In the United States Court of Appeals
FOR THE EIGHTH CIRCUIT

No. 24-2123(L)
Southwestern Electric Power Company; Utility Water Act Group,
Petitioners,

v.

United States Environmental Protection Agency; Michael S. Regan, Administrator, United States Environmental Protection Agency,
Respondents,

Clean Water Action, Sierra Club, Waterkeeper Alliance, Inc., Natural Resources Defense Council, Environmental Integrity Project, PennEnvironment, Inc. and Prairie Rivers Network,
Intervenor-Respondents.

On Petitions for Review from the
U.S. Environmental Protection Agency

OPENING BRIEF OF UTILITY AND STATE PETITIONERS

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No. 24-2225

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Petitioners,

v.

United States Environmental Protection Agency; Michael S. Regan, Administrator, United States Environmental Protection Agency,

Respondents,

Clean Water Action, Sierra Club, Waterkeeper Alliance, Inc., Natural Resources Defense Council, Environmental Integrity Project, PennEnvironment, Inc. and Prairie Rivers Network,

Intervenor-Respondents.

No. 24-2215

City Utilities of Springfield, Missouri, by and through the Board of Public Utilities,

Petitioner,

v.

United States Environmental Protection Agency; Michael S. Regan, Administrator, United States Environmental Protection Agency,

Respondents,

Clean Water Action, Sierra Club, Waterkeeper Alliance, Inc., Natural Resources Defense Council, Environmental Integrity Project, PennEnvironment, Inc. and Prairie Rivers Network,

Intervenor-Respondents.

No. 24-2266
NRG Texas Power, LLC; Utility Water Act Group,
Petitioners,
v.
United States Environmental Protection Agency; Michael S. Regan, Administrator, United States Environmental Protection Agency,
Respondents,

Clean Water Action, Sierra Club, Waterkeeper Alliance, Inc., Natural Resources Defense Council, Environmental Integrity Project, PennEnvironment, Inc. and Prairie Rivers Network,
Intervenor-Respondents.

No. 24-2494
America's Power,
Petitioner,
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U.S. Environmental Protection Agency; Michael S. Regan, Administrator, United States Environmental Protection Agency,
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SUMMARY OF THE CASE AND ORAL ARGUMENT REQUEST

In this case, Utility and State Petitioners ask the Court to set aside an administrative rule EPA has promulgated as part of a concerted effort to heap regulatory burdens on coal-fired power plants. In service of that effort, EPA's rule mandates that coal plants implement costly and unproven technologies to treat the large volumes of waste water with unique chemistry that these plants produce. EPA cut corners at every turn in setting these "Effluent Limit Guidelines," overlooking key gaps in data, ignoring systemic flaws in its model for predicting the costs utilities must bear to comply with the new guidelines, and failing to comply with the statute and its own regulations. The Rule is unlawful and should be vacated.

These cases raise important questions of statutory interpretation and administrative law, involve a complicated regulatory scheme addressing complex water treatment processes, and implicate wide-ranging effects on the electricity grid and the economy. Petitioners believe that oral argument would aid this Court's decision-making process and respectfully request 30 minutes of argument time.

CORPORATE DISCLOSURE STATEMENT

Pursuant to Rule 26.1 of the Federal Rules of Appellate Procedure, Petitioners submit the following corporate disclosure statement:

1. **Southwestern Electric Power Company** (SWEPCO) states that it is a wholly-owned subsidiary of American Electric Power Company, Inc. (AEP), which is a publicly held corporation. Other than AEP, no publicly-held company owns 10% or more of SWEPCO's stock. AEP is traded publicly on the NASDAQ Stock Exchange under the symbol AEP.

2. **Utility Water Act Group** (UWAG) states that it is a voluntary, non-profit, unincorporated group of 134 individual energy companies and two national trade associations of energy companies. UWAG has no stock, no parent corporation, and no publicly held corporation owns a financial interest in UWAG.

3. **America's Power** states that it is a nonprofit membership corporation organized under the laws of the District of Columbia and is recognized as a tax-exempt trade association by the Internal Revenue Service under Section 501(c)(6) of the Internal Revenue Code. America's

Power has no parent corporation, and no publicly held company owns a 10 percent or greater interest in America's Power.

4. **City Utilities of Springfield, Missouri** states that it is a municipal corporation, has no parent or subsidiary corporations, and issues no stock.

5. **NRG Texas Power, LLC** states that it is an affiliate of NRG Energy, Inc. (NRG) which is a publicly held corporation. Other than NRG, no publicly-held company owns 10% or more of NRG Texas Power, LLC's stock. NRG is traded publicly on the New York Stock Exchange under the symbol NRG.

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INTRODUCTION

After the Biden administration took office, the U.S. Environmental Protection Agency (EPA) launched a multi-front attack on coal-fired electricity generation. In 2022, the Supreme Court said EPA could not mandate a shift from coal to other power sources because, at least without clear statutory authorization, such major questions are reserved for Congress. *West Virginia v. EPA*, 597 U.S. 697 (2022). Yet EPA still pressed ahead with a "cross-office power sector strategy" to impose significant new regulatory burdens that would render coal-fired generation untenable,[1] even if it meant reversing recent rules, squandering investments spurred by those rules, threatening the grid's reliability, and increasing electricity costs to Americans.

This case concerns one product of EPA's strategy—a new Clean Water Act (CWA) rule that requires utilities to install costly technologies—membrane systems, thermal evaporators, or spray-dry evaporators—that are unavailable and have not been proven effective to treat the large volumes of wastewater baseload power plants generate.

[1] Petitioners' Stay Motion filed July 26, 2024 at History No. 5417837 at pp.2–3.

89 Fed. Reg. 40,198 (May 9, 2024) ("Rule"), App.1–109; Add.1–109. Congress directed that EPA base such rules, known as "effluent limitation guidelines" (ELGs), on limits that can be achieved through use of technology that is both "available" and "economically achievable." 33 U.S.C. §1311(b)(2)(A). The three technologies on which EPA bases the Rule are neither, which EPA acknowledged in 2020 when it set ELGs based on a different (but still quite costly) set of technologies. But these reasoned 2020 conclusions took a backseat to the cross-office strategy, which favored heaping yet more expense on coal-fired generation.

The Rule is unlawful for many reasons. First, EPA reads the word "available" contrary to its plain meaning and ignores real and persistent impediments to implementing these technologies. Second, EPA persisted in using the same cost-projection model it used in 2020, even though that model materially underestimated compliance costs, and it compounded that error by relying on the same flawed model to underestimate Petitioner's sunk costs from the 2020 Rule and thus minimize Petitioners' profound reliance interests. Third, EPA issued an ELG limit for a new waste stream category—leachate releases through groundwater—without conducting the technological or economic analyses required to

establish an ELG limit for this new category. Finally, EPA failed to properly apply the CWA or its regulations in establishing pretreatment standards for discharges of pollutants through municipal wastewater systems.

The Court should hold unlawful and set aside the Rule.

JURISDICTIONAL STATEMENT

On May 9, 2024, EPA published the Rule,[2] which was "promulgated" for judicial review purposes on May 23, 2024. 40 C.F.R §23.2; 33 U.S.C. §1369(b)(1). Petitioners timely filed petitions for review. This Court has jurisdiction pursuant to 33 U.S.C. §1369(b)(1) and 28 U.S.C. §2112(a).

The non-State Petitioners have standing considering the oppressive new costs the Rule imposes on them or their members. *See, e.g.*, *Iowa League of Cities v. EPA*, 711 F.3d 844, 869–72 (8th Cir. 2013) (association of regulated parties had standing to challenge new ELG rule that would impose substantial costs). Meanwhile, the States have standing given their "interest … in protecting their citizens and electric ratepayers in the traditional government field of utility regulation." *Belmont Mun.*

[2] *See* App.1; Add.1.

Light Dep't v. FERC, 38 F.4th 173, 185 (D.C. Cir. 2022). "'[T]he presence of one party with standing is sufficient to satisfy Article III's case-or-controversy requirement.'" *Elder v. Gillespie*, 54 F.4th 1055, 1063 (8th Cir. 2022) (citation omitted).

ISSUES PRESENTED

1. Did EPA act contrary to law, or arbitrarily and capriciously, in concluding that certain technologies are "available," either alone or in combination, to treat wastewater at power plants?

- 33 U.S.C. §1311(b)(2)(A)
- *United States v. Maswai*, 419 F.3d 822, 824 (8th Cir. 2005)
- *Motor Vehicle Mfrs. Ass'n of the U.S., Inc. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983)
- *Ohio v. EPA*, 144 S.Ct. 2040, 2054–55 (2024)
- *Menorah Med. Ctr. v. Heckler*, 768 F.2d 292, 295–96 (8th Cir. 1985)

2. Did EPA act arbitrarily and capriciously in concluding that certain technologies are economically achievable at power plants?

- *Ohio*, 144 S.Ct. at 2054–55
- *Wild Virginia v. U.S. Forest Serv.*, 24 F.4th 915, 927–28 (4th Cir. 2022)
- *Zen Magnets, LLC v. Consumer Prod. Safety Comm'n*, 841 F.3d 1141, 1149 (10th Cir. 2016)

3. Did EPA act arbitrarily and capriciously by failing to consider the actual costs industry members incurred to comply with its 2020 Rule and reversed course to conclude that certain technologies are available?

- *Dep't of Homeland Sec. v. Regents of the Univ. of California*, 591 U.S. 1, 30 (2020)
- *FCC v. Fox Television Stations, Inc.*, 556 U.S. 502, 515 (2009)

4. Did EPA act arbitrarily and capriciously by adopting new ELG limits for "unmanaged" Leachate discharges through groundwater?

- 33 U.S.C. §§1311(b), 1314(b), 1316(b)–(c)
- *County of Maui v. Hawaii Wildlife Fund*, 590 U.S. 165 (2020)
- *State Farm*, 463 U.S. at 43

5.a Did EPA act arbitrarily and capriciously in relying on its pass through determination in support of pretreatment standards, when the agency ignored the definition of "pass through" in its own regulation?

- 40 C.F.R. §403.3(p)
- *Nat'l Env't Dev. Assoc.'s Clean Air Project v. EPA*, 752 F.3d 999, 1009 (D.C. Cir. 2014)

5.b Alternatively, if EPA did not err in ignoring its regulations, did EPA exceed its statutory authority under the CWA by failing to make a determination that pollutants subject to zero-discharge technologies

would pass through the POTW without application of zero-discharge technologies?

- 33 U.S.C. §1317(b)
- *Iowa League of Cities,* 711 F.3d at 877–78

STATEMENT OF THE CASE

I. The CWA's Requirements for ELGs

The CWA prohibits the discharge of "pollutant[s]" from "point sources" into "waters of the United States" unless authorized. 33 U.S.C. §1311(a). Facilities discharging wastewater must obtain a permit setting limits on discharges of pollutants. *Id.* §1342. Those limits can be based on the amount of a pollutant the receiving water can handle without violating water-quality standards, *id.* §§1312, 1342, and on the amount that can be discharged if the facility uses certain technology. *Id.* §§1314, 1342; *see Texas Oil & Gas Ass'n v. EPA*, 161 F.3d 923, 927 (5th Cir. 1998). This case concerns technology-based limits.

Permit writers do not set technology-based limits in a vacuum. Instead, EPA must periodically establish ELGs for "classes and categories of point sources." *See, e.g.*, 33 U.S.C. §1314(b). The CWA prescribes different standards for setting ELGs based, among other things, on the facilities' age and whether they discharge to publicly-

owned treatment works or directly to waters of the United States. *See id.* §§1311(b), 1314(b), 1316(b)–(c); *see also Sw. Elec. Power Co. v. EPA*, 920 F.3d 999, 1006 (5th Cir. 2019).

Here, the standard applicable to existing power plants requires EPA to base ELGs on limits attainable through use of the "best available technology economically achievable" (BAT). 33 U.S.C. §§1311(b)(2)(A), 1314(b)(2).[3] To qualify as BAT, a technology must be both "available" and "economically achievable." *See Texas Oil*, 161 F.3d at 928. EPA must consider several factors, including "the cost of achieving such effluent reduction," to determine whether a technology satisfies those statutory requirements. 33 U.S.C. §1314(b)(2)(B).

Congress envisioned that, as technology evolved, ELGs would "result in reasonable further progress toward the national goal of eliminating the discharge of all pollutants." *Id.* §1311(b)(2)(A). But Congress empowered EPA to eliminate discharges only after finding "such elimination is technologically *and* economically achievable for a category or class of point sources." *Id.* (emphasis added). Moreover,

[3] A more stringent standard applies to new power plants, which can be designed with advanced treatment technologies in mind. *See* 33 U.S.C. §1316(a)(1); *see also Sw. Elec. Power Co.*, 920 F.3d at 1007 n.7.

when identifying "control measures and practices available to eliminate the discharge of pollutants," EPA must "tak[e] into account the cost of achieving" complete elimination of the discharge of pollutants. *Id.* §1314(b)(3).

The CWA also provides for the establishment of pretreatment standards for pollutants in wastewater that industrial users discharge to Publicly Owned Treatment Works (POTWs). 33 U.S.C. §1317(b); 40 C.F.R. Pt. 403; *see also, e.g.*, *Ark. Poultry Fed'n v. EPA*, 852 F.2d 324 (8th Cir. 1988). Specifically, EPA establishes pretreatment standards for pollutants it determines are not "susceptible to treatment" by the POTW or those that "'interfere with the operation of'" the POTW where necessary "to prevent the discharge of any pollutant through treatment works … which are publicly owned, which pollutant interferes with, passes through, or otherwise is incompatible with such works." 33 U.S.C. §1317(b). In general, a POTW must develop a pretreatment program in accordance with the EPA's guidelines, and industrial users of the POTW must comply with such requirements. *See* 40 C.F.R. §403.8. [4]

[4] Petitioner City Utilities of Springfield, Missouri is an indirect discharger subject to the pretreatment standards for existing sources (PSES). The costs that the Rule imposes on municipally-owned utilities

II. EPA has undertaken successive ELG rulemakings targeting the steam electric utility sector.

This case involves EPA's most recent effort to set ELGs on discharges from coal-fired power plants. Coal-fired plants typically require high volumes of water to manage not just the ash left after combustion, but also pollutants removed from their exhaust by air emission control technology. This wastewater has unique chemistry, so treating it is challenging, especially at existing plants, where these systems must be retrofitted.

A. 2015 ELG Rule

In 2015, EPA issued a final rule revising power plant ELGs.[5] That rule addressed two waste streams directly relevant here—(i) flue gas desulfurization wastewater ("Scrubber Water"), and (ii) combustion residual leachate ("Leachate")—as well as a number of other waste streams (e.g., bottom ash transport water (BATW)).[6] Scrubber Water is produced by spraying a sorbent slurry to facilitate a reaction where sulfur dioxide is removed from exhaust gas and taken away in the slurry water.[7]

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like City Utilities will be borne by the residents of those communities. *See* App.xxxx.

[5] App.xxxx.

[6] App.xxxx.

[7] *See id.*

Leachate is produced when coal-combustion and treatment by-products (e.g., combustion residuals or ash) interact with water that percolates through or drains from landfills.[8]

EPA considered several treatment technologies that might reduce or eliminate these waste streams. EPA concluded that systems using chemical precipitation to facilitate physical removal of pollutants in solids, coupled with biological systems that introduced microorganisms to consume and transform certain pollutants, were BAT for treating Scrubber Water.[9] EPA found the technologies were available. And, although expensive (costing about $10 billion industry-wide across all waste streams), they were economically achievable.[10]

EPA also evaluated "thermal evaporators." Those systems—sometimes called "brine concentrators"—concentrate wastewater by flowing a thin film of wastewater down heated tubes to evaporate water.[11] But the agency concluded these systems were much too expensive—more

[8] *See* 40 C.F.R. §423.11(r).
[9] App.xxxx.
[10] App.xxxx.
[11] App.xxxx.

than 2.5 times the cost of the selected technologies—and thus did not satisfy the statute's definition of BAT.[12]

B. 2020 ELG Rule

In 2017, EPA announced it would reconsider its 2015 ELGs for Scrubber Water and BATW.[13] The agency was concerned about the cost of implementing the technologies selected to meet ELGs it set for those waste streams. It also wanted to consider whether plants could scale up "membrane" technology, which use a semi-permeable filter to remove a broad range of particulate and dissolved pollutants,[14] to treat high-volume waste streams at power plants to achieve zero liquid discharge of some pollutants.[15] Because reconsideration might make investments to implement the 2015 Rule unnecessary, the agency postponed 2015 Rule compliance deadlines, which had already been vacated in part by the Fifth Circuit.[16]

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[12] *Id.*

[13] App.xxxx.

[14] App.xxxx–xxxx.

[15] App.xxxx–xxxx.

[16] App.xxxx; *see also Sw. Elec. Power Co.*, 920 F.3d at 999 (vacating the 2015 limits for Leachate and legacy wastewater).

EPA once again concluded that systems using a combination of chemical and biological treatment systems to facilitate physical removal of pollutants was BAT for Scrubber Water, although it identified a more cost-effective method for the system's biological component. And as before, EPA estimated utilities would spend billions of dollars to comply with the new Scrubber Water limits based on those advanced control systems.[17] With limited exceptions, it required facilities to comply no later than December 31, 2025.

EPA "carefully consider[ed]" and "reject[ed] membrane filtration" as BAT. First, "significant information gaps and uncertainties in EPA's record" precluded a finding that membrane filtration is technologically available to treat high volumes of steam electric wastewater nationwide. Second, "membrane filtration entails unacceptable non-water quality environmental impacts associated with management of the membranes' byproduct, brine." And third, "membrane filtration would result in higher costs to industry."[18]

[17] App.xxxx.
[18] App.xxxx, App.xxxx.

Also, as it did in the 2015 Rule, EPA rejected thermal evaporation technologies as the basis for BAT limits for Scrubber Water because of especially high costs.[19] EPA found thermal technologies were 2.4 times the cost of chemical and biological systems, and 1.04 times the excessively high cost of membrane filtration.[20] And like membrane systems, "thermal technologies have unacceptable non-water quality environmental impacts associated with management of the resultant brine."[21]

EPA did not consider spray-dry evaporators ("spray dryers") as a standalone system. Spray dryers spray fine misted wastewater into hot gases, such as a slipstream of flue gas from the plant's boiler or an external natural gas burner.[22] In 2015, EPA noted that spray dryers might be used in conjunction with thermal evaporators, but did not consider them BAT.[23] And it did not deviate from that conclusion in 2020,

[19] App.xxxx.
[20] App.xxxx.
[21] *Id.*
[22] App.xxxx–xxxx.
[23] App.xxxx–xxxx.

noting correctly that retrofitting spray dryers at existing power plants posed complicated engineering challenges.[24]

EPA projected the costs to comply with its 2020 ELGs would be substantial, but later facts revealed that EPA drastically underestimated those costs. For example, EPA estimated it would cost about $13 million in capital costs to install biological treatment at one plant.[25] In reality, it cost $48 million.[26] At a different plant, EPA estimated approximately $28.6 million in capital costs to install a compliant treatment system,[27] while it actually cost "nearly $110 million."[28]

These wild underestimates were really no surprise, as utility experts tasked with designing and implementing such systems detailed why EPA's cost model was flawed in comments on the 2020 Rule. For one thing, EPA used the wrong "flow" figure for sizing equipment, using "average" flow instead of "peak" flow.[29] For another, EPA underestimated the cost to install equipment by systematically

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[24] App.xxxx–xxxx.
[25] App.xxxx–xxxx.
[26] Petitioners' Stay Motion filed July 26, 2024 at History No. 5417837 at p.17.
[27] App.xxxx–xxxx.
[28] App.xxxx.
[29] App.xxxx–xxxx.

discounting "balance of plant" factors—i.e., the cost associated with site preparation, bonding and insurance, and tie-in of vendor equipment.[30] Finally, EPA underestimated the redundancies needed to simultaneously maintain grid reliability (e.g., during unit maintenance outages) and ensure full compliance with the applicable discharge limits.[31]

C. 2024 ELG Rule

In August 2021, EPA announced it would revise the 2020 Rule, most notably its conclusions regarding membrane technology.[32] But the key facts were unchanged. There were no technological breakthroughs. And the cost was still exorbitant.

Still, the new administration wanted to use all weapons in the federal regulatory arsenal to reduce carbon dioxide emissions, especially after the Supreme Court held in *West Virginia* that EPA lacked authority under the Clean Air Act to do so by shifting generation away from fossil fuels.[33] Using ELGs to heap costs on coal plants was one such weapon.[34]

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[30] App.xxxx–xxxx.
[31] App.xxxx–xxxx.
[32] App.xxxx.
[33] *See* supra n.1.
[34] *See* Lisa Friedman, *E.P.A. Describes How It Will Regulate Power Plants After Supreme Court Setback*, N.Y. TIMES, July 7, 2022.

So in sharp contrast to its approach in 2017, EPA chose not to suspend the 2020 Rule's obligations as it reconsidered them. EPA required utilities to continue pouring money into 2020-Rule systems, even though the new rulemaking would render those systems obsolete.[35] That created a profound dilemma for electric utilities—keep spending millions on soon-obsolete treatment systems to meet the 2020 Rule's December 31, 2025, deadline or prematurely retire a reliable facility.[36]

EPA issued the final Rule in May 2024. It determined the twice-rejected membrane systems are now BAT for Scrubber Water and Leachate. In addition, EPA concluded that previously rejected thermal evaporators and spray dryers, "alone or in any combination" with membranes, are now available to eliminate the discharge of both Scrubber Water and Leachate.[37] And these "zero-discharge" technologies, deemed unavailable and too costly in 2015 and 2020, are now economically achievable even though their costs have not

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[35] App.xxxx.

[36] *See* Utility Water Act Group (UWAG), Comments in Response to the U.S. EPA's Preliminary Effluent Guidelines Program Plan 15 (Oct. 14, 2021), EPA-HQ-OW-2021-0547-0465, https://bit.ly/3YCGNYw.

[37] App.18, App.28; Add.18, Add.28.

decreased—and even though those costs will pile on top of costs utilities are incurring already just to comply with the still-applicable 2020 Rule.[38]

EPA also imposed limits on "unmanaged" Leachate discharged through groundwater to waters of the United States (WOTUS) in a manner that is the "functional equivalent" of a direct discharge (FEDD). In *County of Maui v. Hawaii Wildlife Fund*, 590 U.S. 165 (2020), the Supreme Court held that such through-groundwater discharges will be identified case by case based on a range of factors. But neither EPA nor permit writers know today which power plants have such discharges, what will qualify as FEDD in a given circumstance, the unique engineering challenges the treatment of such discharges would entail, or the cost to overcome those challenges. EPA nonetheless imposed a one-size-fits-all limit on these through-groundwater discharges based on a utility completely intercepting Leachate, treating it with chemical precipitation to meet the limit, then discharging the Leachate through groundwater and into a water of the United States.[39]

[38] App.xxxx.
[39] App.50–51; Add.50–51.

For power plants that discharge to POTWs, the Rule concludes that certain pollutants "pass through" POTWs within the meaning of 33 U.S.C. §1317(b), warranting the implementation of the pretreatment standards adopted in the Rule.[40] In making this pass-through determination, EPA neither referenced nor applied the definition of pass through included in the agency's regulations at 40 C.F.R. §403.3(p).

EPA established pretreatment standards for existing sources that are the same as the BAT for Leachate, BATW, and Scrubber Water applied to direct dischargers (with limited exceptions) and for the same reasons.[41] The pretreatment standards for indirect discharges apply May 9, 2027.[42]

Direct-discharge facilities must meet the new limits as soon as possible (but no later than December 31, 2029), unless they retire or cease combusting coal by December 31, 2034. Plants must decide by the end of 2025 whether to try to meet the new zero-discharge limits, or retire coal-fired generation.[43]

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[40] App.58; Add.58.
[41] App.3; Add.3; App.58; Add.58.
[42] App.3; Add.3.
[43] App.88; Add.88. Units seeking to comply with the 2024 Rule by committing to retire by 2034 must still satisfy the 2020 Rule's limits for

Significantly, EPA relied on the same flawed cost model it used for the 2020 Rule, even though commenters again explained how and why that model produced serious errors, including the same deficiencies that rendered the model wholly unreliable in 2020.[44] Commenters presented concrete proof in the form of real-world, real-time 2020-Rule compliance costs utilities presented to State regulators and that utilities continued to incur. At four exemplar plants alone, EPA significantly undershot costs:

Scrubber Water and BATW no later than December 31, 2025, submit a notice by December 31, 2025, and cease coal combustion by December 31, 2034. App.87–88; Add.87–88.

[44] *See* App.xxxx–xxxx.

Comparison of EPA Projections v. Post-2020-Rule Utility Figures[45]

Plant Name	EPA Estimated Costs ($) for Biological Treatment + Chemical Precipitation		Actual Utility Anticipated Costs ($) for Biological Treatment Alone	
	Capital	O&M	Capital	O&M
Fort Martin (Units 1-2)	10,997,849	576,766	45,597,126	553,000
Trimble County (Units 1-2)	12,785,392	1,535,726	64,800,000	3,085,416
Mill Creek (Units 1-4)	5,560,844	442,871	68,000,000	3,069,562
Ghent (Units 1-4)	9,068,391	741,951	70,200,000	4,215,581
Mitchell (Units 1-2)	13,463,922	--	48,811,000	--

But EPA did not correct the flaws in its model. Rather, it acknowledged it likely underestimated compliance costs for some facilities, speculated it may have overestimated costs for others, and (with no supporting explanation) asserted the cost-estimation methodology was "reasonable."[46] Nothing in the 2024 record indicates EPA modified its basic approach to estimating compliance costs based on the real-world examples of the costs companies actually incurred or

[45] App.xxxx–xxxx.

[46] *See, e.g.*, App.xxxx.

reported to their regulators.[47] In fact, EPA repeatedly refers to its previous cost analyses as if they are proven prototypes for analyzing costs, and notes it continued to use the same basic approach.[48]

Although the agency adjusted one variable relating to zero-discharge technologies,[49] those changes did not cure the fundamental problems undermining EPA's 2020 cost estimates. For example, EPA's model predicts Alabama Power Company's Plant Miller would spend $25.2 million in capital costs to meet the new zero-discharge limits.[50] But a third-party engineering firm concluded those costs would be approximately $279 million—*an order of magnitude greater*.[51]

EPA compounded that error by feeding its erroneously-modeled cost estimates into a separate model—the Integrated Planning Model

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[47] Table A-1, attached to the 2024 Regulatory Impact Analysis (RIA), summarizes "principal methodological changes EPA made to analyses of the costs and economic impacts of [the 2024] ELG rule as compared to the analyses of the 2020 rule and the 2023 proposal." App.xxxx. But the only reference to compliance costs is how those costs were discounted and annualized. EPA identifies no other significant adjustments to its overall cost methodology.

[48] *See, e.g.*, App.xxxx; *Id.* at 3-3 (similar), App.xxxx; *Id.* at 4-5 (similar), App.xxxx.

[49] EPA specifically updated the cost methodology for brine encapsulation and solids handling. App.23; Add.23.

[50] App.xxxx.

[51] App.xxxx, App.xxxx.

(IPM), on which EPA relies to assess the broader market effects of layering the 2024 Rule's costs on top of the 2020 Rule's costs.[52] But by feeding that model flawed inputs, EPA undermined IPM's output and any conclusions EPA draws from it.

SUMMARY OF THE ARGUMENT

I.A. Under 33 U.S.C. §1311(b)(2)(A), EPA can ground technology-based ELGs only on application of "available" technologies. Available means "present or ready for immediate use," but EPA read "available" to mean theoretically possible in the future. Because EPA applied the wrong legal standard, it acted contrary to law.

I.B. EPA acted arbitrarily and capriciously in concluding that membranes, thermal evaporators, and spray dryers, "alone or in combination," are available to treat wastewater at power plants. Membranes have never been operated domestically at the scale needed to treat Scrubber Water, and evidence in the record does not support EPA's leaps in logic to conclude that use at foreign plants and pilot studies at domestic plants show the technology can be applied at operational scale. Thermal evaporators have not been deployed

[52] App.68; Add.68.

successfully to satisfy ELG limits for Scrubber Water at any domestic plant due to operational constraints that have not been overcome. EPA infers that foreign plants demonstrate the availability of thermal evaporators, but never studies whether the specific operational characteristics of those foreign plants can be replicated domestically. And EPA's conclusion that spray dryers are available industry-wide conflicts with EPA's own concession that spray dryers "may not be the best choice for all plants."

II. EPA's method for assessing the cost of treatment technologies is flawed. Commenters showed the agency that its model significantly underestimated the cost to install the systems required by the 2020 Rule. But rather than correct its model to address these documented errors, EPA persisted in using the same flawed model, and that makes its evaluation of economic achievability arbitrary and capricious.

III. Because EPA reversed course from the 2020 Rule, where it mandated the installation of costly chemical and biological treatment systems, it was obliged to consider the costs industry *actually* incurred in reliance on the 2020 Rule. EPA did not do so. It instead evaluated its

2020 *estimates* of those costs, even though industry identified that those estimates were systematically low.

IV. EPA also acted arbitrarily and capriciously by adopting new ELG limits for "unmanaged" Leachate discharges through groundwater without following required procedures. Specifically, EPA failed to define the universe of covered facilities that discharge Leachate through groundwater into waters of the United States in a manner that is FEDD under *Maui*. And EPA failed to explain how the technology on which its unmanaged Leachate ELG limits are based could apply to the vast range of potential circumstances involving through-groundwater discharges, or rationally determine the economic achievability of controlling and treating these discharges to the new limits.

V. Finally, EPA's "pass through" finding underlying its adoption of pretreatment standards for indirect dischargers arbitrarily and capriciously ignored the definition of pass through in the agency's own regulations. Alternatively, the pretreatment standards cannot be sustained because EPA's simple assumption that all pollutants will pass-through POTWs absent adoption of zero discharge technologies sidesteps rather than applies the CWA's requirement that EPA make a

determination on this question as a prerequisite for adopting pretreatment standards.

ARGUMENT

I. Standard of Review

Under the Administrative Procedure Act (APA), courts must set aside agency action that is "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." 5 U.S.C. §706. An agency acts arbitrarily when it ignores "an important aspect of the problem," or when it fails to provide "a satisfactory explanation for its action." *Motor Vehicle Mfrs. Ass'n of the U.S., Inc. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983). When confronted with facts confounding a central premise of the agency's proposed action, the agency cannot "sidestep" those facts. *Ohio v. EPA*, 144 S.Ct. 2040, 2054–55 (2024). It instead must engage them and either adjust its approach or provide a reasoned explanation for why the facts do not matter. *Id.* When interpreting statutory provisions, "'the reviewing court'—not the agency whose action it reviews—is to 'decide *all* relevant questions of law.'" *Loper Bright Enters. v. Raimondo*, 144 S.Ct. 2244, 2265 (2024) (quoting 5 U.S.C. §706).

II. EPA unlawfully adopted zero-discharge technologies that are not "available" for all wastewater streams.

A. EPA used the wrong standard to evaluate "availability."

This Court cannot uphold EPA's interpretation of "availability" under Section 1311 unless, after "applying all relevant interpretive tools," it determines that EPA's reading is the "single, best meaning" of the statute. *Id.*, 144 S.Ct. at 2266. It manifestly is not.

When interpreting a statute, courts "start with the plain meaning of its words." *Maswai*, 419 F.3d at 824. Here, the CWA requires "application of the best *available* technology economically achievable." 33 U.S.C.§1311(b)(2)(A) (emphasis added). The plain meaning of "available" is "present or ready for immediate use," "accessible," or "obtainable." *Merriam-Webster's Collegiate Dictionary* 84 (11th ed. 2020) (*Merriam-Webster*); *see also Webster's Seventh New Collegiate Dictionary* 60 (1971) ("present in such chemical or physical form as to be usable," "accessible, obtainable"). As the Supreme Court has observed, "availab[ility]" is a "limitation" with "real content," and should be evaluated in light of "the facts on the ground." *Ross*, 578 U.S. at 642–43 (interpreting "available" under 42 U.S.C. §1997e(a)); *see also Safeco Ins.*

Co. of Am. v. Robey, 399 F.2d 330, 338 (8th Cir. 1968) ("'available'" means "'actually available'" and not theoretically available).

EPA did not apply that standard. Rather than grapple with problems implementing its selected technologies at commercial scale across the country, EPA asked whether such implementation was theoretically *possible* at some point. App.5; Add.5 (interpreting availability by reference to "the pilot plant which acts as a beacon to show what is possible"); App.19; Add.19 (describing the BAT standard as "technology-forcing"). And it did so in reliance on "'legislative history and legal precedents.'" App.19; Add.19. But this Court "ordinarily resist[s] reading words into a statute that do not appear on its face," *Geston v. Anderson*, 729 F.3d 1077, 1083 (8th Cir. 2013), and recourse to legislative history is inappropriate where, as here, the plain meaning is "clear and precise," *Maswai*, 419 F.3d at 824–25.

Because EPA's availability standard deviates from the CWA's plain text, EPA's analysis was not in accordance with law. *FCC v. NextWave Pers. Commc'ns Inc.*, 537 U.S. 293, 300 (2003). That is reason alone to vacate the agency's decision.

B. EPA arbitrarily and capriciously concluded that zero-discharge technologies are available now.

Even under EPA's unlawful "what-might-be-possible-in-the-future" standard, its conclusion that not one, but three different zero-discharge technologies are "available," either alone or in combination, is arbitrary and capricious. And EPA's about-face from its 2020 conclusion that zero-discharge technologies were *not* "available" under the Act only makes the holes in EPA's analysis more problematic. *See Regents*, 591 U.S. at 30; *Fox Television,* 556 U.S. at 515.

Here, the facts on the ground demonstrate the zero-discharge technologies EPA deemed "available" in the Rule are nowhere near "present or ready for immediate use" at full scale. *Merriam-Webster* at 84. Membranes and evaporators are not available to actually (and, if so, reliably) achieve zero-discharge limits. Data gaps persist, and EPA has not grappled with the significant and likely insuperable problems of scaling up these systems and applying them to the challenging volume, flow rate, and chemistry of waste streams at large baseload plants. Indeed, some Petitioners have already concluded "it is physically impossible to construct and have the suite of technologies operational" at

their plants by 2029.[53] The challenges may be even more daunting for indirect dischargers required to implement the same zero discharge technologies by May 9, 2027. *See* App.3; Add.3.

EPA assumes an alternative reality where steam electric plants across the country are essentially identical, and systems that may be available for a specific purpose at a plant in Arizona are similarly available to a plant in Georgia. EPA claims, for example, that "40 coal-fired power plants in the United States" achieve zero liquid discharge for Scrubber Water. App.19; Add.19. EPA never identifies which specific plants it references, where they are located, or how each is achieving zero discharge. *See id.*

The numbers actually demonstrate the opposite of what EPA implies. The vast majority of plants that may be able to achieve zero discharge can do so not based on use of a technology on which EPA now relies, but rather based on other unique plant-specific factors that cannot be replicated across the industry as a whole.[54] Unsurprisingly, EPA can

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[53] Petitioners' Stay Motion filed July 26, 2024 at History No. 5417837 at p.8 ¶26.

[54] App.xxxx (explaining how low-chloride coal allows Scrubber Water to be recycled at some plants, and identifying nine plants where large evaporation ponds are used to achieve zero liquid discharge).

identify only *five* domestic plants that actually implement the technologies on which it bases its new rule.[55] And EPA never explains how the real operational constraints commenters have consistently identified have now been overcome. [56]

1. Membrane systems

EPA recognized in 2020 that no membrane system had been installed at full operational scale at any U.S. plant to treat Scrubber Water.[57] As EPA concedes, that has not changed. App.19; Add.19 ("In the 2020 rule, the EPA rejected membrane filtration as a standalone BAT technology basis due in part to the *lack of a single full-scale domestic installation*, *which is still the case today*.") (emphasis added). Of the 40 plants EPA touts, *none* rely on the membrane technologies EPA now says are available. EPA nonetheless concluded that membranes are now available because they have been deployed at foreign plants and observed

[55] App.xxxx–xxxx.

[56] In the case of Leachate, EPA provided even less technical support for setting a zero-discharge limit based on available control technologies. *See* App.134, App.124–25; Add.134, Add.124–25 (proposing chemical precipitation as the technology basis for establishing Leachate limits and only soliciting comments on the *possibility* of setting a Leachate zero-discharge limit).

[57] App.xxxx.

in pilot studies. But the record shows that EPA relied on no new information to reach these conclusions, and critical information gaps persist.

In 2020, EPA correctly identified significant gaps in data about the foreign plants where membranes have been deployed. Although EPA was aware of facilities using membranes in China, South Korea, and Finland, the agency lacked information sufficient to show "how these systems are configured or operated," "what levels of reductions they achieve," "whether there are any particular performance difficulties that result from continuous operation," or "importantly, how applicable these operations would be to plants across the United States."[58]

No new information emerged to answer these questions. EPA relies primarily on a generic two-page account of its 2021 phone calls with DuPont.[59] Vendor representations are seldom adequate,[60] especially where, as here, the information provided is incomplete. EPA claims

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[58] App.xxxx.

[59] App.xxxx–xxxx.

[60] *See Sierra Club v. Costle*, 657 F.2d 298, 364 (D.C. Cir. 1981) (noting that although vendor statements might be "informative," their ability to support a regulatory requirement "taken alone, would not be decisive")

DuPont provides "detailed information" on two China installations,[61] but that "detailed information" amounts to one paragraph for each facility, and it includes no performance data, and no operations and maintenance information. Indeed, the descriptions omit key basic facts, such as the size of the units being serviced, volume of wastewater treated, or even the type of coal these plants are burning.[62] These are critical unanswered questions that, as EPA correctly recognized in 2020, go to the heart of any rational assessment of whether the technology can be deployed at full scale at U.S. plants.[63] EPA never disputes that these gaps persist, it just ignores them to conclude implausibly that these foreign plants' continued operation provides "significant new information" that membranes can achieve zero discharge.[64]

EPA's reliance on pilot studies is similarly misplaced. None of the small-scale pilot studies EPA cites demonstrates whether membranes can be reliably operated at full operational scale.[65] Pilot studies are like science experiments—they test specific hypotheses and produce data that

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[61] App.xxxx.
[62] App.xxxx–xxxx.
[63] App.xxxx–xxxx, App.xxxx–xxxx.
[64] App.20; Add.20.
[65] *See* App.xxxx–xxxx, App.xxxx–xxxx.

can be used to revise those hypotheses.[66] EPA references three new pilot studies, but it never discusses the data they produced or how the configurations of those pilots drive any conclusions the agency might reasonably draw from them. For example, the one study EPA specifically references operated only at 264 to 793 gallons per day (gpd), far from the 7,000 to 1,810,080 gpd needed at big power plants. And it showed that plants would need to install costly additional treatment on top of the cost of membranes to be effective.[67]

EPA did not adequately address these issues, either in the preamble or its response to comments. Tellingly, it first resorts to the non sequitur that the Rule relies on three technologies.[68] But EPA concludes that membranes *alone* can be used to achieve zero discharge, and other technologies are immaterial to *that* claim. EPA also asserts that other technologies it has evaluated have been scaled up successfully, but never assesses whether those technologies share membranes' operational constraints.[69] And from all that, EPA leaps to the conclusion

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[66] *Id.* at 63, App.xxxx.
[67] *Id.* at 64, App.xxxx.
[68] *See, e.g.*, App.20; Add.20.
[69] *Id.*

that these new pilot studies provide "significant evidence" that membranes can work at full-scale applications—without addressing the confounding evidence.[70]

In short, EPA unlawfully whistled past major data gaps and technical evidence that confounds its conclusion membranes are BAT for Scrubber Water.

2. Thermal evaporation systems

Thermal evaporation technologies are not available nationwide to satisfy zero-discharge limits alone. EPA said as much in 2015.[71] Nothing has changed.

Indeed, experience with thermal evaporation systems, before and after 2015, has revealed many difficulties and operational uncertainties. Much of the uncertainty is due to the high variability in Scrubber Water constituents.[72] Because Scrubber Water is so corrosive, engineers must either choose exotic (and expensive) metal components for thermal evaporators or plan for continual replacement of parts and the associated

[70] *Id.*
[71] App.xxxx.
[72] App.xxxx.

downtime.[73] Corrosion will eventually occur even where the best metals are used.[74]

EPA notes that two facilities—Iatan and Petersburg—have deployed thermal evaporation systems, but both have experienced significant problems.[75] Iatan attempted to use thermal evaporation but had to abandon the system in 2017 due to operational challenges typical for these types of systems.[76]

Ditto for the Petersburg plant. It installed its system in 2018, but the operator reports that "[t]he thermal system can only handle a portion of the [Scrubber Water] at the station."[77] Many assumptions about how the system would perform at various flow levels have proven faulty, including the need for pretreatment systems to be "two or three times" more robust.[78]

Lacking demonstrated effectiveness of thermal evaporation systems at operational scale, EPA turns to a familiar crutch—foreign

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[73] App.xxxx.
[74] *See* App.xxxx.
[75] *See* App.xxxx–xxxx, App.xxxx.
[76] App.xxxx.
[77] App.xxxx–xxxx.
[78] App.xxxx.

installations. But as with membranes, EPA is indifferent to the foreign plants' specific operational features or whether their unique characteristics can be replicated domestically. For example, EPA references Italian plants that use different coal that may not be representative of coal used at U.S. plants, and ignores that the facilities where thermal evaporators have been installed frequently bypass those systems due to their exorbitant operational costs.[79] Additionally, information about the actual operational characteristics of Chinese plants using thermal evaporation remains unavailable.[80]

The agency never meaningfully engages with the real operational constraints on the systems identified in the record, and that makes its conclusions arbitrary and capricious. *Ohio*, 144 S.Ct. at 2054–55.

3. Spray dryers

EPA's consideration of spray dryers is even more sparse. Until now, EPA has never considered that technology as more than a supplement to other systems, and it only can be used at plants with certain configurations.[81] Spray dryers also present many of the same problems

[79] App.xxxx; App.xxxx.
[80] App.xxxx.
[81] App.xxxx–xxxx.

that plague thermal evaporation systems—most notably, operators must specially handle the challenging solids spray dryers produce.[82]

In both the 2015 and 2020 Rules, EPA did not even consider spray dryers as a standalone technology system among the many treatment systems it evaluated.[83]

In the Rule, EPA again notes that such systems can be used at some plants to supplement other systems.[84] And the agency candidly acknowledges that "[spray dryers] may not be the best choice for all plants."[85] But it then brushes its own concessions aside and concludes that, because spray dryers have been installed at three domestic plants, they must be available at every plant and standing alone can achieve zero liquid discharge.[86]

Once again, EPA has failed to engage the logistical constraints that preclude the use of spray dryers broadly across the utility sector. Remember, the agency concluded that this technology, *standing alone*, is sufficiently available to achieve zero liquid discharge of Scrubber Water.

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[82] App.xxxx.
[83] *Supra* at 9–15.
[84] *See* App.xxxx–xxxx; App.12; Add.12.
[85] App.xxxx–xxxx.
[86] *Id.*

The unexplained leaps in reasoning, and the failure to address significant evidence showing why spray dryers cannot be deployed broadly, all render the agency's conclusion arbitrary and capricious.

4. Because it defectively evaluated these technologies individually, EPA also arbitrarily and capriciously concluded that they can work in combination.

Perhaps recognizing that none of its troika of technologies is "available" standing alone, EPA announces these technologies could be used in combination to achieve zero discharge.[87] But serial flaws in the agency's consideration of the individual technologies defeat this cumulative effort, too. And ultimately, the agency never conducts the type of analysis needed to support that conclusion. The chief reason why EPA's analysis is flawed for each technology is the agency's blindness to the real site-specific and plant-specific reasons why these technologies are only available (if at all) in a narrow set of circumstances. Because EPA declined to engage with each technology's limitations, it cannot

[87] App.18; Add.18.

know whether the technologies can work effectively together to fill each other's availability gaps. [88]

III. EPA arbitrarily and capriciously concluded that zero-discharge technologies are "economically achievable."

If EPA wanted to push to the limit of "available" treatment technologies, it was imperative that it scrupulously analyze whether implementing those technologies is economically achievable. After all, higher-than-expected implementation costs are strong evidence that the technology may not truly be available. But EPA was far from scrupulous in how it evaluated cost. Notwithstanding substantial real-world data revealing significant flaws in EPA's model for estimating compliance costs, EPA persisted in using that model with no meaningful correction. Because it failed to forthrightly address or otherwise explain contrary data, EPA's "economic achievability" finding is arbitrary and capricious. *Ohio*, 144 S.Ct. at 2054–55.

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[88] The same flaws and shortcomings in EPA's analysis discussed above for Scrubber Water also applies to the establishment of zero-discharge limits for Leachate. For example, the technologies on which EPA relies to impose zero-discharge limits for Leachate are the same technologies used to for Scrubber Water. For these reasons, it is arbitrary and capricious for EPA to set zero-discharge limits for both Leachate and Scrubber Water.

Accurately assessing the cost of installing and operating treatment technology is at the heart of EPA's statutory duty under the CWA. The statute directs EPA to select only those technologies that are "economically achievable," and specifically instructs EPA to consider "the cost of achieving such effluent reduction." 33 U.S.C. §§1311(b), 1314(b)(2)(B). Fair evaluation of the cost of regulation is essential to reasoned decision-making. *Michigan v. EPA*, 576 U.S. 743, 753, 759 (2015).

EPA had a perfect opportunity to fairly assess how its 2020 cost projections matched the costs industry was actually incurring. EPA asked larger utilities to provide that information,[89] and most did.[90] And as noted above (at 14–15), the data showed EPA's projections did not match reality. The 2020 Rule not only underestimated costs, but did so systematically, sometimes by an order of magnitude. And this cost data didn't come from just abstract table-top projections—they were based on contractor bids informed by months of on-the-ground engineering and design work at individual plants.

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[89] *See, e.g.*, App.xxxx–xxxx.

[90] *See, e.g.,* Petitioners' Stay Motion filed July 26, 2024 at History No. 5417837 at pp.1–10.

At Plant Bowen, for example, the ongoing construction effort has already cost the utility $50 million and is expected to cost $110 million once complete, even though EPA estimated only $28.6 million in capital costs to install a biological treatment system to comply with the 2020 Rule.[91] Plant Mitchell's costs are also illustrative. It provided EPA with estimates resulting from detailed plant- and unit-level evaluation, which State regulators scrutinized during rate-recovery proceedings. Its fine-tuned estimate ($48 million) is more than three-and-a-half times EPA's ($13 million).[92] This information—all in EPA's administrative record—reflects real-world numbers and estimates informed by months of work by utilities to design cost-efficient, functioning systems at actual sites.[93]

After reviewing these submissions, EPA was obliged to engage the confounding data meaningfully. *See, e.g.*, *Wild Virginia v. U.S. Forest Serv.*, 24 F.4th 915, 927–28 (4th Cir. 2022) (finding agency action arbitrary and capricious when real-world data differed materially from results predicted by agency's model); *accord Zen Magnets, LLC v.*

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[91] Intervenors' Response to Petitioners' Stay Motion filed August 20, 2024 at History No. 5426423 at pp.8–9.

[92] Petitioners' Stay Motion filed July 26, 2024 at History No. 5417837 at pp.5–6, 17.

[93] *See*, *e.g.*, App.xxxx–xxxx.

Consumer Prod. Safety Comm'n, 841 F.3d 1141, 1149 (10th Cir. 2016); *Catawba Cnty. v. EPA*, 571 F.3d 20, 45 (D.C. Cir. 2009) (per curiam). It never did.

EPA instead made excuses, first complaining that utilities had provided their data in the wrong format or with insufficient specificity.[94] Leaving aside that EPA did not request the data in any particular format, it easily could have served utilities follow-up requests for data to be delivered in precisely the format EPA desired. That never happened. It instead used this illusory "formatting" grievance to avoid meaningfully engaging with contrary data.

Nor does it matter that the utilities presented unit-level costs rather than industry-wide figures.[95] Economic achievability is determined by adding up plant-specific cost estimates to obtain industry-wide estimates. If EPA's unit-level estimates consistently and dramatically underestimate costs, then EPA's industry-wide estimate necessarily compounds that error. Shifting focus to the broader industry does not solve EPA's failure to grapple on the record with evidence

[94] App.xxxx, App.xxxx.
[95] App.xxxx, App.xxxx.

confounding its conclusions. And properly assessing industry-wide costs was EPA's burden to bear, especially because only EPA can collect information for the entire industry.

Ultimately, EPA acknowledges "it may have underestimated compliance costs for some plants."[96] But acknowledging a problem is not the same as engaging it. *Ohio*, 144 S.Ct. at 2054–55 ("[A]wareness is not itself an explanation."). And *no* evidence shows EPA conducted *any* analysis to better understand the margin of error in its previous analysis, why its estimates were so wide of the mark, or why it remained appropriate to rely on a cost-estimation methodology that was so obviously flawed. So, it is no surprise that, in concluding that its "cost estimates provide a reasonable estimate for purposes of determining economic achievability," EPA could only speculate that it might have made offsetting errors—that is, that "it may have … overestimated costs for other plants."[97] That is classic "sidestep[ping]," and it falls well short of an agency's obligation when confronted with data confounding its analysis. *Ohio*, 144 S.Ct. at 2055.

[96] App.xxxx.
[97] *Id.*

Although these egregious examples of EPA's failure to correct its flawed cost-estimating methodology involve Scrubber Water systems, the error affects all waste streams, including Leachate. The technologies on which EPA relies to impose zero-liquid-discharge limits on Leachate are the same used to impose similar limits on Scrubber Water. And its method of estimating the cost of implementing those technologies is no different.[98] For these reasons, it also is arbitrary and capricious for EPA to set zero-liquid-discharge limits for Leachate generated at affected facilities.

IV. EPA arbitrarily and capriciously ignored the substantial costs industry incurred in reliance on the 2020 Rule.

This case provides a textbook example of why agencies must provide a detailed justification for reversing course on a policy that induced substantial costs in reliance. EPA acknowledged in 2024 that it was reversing decisions made in 2020, so it was obligated to understand any reliance interests from the earlier decisions.[99] *Fox Television*, 556 U.S. at 515. The first step toward meeting that obligation was to understand the costs incurred to comply with the 2020 Rule and how

[98] App.xxxx.
[99] App.22; Add.22.

those costs might affect the economic achievability of zero-discharge technology. EPA did not even begin to meet that obligation.

True, EPA collected data on what utilities spent to comply with the 2020 Rule. But EPA then disregarded that data in evaluating how the utility sector would be affected by stacking the cost of zero-discharge technology on top of 2020-Rule costs. Instead, EPA plugged the rosy estimates from 2020 into IPM, which then predicted the results on regulated utilities wouldn't be so bad.[100] At best, that produced the hypothetical costs industry *might* have incurred had EPA's cost-estimation model been accurate. But EPA was required to understand and account for the actual costs utilities incurred to comply with the 2020 Rule, *Ohio*, 144 S.Ct. at 2054–55, and explain in detail why they are justified, *Fox Television*, 556 U.S. at 515. EPA failed to do so, making its action arbitrary and capricious.

[100] *Id.*

V. EPA failed to follow statutory procedures, and instead relied on abstractions and assumptions, in setting novel ELG limits on "functionally equivalent" discharges of Leachate through groundwater.

Every facility the Rule regulates generates wastewater streams controlled, treated, and then discharged through an outfall (e.g., a pipe) directly into WOTUS. These "point source" discharges are subject to limits—which must conform to ELG rules—in a facility's national pollutant discharge elimination system (NPDES) permit. *See* 33 U.S.C. §§1342(a) (NPDES permit requirements), 1362(14) (point source definition). Some of these facilities *might* also inadvertently leak pollutants into the ground that enter groundwater and indirectly flow to a WOTUS. If that happens in a manner "functional[ly] equivalent" to a direct discharge into WOTUS (a "FEDD"), the discharge is prohibited unless authorized by an NPDES permit. *Maui*, 590 U.S. at 170.[101]

The Rule sets ELG limits on releases of Leachate that are a FEDD under *Maui*. 40 C.F.R. §§423.11(ff)(1), 423.13(l)(2)(ii). But here, too, EPA cut corners to achieve broader objectives and did not comply with basic ELG-setting requirements. EPA did not (and could not) define the

[101] A FEDD determination is made via case-by-case analysis of seven non-exclusive factors identified in *Maui*. 590 U.S. at 184-85.

universe of covered facilities (is it 1 or 100?), explain how the technology on which those limits are based will apply to myriad possible circumstances involving Leachate FEDDs, or credibly determine the economic achievability of controlling and treating Leachate FEDDs to meet the new limits. Of course, EPA could do none of those things without knowing the universe of covered FEDDs and their circumstances.

EPA could have addressed the problem by allowing state permit writers to set discharge limits on Leachate FEDDs based on site-specific facts and their best professional judgment—an approach EPA often follows where there is an insufficient basis to set a single national ELG limit.[102] But EPA instead set a single, one-size-fits-all limit that applies to *both* direct surface discharges of Leachate under 40 C.F.R. §423.11(ff)(2) (which petitioners do not challenge), *and* indirect Leachate releases that flow through groundwater before entering WOTUS in a manner that is a FEDD under 40 C.F.R. §423.11(ff)(1).[103] Technology-

[102] *See* App.6; Add.6.

[103] The final rule sets a single ELG limit for arsenic and mercury in "unmanaged combustion residual leachate," 40 C.F.R. §423.13(l)(2)(ii), App.101; Add.101. The rule defines "unmanaged combustion residual leachate" to include two very different type of discharges: (1) where it is

based ELG limits are routinely applied to pollutant discharges at the surface, but application to releases of pollutants that disperse through groundwater before entering WOTUS will be novel, complex and highly fact-specific. The ELG limit EPA set for Leachate discharges through groundwater is ungrounded, unworkable, and effectively a complete prohibition on "functionally equivalent" discharges of Leachate.

To set an ELG limit, EPA must analyze the availability (including engineering feasibility) and economic achievability of technology to treat an identified category of industrial discharge. 33 U.S.C. §§1311(b)(2)(A), 1314(b)(2). The analysis is not abstract. Rather, Congress required EPA to consider age of equipment and facilities involved, the process employed, the engineering aspects of the application of various control techniques, process changes, the cost of achieving effluent reduction, and non-water quality environmental impacts (including energy requirements). 33 U.S.C. §1314(b)(2)(B). Given these factors, EPA must

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"determined by the permitting authority to be the functional equivalent of a direct discharge to waters of the United States (WOTUS) through groundwater", and (2) where it "[h]as leached from a waste management unit into the subsurface and mixed with groundwater prior to being captured and pumped to the surface for discharge directly to WOTUS." 40 C.F.R. §423.11(ff).

both define *and* identify the discharge category to realistically analyze available technology and economic achievability.

Unmanaged Leachate that leaves a regulated facility, travels through groundwater, and then enters WOTUS in a manner *functionally equivalent* to a direct discharge into WOTUS is a unique (and so far unidentified) waste stream. Naturally, once leachate enters groundwater it can dissipate, intermingle with other natural constituents, and potentially alter over time and distance.

So which facilities will be subject to EPA's new ELG limit for unmanaged Leachate FEDDs, and what do those discharges look like? EPA does not say, nor could it given the Supreme Court's recognition in *Maui* that FEDD determinations must be site-specific evaluations because "there are too many potentially relevant factors applicable to factually different cases." *Maui*, 590 U.S. at 184. Instead, EPA's proposal estimated costs and pollutant loadings for Leachate FEDDs by assuming *all* impoundments or landfills that lack a composite liner or where the liner status was unknown would result in a FEDD.[104] This

[104] *See* App.xxxx (identifying 103 landfills that are not composite lined and 219 surface impoundments that are not clean closed or composite lined).

ungrounded assumption rests on multiple unestablished notions—that (1) all these impoundments or landfills leak Leachate; (2) all these Leachate leaks reach groundwater; (3) all the Leachate leaks that enter groundwater will reach a WOTUS; and (4) all the Leachate leaks that reach a WOTUS will be functionally equivalent to a direct discharge.[105] But EPA has not established the prerequisites to a FEDD determination for *any* covered facility, much less the universe of unlined impoundments and landfills.

Even if one or more covered facilities leak Leachate that flows through groundwater to WOTUS (which is not documented), there may be significant time or distance involved, intermingling with other natural or anthropogenic chemicals; chemical changes; and other circumstances that preclude a FEDD determination under case-by-case *Maui* factors. Characteristics considered under *Maui*, but not considered by EPA in the rule, include:

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[105] EPA attempted to correct its evaluation of costs and loadings at the final rule stage by performing an analysis of lower and upper bounds, but that analysis rested on even more assumptions. App.xxxx (assuming, for example, three scenarios for an "upper bound" analysis and two scenarios for a "lower bound" analysis). None of EPA's analysis at the final rule stage was subject to public comment.

- distance traveled: is it 15 feet or 15 miles? The answer can determine where the waste stream is captured and treated, which can make a major difference in engineering and costs.
- time to reach WOTUS: is it 10 days or 10 years? The answer can determine the ability to even make a FEDD finding, as well as determine how to address such a discharge (if it is a FEDD).

Similar uncertainties apply to all the *Maui* factors, including (critically) flow rate, constituents in groundwater, and material travelled through.[106] So how to tailor an ELG to the unique characteristics of Leachate FEDDs, and on that basis determine available and economically achievable treatment? EPA side-stepped the difficulty of applying these factors, and declined to acknowledge their relevance. Instead, it assumed unmanaged Leachate FEDDs have the same pollutant characteristics as managed Leachate.[107] But this ignores the effects of mixing Leachate with groundwater, which normally causes pollutants to become more diffuse and can complicate treatment (e.g., by increasing the volume of wastewater that must be treated and by

[106] Indeed, the seven enumerated *Maui* factors are "just some of the factors that may prove relevant (depending on the circumstances of a particular case)." *Maui*, 590 U.S. at 184.

[107] For example, instead of developing data specific to unmanaged Leachate FEDDs, EPA simply applied "the untreated and chemical-precipitation treated [Leachate] average pollutant concentrations" it developed for the 2015 rule. App.xxxx–xxxx.

complicating capture and control of the wastewater). Furthermore, mixing with groundwater and contacting underground formations can change pollutant makeup (e.g., by adding constituents or changing their form or concentration). EPA has previously recognized the importance of accurately characterizing a waste stream when selecting treatment technologies.[108] But here, it did not use actual concentration data to develop average pollutant concentrations for Leachate FEDDs (a standard practice for any other type of discharge).

EPA also whiffed on technology and costs to treat unmanaged Leachate FEDDs because its wide range of assumptions rendered its estimates wholly inadequate. EPA could not say, for example, the time needed to treat pumped groundwater to achieve ELG limits, the volume of groundwater to be pumped, the amount of piping needed to reach treatment equipment, whether a new outfall must be created and permitted, whether demolition of existing equipment and facilities will

[108] For the 2015 Rule, EPA collected and analyzed wastewater samples from 13 power plants and directed four additional plants to collect and submit samples. App.xxxx, App.xxxx. EPA then analyzed the sampling data, calculated average pollutant concentrations, and identified "pollutants of concern" for each type of wastewater. App.xxxx–App.xxxx.

be necessary to accommodate new equipment, or what measures are needed to address baseline pollutants in the groundwater (e.g., those contributed by other industrial sites or even naturally occurring).

Ultimately, a determination that a FEDD is occurring will require a fact-intensive, site-specific inquiry that can be made only on a case-by-case basis. That inquiry will naturally inform treatment options, such as where and how the Leachate can be captured, controlled, treated, and discharged. But instead of allowing permit writers to make those determinations for each facility, including the ability to set Leachate limits based on the particular facts and their best professional judgment (BPJ), EPA set one ELG limit for all permit writers to impose on facilities—and did so without identifying or analyzing the actual facilities that will be regulated, much less whether and how those ELG limits could be met under the circumstances of those FEDD discharges.[109]

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[109] The problem with forcing a single ELG limit across an unknown universe of parameters is one of EPA's own making. Instead of resting a single limit on a chain of flawed assumptions, EPA could have required permit writers to perform BPJ analyses for any identified FEDDs. BPJ ELGs are standard practice where the Agency has not set a national ELG. *See* EPA, EPA-833-K-10-001, U.S. EPA NPDES Permit Writer's Manual at 5-45 (Sept. 2010), https://bit.ly/3YHzpuS. EPA may argue that key facts will be addressed in individual permit proceedings, but that underscores that effluent limits should be set in those proceedings

Due to the "unmanaged" and diffuse nature of the category, few if any facilities are likely to be able to capture and treat all unmanaged Leachate FEDDs to the new limits; even if they do, it is unlikely the newly controlled and treated waste stream would be redirected to groundwater rather than discharged through the facility's permitted outfall. The result will likely be no "functionally equivalent" discharge through groundwater once the Leachate is captured and treated. So, the ELG limit is likely to function as an unwritten FEDD prohibition rather than an actual permit limit as intended by the CWA.

EPA's limits on unmanaged Leachate FEDDs is arbitrary and capricious because it failed to account for or tailor the limits to the unique nature of such discharges.

(based on best practical judgment), not through a single limit that fails to account for site-specific characteristics. The same complaint does not apply to the new ELG limit for unmanaged Leachate pumped to the surface prior to a direct discharge to WOTUS under 40 C.F.R. §423.11(ff)(2), which does not involve a hypothetical class of discharges yet to be identified or such varied circumstances.

VI. EPA's "pass through" analysis for indirect discharges was arbitrary and capricious and failed to comply with the CWA.

EPA purported to justify the pretreatment standards adopted in the Rule upon a finding that, absent the adopted standards, certain pollutants would "pass through" POTWs. *See* App.58; Add.58.

In describing the criteria for its pass-through findings, EPA stated that "[a] pollutant is determined to pass through POTWs when the median percentage removed nationwide by well-operated POTWs is less than the median percentage removed by the BAT/NSPS technology basis." App.58; Add.58. For the pretreatment standards based on zero-discharge technologies (applicable to Leachate, BATW, and Scrubber Water from certain facilities), however, EPA noted that it "did not conduct its traditional pass-through analysis for wastestreams with zero-discharge limitations or standards." *Id.* Instead, EPA simply assumed that "*all* pollutants in those wastestreams treated by the zero-discharge technologies would otherwise pass through the POTW absent application of the zero discharge technologies that form the BAT bases for [Scrubber Water, BATW, and Leachate]." *Id.* (emphasis added).

A. EPA failed to follow its own regulations.

EPA's pass-through findings for the pretreatment standards adopted in the Rule are arbitrary and capricious because they ignore, and fail to conform to, the definition of "pass through" included in EPA's regulations at 40 C.F.R. §403.3(p):

> [A] [d]ischarge which exits the POTW into waters of the United States in quantities or concentrations which, alone or in conjunction with a discharge or discharges from other sources, is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation).

The pretreatment standards in the Rule are premised on pass-through analyses that completely ignore this regulation, which defines pass-through with reference to whether discharges from a POTW cause a violation of any requirement of the POTW's NPDES permit. EPA did not point to any such violations in making its pass-through findings. In failing to apply the definition of pass through in its own regulations, EPA acted arbitrarily and capriciously.[110] *See, e.g.*, *Nat'l Env't Dev. Assoc.'s Clean Air Project v. EPA*, 752 F.3d 999, 1009 (D.C. Cir. 2014).

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[110] Pursuant to Federal Rule of Appellate Procedure 28(i), Petitioner City Utilities of Springfield, Missouri adopts section I of the portion of the argument in the initial brief of Petitioner City Water, Light and Power in No. 24-3009 addressing EPA's failure to follow its own

B. Alternatively, EPA's assumption that all pollutants pass through POTWs absent zero-discharge pretreatment standards is inconsistent with CWA requirements.

Even if EPA's evaluation of pass through in a manner inconsistent with its regulations was not fatal to the Rule's adoption of pretreatment standards, EPA's pass-through finding in support of adoption of zero discharge technologies fails to comply with the statutory text, which requires the agency to establish pretreatment standards for pollutants "which are *determined* not to be susceptible to treatment by such treatment works or which would interfere with the operation of such treatment works." 33 U.S.C. §1317(b) (emphasis added). Here, EPA did not make a determination that pollutants subject to zero-discharge technologies would otherwise interfere with or pass through POTWs, it simply *assumed* this to be the case.

EPA freely acknowledges that it "did not conduct its traditional pass-through analysis for wastestreams with zero-discharge limitations or standards." App.58; Add.58. In lieu of this traditional analysis, EPA leapt to the conclusion that that "all pollutants in those wastestreams . .

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regulation defining pass through. *See In re Target Corp. Customer Data Sec. Breach Litig.*, 855 F.3d 913 (8th Cir. 2017).

. would otherwise pass through the POTW absent application of the zero discharge technologies." *Id.* EPA cited no quantitative support concerning the removal efficiency of POTWs in making this sweeping assertion.[111] EPA's own Technical Development Document acknowledges the varying degrees of removal efficiencies inherent to zero discharge systems.[112]

Simply assuming that all pollutants will otherwise pass through POTWs without application of zero discharge technologies elides rather than applies the statutory requirement to make a "determination" that pollutants will pass through POTWs as a prerequisite for adopting pretreatment standards under section 307(b) of the CWA, 33 U.S.C. §1317(b). EPA did not follow the statutory text and has exceeded its authority. *Iowa League of Cities,* 711 F.3d at 877–78.

[111] The closest EPA came to addressing POTW removal efficiency was to assert vaguely that "typical" POTWs do not treat waste streams for salts." App.58; Add.58.

[112] App.xxxx-xxxx.

CONCLUSION

For the foregoing reasons, this Court should hold unlawful and set aside the Rule.

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CERTIFICATE OF COMPLIANCE

I certify that this brief complies with the Court's September 10, 2024 briefing order, ECF No. 5434088, modified October 28, 2024, ECF No. 5450788, because it contains 10,372 words, excluding the parts exempted by Fed. R. App. P. 32(f).

I also certify that this brief complies with the requirements of Fed. R. App. P. 32(a)(5)-(6) because it has been prepared in 14-point Century Schoolbook font, using Microsoft Word.

I further certify that this PDF file was scanned for viruses, and no viruses were found on the file.

/s/ *George P. Sibley, III*
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CERTIFICATE OF SERVICE

I hereby certify that on this 7th day of November, 2024, I electronically filed the foregoing with the Clerk of Court for the United States Court of Appeals for the Eighth Circuit by using the CM/ECF system, which shall send notification of such filing to all CM/ECF participants.

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