U.S. Chamber of Commerce
Global Energy Institute

# A Closer Look at EPA's Powerplant Rule

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# Introduction

**Last month, the EPA released a major new rule intended to reduce carbon dioxide emissions from powerplants. The rule primarily targets electricity made from coal and natural gas, upon which America currently relies for about 60% of its electricity production.**

This analysis goes behind the curtain to examine the methodology and assumptions offered by EPA to support its powerplant rule. Based on our examination of the highly technical documents required by law to inform sound regulatory decision-making, EPA's work reveals some significant shortcomings that deserve closer attention. These omissions and discoveries reside primarily within the 359-page Regulatory Impact Analysis, or RIA for short, that sets forth an excruciatingly detailed – yet incomplete – analysis of the multitude of costs and benefits that are supposed to underpin EPA's claims of huge societal gain at minimal economic pain. The serious shortcomings in this analysis undercut the rule and reveal that the cost-benefit calculations are deeply flawed.

In particular, we detail EPA's claims that its proposal would have very little impact on electricity markets or emissions, because, according to the agency, the vast majority of reductions will occur even in the absence of its powerplant rule. These claims lead to a remarkable underestimation of power sector changes – and associated costs – necessary to achieve rule compliance. This analysis further details how EPA has chosen to ignore the impacts from other major rulemakings it is currently promulgating—rulemakings that promise to have a materially additive impact on electricity demand and, therefore, an undisclosed widening effect on the gap between projected future electricity supply and demand. Finally, we explore EPA's own modeling of powerplant rule impacts and independent real-world data that undercut its claims that the primary system it mandates for compliance meets the "adequately demonstrated" requirement of the Clean Air Act.

**Background**

Despite increases in population and GDP, U.S. economy-wide carbon dioxide emissions have been reduced 18 percent, from more than six billion metric tons in 2005 to just under five billion in 2021. Much of this reduction is coming from the power sector. In 2005, coal generated 49% of U.S. electricity. In 2021, it was just 21%. Natural gas generation has seen a corresponding increase, going from 20% in 2005 to just under 40% in 2021. Rapid expansion of wind and solar generated electricity has also contributed to the power sector's world-leading emissions reductions, with non-hydro renewables now comprising more than 12 percent of nationwide generation. Gains have also been made in areas such as energy intensity, which reflects the efficiency of our energy use.

The Chamber strongly supports a low carbon transition. We've been among the biggest supporters of investments in research, development and deployment for a host of technologies, including renewables and carbon capture and sequestration. We're also leading an effort to enact permitting reforms that will address extensive delays to build transmission lines and site renewable energy projects.

However, we believe that while government policies can help drive ambition, regulations must be based on realistic assumptions and that rulemakings should be transparent and use credible assumptions and facts. Unfortunately, EPA's new powerplant rule falls far short on both counts.

The EPA claims that the new rule will cost only $960 million annually through 2042, while generating $6.9 billion in annualized climate and public health benefits (totaling up to $85 billion in net benefits through 2042). As demonstrated below, these numbers require further scrutiny by both EPA and stakeholders to better understand the true impacts of the proposed rule.

**In this analysis we have focused on three core issues that are material to EPA's claims that the regulation will have modest compliance costs and minimal impacts on the power sector:**

1. Unrealistic claims of massive emissions reductions occurring in the absence of the new EPA rule.

2. Omitting materially increased electricity demand resulting from concurrent EPA rulemakings.

3. Modeling outputs and real-world data that raise questions about the deployment timelines and "adequately demonstrated" nature of CCS technology.

# 1 EPA Claims the Rule Drives Negligible Emissions Reductions

**Perhaps the most surprising part of this analysis is that EPA's own modeling shows its powerplant rule will reduce power sector carbon emissions by a grand total of about 1% in 2040.**

How can that be true? The answer is found in a complex web of modeling assumptions that result in massive power sector changes in the baseline scenario before the proposed rule's requirements are applied. This extremely consequential baseline scenario appears in turn to be driven primarily by two factors: optimistic assumptions regarding Inflation Reduction Act (IRA) impacts and very low natural gas prices. In both cases, EPA's forecast differs significantly from that predicted by the Energy Information Administration (EIA).

First, the EPA has included the IRA and its many financial incentives for wind, solar, and other generation technologies in the "baseline" it is using to evaluate the impacts – and most importantly the costs – of its proposed rule. Thus, the IRA's financial incentives for cleaner energy technologies are baked into the baseline emissions reductions used by EPA's RIA.

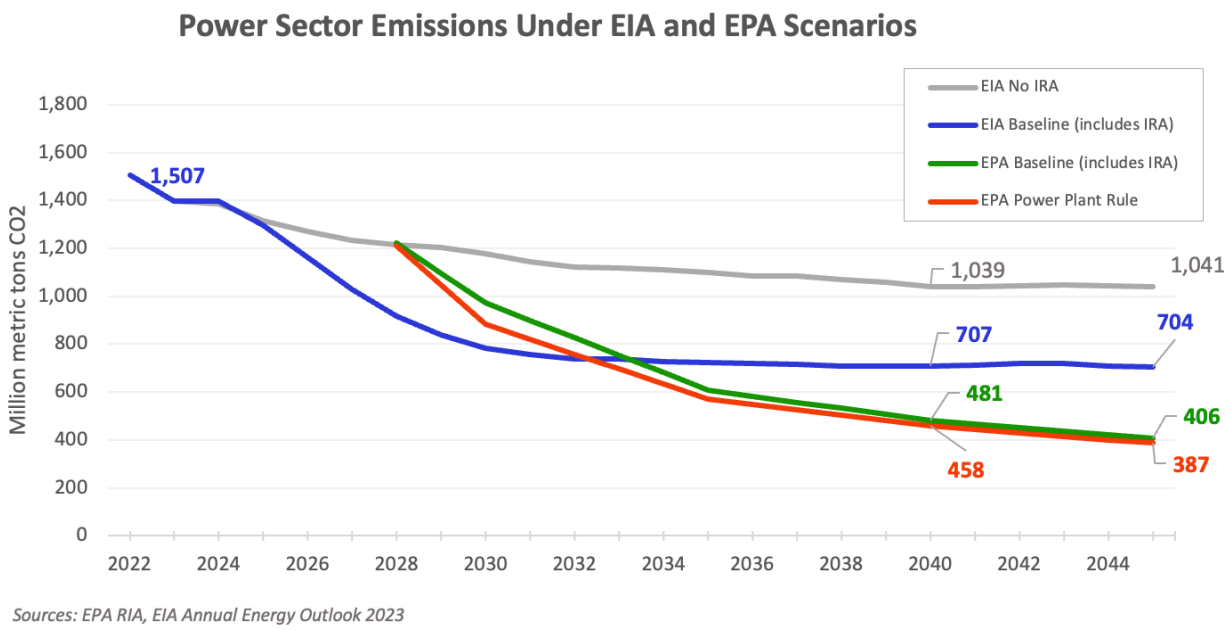
In theory, this seems at least plausible. The IRA is law and seems likely to drive significant changes across the energy economy. The Chamber and its membership support these incentives and are excited about the prospects to deliver major clean energy progress throughout the country. But there are numerous reasons to believe that EPA's assumptions regarding IRA's impacts are supercharged by unrealistic modeling assumptions.

First and foremost among these are assumptions underlying EPA's approach to permitting. Of course, the Chamber is leading the business community in support of meaningful permitting reform that we believe can unleash meaningful emissions reductions in the power sector, but these unrealized reforms are premature for inclusion in EPA's modeling.

Specifically, EPA's model effectively allows for the instantaneous construction of transmission "to solve for the optimal mix of generation and transmission additions to meet capacity and energy needs." (Source: EPA Power System Operation Assumptions document). Aided by IRA tax incentives and the instantaneous construction of transmission lines, EPA's baseline forecast leads to nearly 650 GW of new renewables capacity operational through 2040 – a quadrupling of current capacity (see Table 3-14 of the RIA). Ignoring the immense permitting obstacles associated with such a dramatic transformation of the power sector renders EPA's baseline projections unrealistic, and in doing so calls into question the agency's assertion that compliance with the rule will be inexpensive and easy to meet.

Given the amount of time it takes to build virtually anything—due to extensive federal permitting delays as well as supply chain and construction challenges—the idea that America can quadruple its current renewables capability in the next 16 years is, at best, a stretch. The transmission piece of the equation is particularly unrealistic, given that it is not uncommon for the permitting of these facilities to take a decade or more. In fact, the widely publicized REPEAT Project led by Princeton University modeled IRA impacts and concluded that over 80% of IRA's potential emissions reductions would not materialize without reforms that enable accelerated transmission buildout.

The second key factor is natural gas prices and associated supply and demand outlooks, where EPA's assumptions are markedly different than those of the highly respected EIA. Following is a chart comparing EIA and EPA power sector emissions forecasts under the rule and under EIA's 2023 Annual Energy Outlook baseline forecast (which includes IRA implementation) and a side case that does not include IRA implementation.




*Sources: EPA RIA, EIA Annual Energy Outlook 2023*

Not surprisingly, both EIA and EPA project large emissions reductions from implementation of the IRA (like EPA, EIA's model effectively assumes no permitting obstacles for new electric transmission lines—an unrealistic input that likely overstates emissions reductions). But even with those assumptions, EIA disagrees significantly with EPA. In 2040, EIA projects power sector emissions 47% higher than EPA. In 2045, EIA is 73% higher, or 298 million metric tons (704 mmt vs 406 mmt). If EPA's remarkably aggressive baseline is in fact unrealistic, then tens of billions in regulatory compliance costs are being missed in its forecast.

The difference between the two agency forecasts is dominated by different views on coal and natural gas demand, and prices. As highlighted in the table below, EPA is projecting that only 79 TWh of coal generation will remain in 2040—225 TWh less than EIA. Meanwhile, EPA is projecting far higher natural gas generation throughout the powerplant rule's compliance period than EIA.

**Table 1. Projected Generation (TWh)**

| | | 2028 | 2030 | 2035 | 2040 |
|---|---|---|---|---|---|
| EPA RIA | Coal | 484 | 309 | 120 | 79 |
| | Natural Gas | 1773 | **1771** | **1402** | 1164 |
| | Nuclear | 765 | 734 | 660 | 616 |
| | Renewable | 1258 | 1572 | 2509 | 3172 |
| EIA 2023 AEO | Coal | 468 | 359 | 354 | 314 |
| | Natural Gas | 1249 | **1169** | **1036** | 1115 |
| | Nuclear | 766 | 758 | 700 | 625 |
| | Renewable | 1979 | 2255 | 2659 | 2916 |

These differences in coal and natural gas generation projections are major factors behind the enormous reductions projected by EPA's IPM model. But what is driving the important differences in generation? Not surprisingly, it is each model's natural gas price and demand forecasts. The table below compares EPA and EIA's benchmark natural gas price forecasts, and highlights that, in 2035 and 2040, EIA expects natural gas prices to be approximately double EPA's corresponding projections. Meanwhile, Table 3 compares demand outlooks between EPA and EIA, showing that while EIA projects total demand (domestic consumption and net exports) growing by 15%, or 5.5 tcf/year between 2028 and 2050, EPA's model projects a decline in natural gas demand of 12%, or 4.9 tcf/year.

Understanding the drivers of this discrepancy is key and warrants further exploration to determine whether EPA's underlying supply, demand and price assumptions are realistic. Further, to better inform stakeholders and the public, EPA should conduct a sensitivity analysis projecting the costs and benefits of its rule using EIA's price and demand outlooks.

**Table 2. Henry Hub Benchmark Natural Gas Prices in Baseline Forecasts ($)**

| Year | EPA Baseline | EPA Rule | EIA AEO 2023 Baseline | $ difference, EIA – EPA | % difference, EIA – EPA |
|---|---|---|---|---|---|
| 2028 | 3.00 | 3.00 | 2.80 | -0.20 | -7% |
| 2030 | 2.40 | 2.60 | 2.91 | 0.51 | 21% |
| 2035 | 1.90 | 1.80 | 3.68 | 1.78 | 94% |
| 2040 | 2.00 | 2.00 | 3.94 | 1.94 | 97% |

**Table 3. EPA and EIA Natural Gas Demand Forecasts**

| Year | 2028 | 2030 | 2035 | 2040 | 2045 | 2050 | Change, 2028-2050 (tcf/yr) | Percent change, 2028-2050 |
|---|---|---|---|---|---|---|---|---|
| **Total Domestic Consumption (tcf)** | | | | | | | | |
| EPA RIA Reference Case | **32.9** | **33.0** | **30.8** | **28.7** | **28.0** | **27.3** | **-5.6** | **-17.0** |
| AEO2023 Reference Case | **28.6** | **28.2** | **27.7** | **28.6** | **29.3** | **30.0** | **1.4** | **4.9** |
| **Total Net Exports (tcf)** | | | | | | | | |
| EPA RIA Reference Case | **7.3** | **7.5** | **7.9** | **8.1** | **7.9** | **8.0** | **0.7** | **9.8** |
| AEO2023 Reference Case | **7.6** | **8.6** | **11.5** | **12.1** | **11.9** | **11.6** | **4.1** | **53.7** |
| **Total Demand, Domestic + Net Exports (tcf)** | | | | | | | | |
| EPA RIA Reference Case | **40.2** | **40.5** | **38.7** | **36.8** | **35.9** | **35.3** | **-4.9** | **-12.2** |
| AEO2023 Reference Case | **36.2** | **36.8** | **39.2** | **40.6** | **41.2** | **41.6** | **5.5** | **15.1** |

The tables below, using EPA's own numbers, tell the story in another way. EPA's baseline – inclusive of IRA impacts – claims to reduce power sector emissions by 80% below 2005 levels. On the other hand, if EPA's powerplant rule is finalized and remains effective through 2040, it is anticipated to lower power sector carbon emissions by 81% below 2005 levels. Therefore, the imposition of a carbon capture mandate – examined in greater detail within this report – or a hydrogen co-firing requirement across major portions of the coal and natural gas generation fleet is predicted by EPA to drive **one percent of additional emissions reductions in 2040**. This conclusion begs the following question to EPA: If this rule is so critically important, why is it projected to only result in 1% of additional emissions reductions over the next 17 years?

**Table 4. Power Sector Emissions WITHOUT the Rule***

| Year | Baseline CO2 | Emissions Reductions Occurring in the Baseline | Percent below 2022 | Percent below 2005 |
|---|---|---|---|---|
| 2022 | 1539 | 0 | 0 | 36.0 |
| 2028 | 1,222 | 317 | 20.6 | 49.2 |
| 2030 | 972 | 567 | 36.8 | 59.6 |
| 2035 | 608 | 931 | 60.5 | 74.7 |
| 2040 | 481 | 1,058 | 68.7 | 80.0 |

**Table 5. Power Sector Emissions WITH the Rule***

| Year | Baseline CO2 | Emissions Reductions Occurring in the Baseline | Percent below 2022 | Percent below 2005 |
|---|---|---|---|---|
| 2022 | 1539 | 0 | 0 | 36.0 |
| 2028 | 1212 | 10 | 21.2 | 49.6 |
| 2030 | 882 | 90 | 42.7 | 63.3 |
| 2035 | 572 | 36 | 62.8 | 76.2 |
| 2040 | 458 | 23 | 70.2 | 81.0 |

Why is this important? Because the completely unrealistic baseline assumptions change the entire cost-benefit equation. When agency mandates are met even without the rule, the forecasted compliance costs on utilities and the resultant economic impacts on families and businesses effectively disappear. This is the basis upon which EPA Administrator Michael Regan has claimed that the rule would have "negligible" effects on electricity prices. Even in a world where Congress enacts effective permitting reform, the claim of minimal economic impacts is highly suspicious when EPA modeling assumptions related to IRA, permitting, and energy market dynamics project that the status quo will essentially get us to the same place.

# 2 EPA's Rule Conflicts With the Administration's Own Push Toward Electrification

## Central to the Biden Administration's economywide carbon reduction goals is the electrification of vehicles and more.

Yet, we found that EPA's RIA fails to consider parallel EPA regulations that predict a significant anticipated increase in electricity demand driven by the Administration's own vehicle rules.

With the power sector representing just 25% of economy-wide CO2 emissions, a large portion of the nation's carbon reduction goals depend on the electrification of vehicles, appliances, and industries that are the source of most other emissions. As such, it is not surprising that EPA recently proposed a duo of rules that would require the rapid electrification of the transportation sector – which today accounts for the largest source of carbon emissions across our economy.

One of these rules targets light-duty and medium-duty vehicles—the cars and trucks that many of us drive to work, school, or for a night out on the town. This rule is also accompanied by its own RIA. The Light-Duty Vehicle RIA projects that the electrification of many of our cars and trucks will increase electricity demand by 195 Terawatt Hours (TWh) in 2040.

The EPA's other transportation-focused rulemaking is also packaged with an RIA that projects further electricity demand increases as a result of its efforts to electrify our on-road freight sector. The Heavy-Duty Vehicle Rule RIA predicts that the electrification of portions of our trucking fleet will drive an additional 68 TWh of demand in 2040. So, that's a total of 263 TWh of increased electricity demand from just these two rules. For the purpose of our analysis, we are not considering the multitude of other initiatives at the state and federal levels that will accelerate the electrification of water heaters, furnaces and stoves.

In addition, the RIA for the powerplant rule notes that the model does not track any incremental electricity demand associated with hydrogen production (RIA page 3-13). EPA then reports that "incremental electricity demand from hydrogen production in 2035 is estimated at about 108 TWh, or approximately 2 percent of the total projected nationwide generation."

Therefore, in recent weeks EPA has proposed vehicles rules projected to result in a 263 TWh increase in electricity demand in 2040 and is now proposing hydrogen co-firing requirements that would add another 108 TWh in 2035. Assuming hydrogen production does not decline in 2040, this totals 371 TWh of electricity demand that EPA's modeling completely ignores—an amount equivalent to an 8.7% increase in nationwide electricity use compared to 2022 levels, or 1.5 times the electricity used each year in the State of California.

Underestimating the future demand for electricity biases the cost-benefit calculation presented with the powerplant rule. Simply put, the investments in generation needed to meet existing and new electricity demand while complying with the proposed regulations are certain to be much higher than EPA has stated. Further, the reliability implications of projected retirements will be greater than EPA has considered. **EPA has an obligation to produce a good faith estimate of the rule's most likely real-world impacts, and therefore owes it to stakeholders and the public to model the implications of this significant "missing" increase in electricity demand.**

# 3 EPA's Own Modeling and Real-World Data Undercuts Its Assertions About "Adequately Demonstrated" Technology

**The basis upon which the EPA designs its rule is through the required adoption of promising technologies that may have the potential to reduce carbon emissions at power plants.**

There is no bigger believer in the power of American innovation than the U.S. Chamber, as we see firsthand how our members continue to develop and deploy potentially transformative technologies. The Chamber also was among the loudest voices urging Congress to invest in the research and development of carbon capture and sequestration (CCS) and other technologies that could facilitate the future reduction of power sector emissions.

However, our strong support for innovation does not dismiss the realistic assumptions that must accompany the anticipated scope, pace, and commercialization hurdles of new technology. The centerpiece of the powerplant rule is a requirement that 90% of carbon emissions from certain coal and natural gas plants be captured and sequestered (in the case of gas, plants are also given an option to co-fire with clean hydrogen—another promising technology but one heavily dependent on significant infrastructure additions and modifications).

The legal standard by which EPA must support these emissions reduction techniques is whether the technologies have been "adequately demonstrated." For the EPA to mandate the use of a given emission control technology under the Clean Air Act that finding must be the case.

Given that no power plant in the world is currently capturing 90% of its carbon emissions, meeting the 'adequately demonstrated' standard is a dubious claim. But a deeper dive into the agency's own modeling – and also real-world experiences with CCS – reveals data that undercuts the rule's technology adoption assumptions.

Table 3-14 in EPA's powerplant rule RIA predicts minimal changes in the generation fleet as a result of the adoption of the "best system of emissions reduction" mandated by the rule. The table on the next page summarizes the impact that EPA predicts its new rule will have on the capacity – or potential electric generation ability in gigawatts (GW) – of coal plants without and with CCS, uncontrolled natural gas plants, natural gas plants that capture their carbon, natural gas plants that will instead use hydrogen to reduce their emissions, and non-hydro renewables such as wind and solar.

**Table 6. Power Sector Capacity Factor Changes**

| | Capacity (GW) in Baseline | Capacity (GW) with Rule |
|---|---|---|
| 2030 Coal | 60 | 46 |
| 2030 Coal with CCS | 9 | 12 |
| 2030 Natural Gas | 454 | 460 |
| 2030 Natural Gas with CCS | 7 | 4 |
| 2030 Hydrogen Co-firing | 0 | 0 |
| 2030 Non-hydro Renewables | 403 | 405 |
| | | |
| 2035 Coal | 33 | 0 |
| 2035 Coal with CCS | 11 | 12 |
| 2035 Natural Gas | 460 | 476 |
| 2035 Natural Gas with CCS | 10 | 8 |
| 2035 Hydrogen Co-firing | 0 | 11 |
| 2035 Non-hydro Renewables | 668 | 670 |
| | | |
| 2040 Coal | 28 | 0 |
| 2040 Coal with CCS | 8 | 9 |
| 2040 Natural Gas | 503 | 512 |
| 2040 Natural Gas with CCS | 10 | 8 |
| 2040 Hydrogen Co-firing | 0 | 13 |
| 2040 Non-hydro Renewables | 868 | 867 |

Adapted from Table 3-14 of powerplant rule RIA

EPA's RIA predicts near-negligible adoption of coal-based CCS, with between 1-3 GW of capacity using the technology as a result of its proposed regulation. Meanwhile, the RIA projects that all coal capacity without CCS will shutter by 2035, while the baseline would still have 33 GW of coal capacity on the grid. EPA also predicts that just 13 GW of natural gas capacity will co-fire with hydrogen by 2040. Even more remarkable is the RIA's prediction that fewer (8 GW) natural gas plants will adopt CCS with the proposed rule by 2035 and 2040 than would adopt that technology (10 GW) in the rule's absence.

So what does this table illustrate? It shows that EPA's own projection is that very few plants will adopt the nationwide standard of CCS and hydrogen co-firing, thereby seriously undermining EPA's assertion that these are "adequately demonstrated technologies" set to play a more than trivial role in keeping the lights on.

In fact, EPA didn't even bother to model adoption of CCS or hydrogen by existing natural gas plants, and instead simply assumed a level of CCS adoption based on plant size and projected capacity factor (page 8-2 of the RIA). This suggests a rushed and incomplete analysis or perhaps an effort to avoid further indictment of the IPM model's apparently negative views on the readiness of CCS.

While the EPA asserts that CCS is "adequately demonstrated," their own analysis says power markets won't pursue it even if it's mandated. This conclusion significantly challenges the viability of

what is presented by the EPA as a foundation for rule compliance, and thereby further undermines the validity of the accompanying cost-benefit analysis.

But EPA's regulatory analysis is not the only source of questions about the viability of its CCS mandate. The rule itself confidently asserts that the legal threshold of "adequate demonstration" has been met in practice. Specifically, in its supporting material for the Best System of Emission Reduction (BSER) designations, EPA's rule says there are "several examples of the application of CCS at EGUs." (This section begins on page 56 of the rule.)

Again, the US Chamber supports the expanded use of CCS technology and promotes government policies that facilitate its demonstration and deployment. However, the Boundary Dam plant is the only example cited that, according to EPA, has adequately demonstrated 90% capture and sequestration. Other cited examples are of small capture-focused facilities that did not sequester captured carbon and/or did not capture at a 90% rate. In two other examples EPA cites prospective future CCS projects in support of the past-tense "demonstrated" requirement—a power plant in Scotland in the planning stages that "will have the potential to capture 90 percent of its CO2 emissions" and an 1,800 megawatt combined cycle EGU in West Virginia that "has been announced."

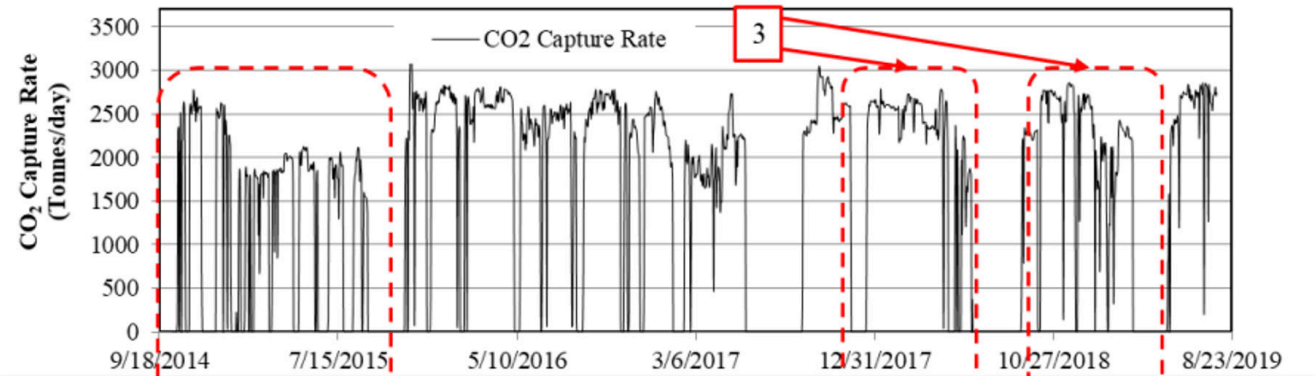
Thus, the only existing CCS project that even plausibly matches EPA's BSER requirements under the proposed rule is the Boundary Dam project in Canada. For now, we'll set aside the serious questions associated with effectively basing a transformative nationwide regulatory mandate on a single, relatively small facility outside of the United States. But perhaps more importantly, a closer look at the Boundary Dam plant reveals a long history of operational underperformance, and EPA's main citation in support of the 90% capture achievement links to a peer-reviewed paper appearing to show that the 90% rate was achieved only in a few brief stints over the plant's operating life, with average capture rates falling much below this peak level. Because EPA's rule mandates an average capture rate and not a peak capture rate, further scrutiny of this information is warranted and may prove pivotal to the rule's legal viability.

To summarize this admittedly complicated issue, in making its case that Boundary Dam has adequately demonstrated a 90% carbon capture system, footnote 64 of EPA's rule links to a peer reviewed paper published by employees of SaskPower (the facility's owner) and the International CCS Knowledge Centre. The paper details the plant's problems and how they've been addressed over the years. Interestingly, it never claims that a 90% capture rate has been achieved by the facility. It points out that 90% was the original design "aspiration" and states that the plant was "available" 90% of the time in 2018 and 2019, but no actual capture rate of 90% is asserted.

Instead, it includes a table showing capture rates during various intervals of the plant's operation. The highest capture rate cited in the table is 2,343 tonnes/day. The paper says a capture volume of 1 million tonnes/year reflects a 90% capture rate. Dividing this by 365, we presume that a daily capture of 2,739 tonnes/day is the threshold for demonstrating 90% capture. Based on that, the 2,343 tonnes/day would equate to a capture rate of 76.9%--impressive, but not 90%. Moreover, a cursory glance at the chart and table on the next page of the plant's operating history shows that the 2,739 tonnes/day threshold appears to have been achieved a handful of times, but only for a very short period.

## So, in effect, EPA's primary citation in support of a 90% CCS mandate as BSER shows Boundary Dam capture rates fluctuating wildly while never achieving 90% for any sustained length of time.

More recent reporting from S&P Global stated that "the seven-year old facility's carbon capture rate in 2021 was less than 37% of the official target of 90%," indicating that the plant's technical challenges may remain unresolved.




| Period | Average Daily Capture Rate (tonnes/day) |
|---|---|
| First 12 months of operations | 1238 |
| November 2015 to August 2017 | 2041 |
| September 2017 to December 2017 | 2342 |
| January 2018 to June 2018 | 2245 |
| September 2018 to March 2019 | 2198 |
| May to November 2019 | 2269 |
| December 2019 to March 2020 | 2056 |
| April to June 2020 | 2264 |
| July to October 2020 | 2343 |

*Graphics from Proceedings of the 15th Greenhouse Gas Control Technologies Conference, "SaskPower's Boundary Dam Unit 3 Carbon Capture Facility - The Journey to Achieving Reliability"; International CCS Knowledge Center and SaskPower Corporation, April 2021. Note: Red markings refer to technical adjustments made during different operational periods, which are further described in the paper.*

If the conclusions we've drawn from this chart and table are accurate—notwithstanding that EPA should publish the detailed operational data from the plant for transparency purposes—then EPA is effectively proposing to take a first-of-a-kind facility's short-term peak performance and mandate that performance be met across our domestic generation fleet continuously and over the long-term. To reiterate, the Chamber fully recognizes and supports the promising long-term future potential of CCS, but a mandate of this kind is analogous to identifying the world's fastest sprinter and then mandating that all marathon runners maintain that sprinter's pace for 26 miles.

A final point of interest: on May 11th, SaskPower CEO Rupen Pandya was quoted in the Wall Street Journal as stating that the SaskPower CCS facility "won't be able to meet" Canada's CCS emissions requirement going forward. While based on a different technical standard than the EPA proposal, in 2030 Canada's CCS rules will mandate a capture rate of 420 tonnes per gigawatt-hour of electricity generation. Based on a conventional lignite coal-fired power plant emissions intensity of 1,100 tonnes/GWh, this would equate to a capture requirement of approximately 62%. If this lower Canadian regulatory threshold cannot be met, then achieving 90% CCS is obviously not yet demonstrated either.

# In Summary

## The issues in this report reflect our deeper dive into select portions of the EPA's powerplant rule.

We're continuing to examine EPA's proposed rule, modeling, and assumptions and may bring forward additional concerns. But the three broad issues discussed herein are existential to the rule itself. Vastly overestimating baseline emissions reductions, materially underestimating future electricity demand, and forcing a specific technology for which EPA's own projections and real-world data do not support widespread adoption completely changes the projected impact of the rule on the economy and the ability to maintain the reliability of the nation's electricity grid. These issues also make the rule vulnerable to legal challenges. The climate challenge requires transparency from both government and industry and for all stakeholders to work together in good faith. EPA should work collaboratively with stakeholders to address these shortcomings and develop more realistic modeling scenarios that better reflect the effectiveness and impacts of its rule.

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