter 11 (Energy Security Impacts):

It is difficult to assess the combined effects of higher demand for electricity from PEVs, increasing extreme weather events in the context of climate change, and the greater use of variable supply technologies, such as wind/solar power, on electricity grid reliability and resiliency issues in the U.S. In part, this is because there is little experience to assess the impacts of significant PEV use on U.S. electric grid reliability and resiliency.¹³

Although it is true that EPA has little experience in assessing the impacts of increased PEV penetration, that is precisely why EPA should work more closely with grid experts before moving forward in this docket.

Chapter 5 (Electric Infrastructure Impacts) of the DRIA makes similar findings regarding a lack of impact, but, in doing so, reveals a fundamental misunderstanding of the role of the Federal Energy Regulatory Commission (FERC). FERC is the federal agency responsible for ensuring the reliability of the bulk power system (and approving the mandatory standards drafted by NERC), and its authority lies at the transmission level. However, the DRIA states that EPA staff “consulted with FERC staff on distribution system reliability and related issues.”¹⁴ If that is true, EPA staff talked to the wrong agency about the distribution system. Further, it is alarming that EPA staff seem unaware that FERC has no jurisdiction over the reliability of the distribution system.

The DRIA also misidentifies NERC as the “National Electricity Reliability Corporation.” (As defined above, NERC is short for the North American Electric Reliability Corporation.) These mistakes in the DRIA indicate a lack of familiarity with the topic area and a fundamental misunderstanding of the role of FERC and NERC in overseeing the reliability of the bulk power system. If EPA moves forward with a final rule, it should explain the extent to which EPA staff have consulted with FERC and NERC regarding the Proposed Rule’s impact to the reliability of the bulk power system. Absent better coordination and information sharing, it is impossible for the EPA Administrator to give “appropriate consideration” to the electric reliability impacts of the Proposed Rule as he is required to do under section 202 of the Clean Air Act.

¹² *White Paper: BPS-Connected Inverter-Based Resource Priorities*. NERC Task Force on Inverter-Based Resources. June 2020. Available at: https://www.nerc.com/comm/PC/InverterBased%20Resource%20Performance%20Task%20Force%20IRPT/IRPTF_Priorities_June_2020.pdf

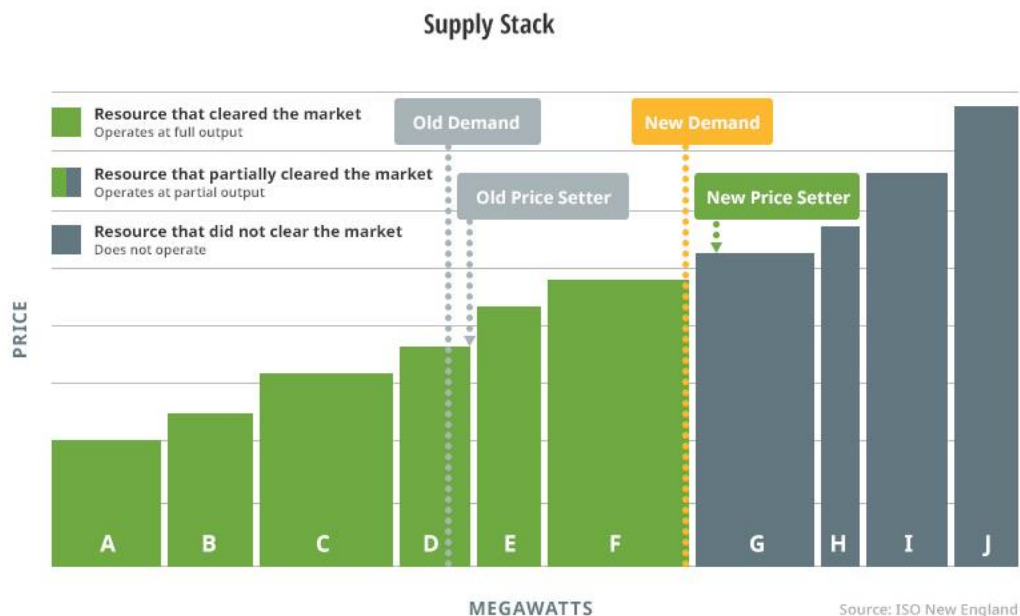
¹³ DRIA at 11-14 (PDF page 603).

¹⁴ DRIA at 5-38 (PDF page 380).

B. THE PROPOSED RULE FAILS TO ADEQUATELY CONSIDER INCREASED RETAIL ELECTRICITY PRICES

The Retail Price Model (RPM) and Integrated Planning Model (IPM) cited in the DRIA contain fundamental errors that allow EPA to claim the rule will not increase retail electricity prices. EPA’s modeling is opaque, but upon close inspection it appears to selectively rely on business-as-usual scenarios for some inputs and altered assumptions in others. Taken together, EPA’s electricity price modeling in the DRIA yields significantly flawed results and does not enable reasoned decision-making by the Administrator.

First, the DRIA violates the law of supply. An outward shift in the demand curve for electricity will increase prices because the new, higher demand intersects the supply curve at a higher price point. This phenomenon is well established in the economics literature, and a specific application of the impact of increasing demand on wholesale electricity prices is outlined in detail in a tutorial by the New England Independent System Operator (see figure below).¹⁵ This effect holds regardless of the time of day a PEV user decides to charge the vehicle.



Astonishingly, the DRIA states that “[r]egional average retail electricity price differences showed small increases or decreases (less than approximately 1 to 2 percent),”¹⁶ meaning that EPA’s model violates the law of supply. In no case should a rule that forces the rapid electrification of the transportation fleet—which represents a large increase in the demand for electricity—cause a reduction in prices. This observation alone is enough to require EPA to rework its modeling.

¹⁵ See <https://www.iso-ne.com/about/what-we-do/in-depth/how-resources-are-selected-and-prices-are-set> (accessed July 2, 2023).

¹⁶ DRIA at 5-15 (PDF page 357) (emphasis added).

Second, the RPM states that the “models use generation-related outputs from an IPM-modeled scenario together with T&D and other cost projections and assumptions from EIA’s AEO Reference Case to estimate the retail price of electricity.”¹⁷ This is unreasonable because the increased T&D (transmission and distribution) costs of the Proposed Rule are not captured in the Energy Information Administration’s Annual Energy Outlook Reference Case. That case is used as a baseline and should apply only to the “no-action” case analyzed in the DRIA. The Proposed Rule would certainly cause distribution costs to increase because PEVs require substantial and costly upgrades. For example, a recent report prepared for the California Public Utilities Commission “estimates up to \$50 billion in traditional electricity distribution grid infrastructure investments by 2035.”¹⁸ The Proposed Rule could also cause an increase in transmission costs if the demand increased triggered by the Proposed Rule necessitates an expansion of the transmission system.

Finally, EPA’s retail price estimates do not account for the loss in electricity supply resources caused by EPA rules. The DRIA should cross-reference the EPA rules impacting generating resources and rework the electricity price estimates after taking into account the reasonably foreseeable power plant closures caused by its own rules (see Section 1.A of this comment).

2. THE PROPOSED RULE DOES NOT COMPLY WITH EXECUTIVE ORDER 12866

EPA states that it sought review by the Office of Management and Budget and that “[a]ny changes made in response to Executive Order 12866 review have been documented in the docket.”¹⁹ Notwithstanding whatever review EPA sought, there remain numerous omissions regarding the Proposed Rule’s compliance with Executive Order 12866. Specifically, section 1 of Executive Order 12866 offers a list of “Principles of Regulation.” EPA violates several of the principles listed. Specifically, the Proposed Rule does not conform with principles 6, 7, 8, nor 10, and thus fails to comply with Executive Order 12866. Before moving forward with a final rule (or a new proposed rule), EPA should address these areas of non-compliance.

Principle 6 states:

“Each agency shall assess both the costs and the benefits of the intended regulation and, recognizing that some costs and benefits are difficult to quantify, propose or adopt a regulation only upon a reasoned determination that the benefits of the intended regulation justify its costs.”

EPA fails to comply with Principle 6 because it has not undertaken a reasonable assessment of the cost of the Proposed Rule. As discussed above, EPA does not fully account for the

¹⁷ *Documentation of the Retail Price Model*, page 1. Available at: https://www.epa.gov/sites/default/files/2019-06/documents/rpm_documentation_june2019.pdf.

¹⁸ *Electrification Impacts Study Part 1: Bottom-Up Load Forecasting and System-Level Electrification Impacts Cost Estimates*. May 2023. Available at: <https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M508/K423/508423247.PDF>.

¹⁹ Proposed Rule, 88 FR 29184 at 29404.

Proposed Rule’s impacts on the electricity system, which include increasing the cost of electricity and harming electric grid reliability.

EPA also overstates the benefits of the Proposed Rule by claiming unreasonably high benefits from reductions in emissions of fine particulate matter (PM2.5).²⁰ A more accurate estimate of “co-benefits” from PM2.5 reduction would improve cost-benefit assessments for EPA rules across the board, including in this Proposed Rule.²¹ Given the requirement in principle 6 of Executive Order 12866 for an agency to “adopt a regulation only upon a reasoned determination that the benefits of the intended regulation justify its costs,” EPA should revisit its cost-benefit analysis using more accurate estimates of PM2.5 impacts before it can determine that the benefits of the Proposed Rule in fact outweigh the costs.²²

Principle 7 states:

“Each agency shall base its decisions on the best reasonably obtainable scientific, technical, economic, and other information concerning the need for, and consequences of, the intended regulation.”

EPA fails to comply with Principle 7 because, as detailed above, it has not availed itself of the ample scientific and technical information—well known and published by leading sources such as NERC, FERC, and PJM—regarding the consequences of EPA regulations on the cost and reliability of the electricity system.

Principle 8 states:

“Each agency shall identify and assess alternative forms of regulation and shall, to the extent feasible, specify performance objectives, rather than specifying the behavior or manner of compliance that regulated entities must adopt.”

EPA fails to comply with Principle 8 because the Proposed Rule is a de facto mandate for PEVs. Much like the unlawful Clean Power Plan,²³ the thrust of the Proposed Rule is to force a shift away from internal combustion engine vehicles and toward PEVs. Indeed, the performance objectives outlined in the Proposed Rule are only viable if the regulated entities—drivers in the U.S.—behave as specified by EPA.

²⁰ *Comments to EPA Re: Reconsideration of the National Ambient Air Quality Standards for Particulate Matter*. Travis Fisher. 2023. Available at: https://thf_media.s3.amazonaws.com/2023/PM25comments.pdf (accessed July 2, 2023).

²¹ *Will EPA Stop Its Abuse of Costly Pollution-Control ‘Co-Benefits’ Assessments?* Daren Bakst. October 4, 2018. Available at: <https://www.heritage.org/agriculture/commentary/will-epa-stop-its-abuse-costly-pollution-control-co-benefits-assessments> (accessed July 2, 2023).

²² EPA unreasonably treats all species of PM2.5 as equally toxic. This is an incorrect assumption and should be remedied if EPA moves forward with a final rule. A recent study in the journal *Nature* (available at: <https://www.nature.com/articles/s41598-018-35398-0>) explains the variability in toxicity among different chemical species of PM2.5 (and even among combustion temperatures and engine sizes for the same fuel). Noting the wide range of toxicity of the various chemical components and sources of PM2.5 pollution, EPA should tailor its estimates of PM2.5 co-benefits to match the toxicity of the various forms of PM2.5. Not all PM2.5 is equally toxic, and therefore not all exposure to PM2.5 is equally costly.

²³ See <https://archive.epa.gov/epa/cleanpowerplan/clean-power-plan-existing-power-plants-regulatory-actions.html> (accessed July 2, 2023).

Principle 10 states:

“Each agency shall avoid regulations that are inconsistent, incompatible, or duplicative with its other regulations or those of other Federal agencies.”

EPA fails to comply with principle 10 because, as outlined in the section on electric grid reliability above, the Proposed Rule is incompatible with the suite of existing and new EPA regulations that are forcing a large reduction in electricity supply. Although a minor conflict with an obscure rule from a different agency might be forgivable, EPA’s Proposed Rule unreasonably conflicts with a concurrent proposed rule issued by EPA—the Greenhouse Gas Standards and Guidelines for Fossil Fuel-Fired Power Plants, issued in May of 2023.²⁴ In fact, it appears that the DRIA fails to reference or otherwise acknowledge the power plant rule.

3. THE PROPOSED RULE VIOLATES THE UNFUNDED MANDATES REFORM ACT

The Proposed Rule must satisfy section (a)(3)(B) of the Unfunded Mandates Reform Act (UMRA).²⁵ The UMRA establishes that “before promulgating any general notice of proposed rulemaking that is likely to result in promulgation of any rule that includes any Federal mandate that may result in the expenditure by State, local, and tribal governments, in the aggregate, or by the private sector, of \$100,000,000 or more (adjusted annually for inflation) in any 1 year ... the agency shall prepare a written statement” containing five categories of analysis, including “any disproportionate budgetary effects of the Federal mandate upon any particular regions of the nation or particular State, local, or tribal governments, urban or rural or other types of communities, or particular segments of the private sector,” and “a description of the extent of the agency’s prior consultation with elected representatives ... of the affected State, local, and tribal governments.”

The Proposed Rule acknowledges that it would have major financial impacts but claims the provisions of the UMRA regarding State, local, or Tribal governments do not apply. EPA states:

This action contains no unfunded Federal mandate for State, local, or Tribal governments as described in UMRA, 2 U.S.C. 1531–1538, and does not significantly or uniquely affect small governments. This action imposes no enforceable duty on any State, local or Tribal government.²⁶

If the EPA moves forward with a final rule, it should explain why it finds that the federal mandates included in the Proposed Rule would not significantly affect State, local, or Tribal governments. As drafted, the Proposed Rule does not detail how it has satisfied the above procedural requirements of the UMRA and does not indicate that the EPA has undertaken the

²⁴ *New Source Performance Standards for Greenhouse Gas Emissions From New, Modified, and Reconstructed Fossil Fuel-Fired Electric Generating Units; Emission Guidelines for Greenhouse Gas Emissions From Existing Fossil Fuel-Fired Electric Generating Units; and Repeal of the Affordable Clean Energy Rule*, 88 FR 33240; May 23, 2023. Available at: <https://www.federalregister.gov/documents/2023/05/23/2023-10141/new-source-performance-standards-for-greenhouse-gas-emissions-from-new-modified-and-reconstructed> (accessed July 2, 2023).

²⁵ 2 U.S.C. 1532. Available at: <https://www.law.cornell.edu/uscode/text/2/1532> (accessed July 2, 2023).

²⁶ Proposed Rule, 88 FR 29184 at 29405.

required analysis of the impacts on states and local governments and tribes of compliance with the Proposed Rule. For example, some electric utilities are owned and operated by State, local or Tribal governments.²⁷ The Proposed Rule will significantly impact the cost of the distribution systems of those publicly owned utilities, and the DRIA should be amended to evaluate the extent of the cost increases and the impact of the Proposed Rule on the budgets of State, local or Tribal governments.

CONCLUSION

Thank you for the opportunity to comment on the Proposed Rule. For the foregoing reasons, the EPA should not move forward with this rule without first correcting the many dire flaws in the Proposed Rule: its violation of section 202 of the Clean Air Act and Executive Order 12866, its faulty cost-benefit analysis, and its woeful misunderstanding of the U.S. electricity sector as reflected in the DRIA.

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²⁷ *Navigating the EV Market: Trends and Changes for Public Power to Know*. American Public Power Association. Available at: <https://www.publicpower.org/system/files/documents/Navigating-the-Electric-Vehicle-Market.pdf> (accessed July 2, 2023).

²⁸ Affiliation and title provided for identification purposes only. I submit this comment in my personal capacity only and not as an employee of The Heritage Foundation.