Carroll Electric Cooperative Corporation

August 2, 2023

Administrator Michael S. Regan
Attn: Docket ID EPA-HQ-OAR-2023-0072
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Administrator Regan:

Thank you for the opportunity to comment. As President/CEO of Carroll Electric Cooperative Corp. (CECC), and on behalf of its 91,000 plus member-consumers, I am writing to oppose the Environmental Protection Agency's (EPA) proposed regulations on new and existing power plants.

In short, EPA's proposal will negatively impact reliable and affordable electricity by requiring the commercially unavailable technologies of carbon capture[1] and natural gas-hydrogen[2] blending. This will force the early closure of even more **existing dispatchable**[3] power plants and limit the availability and the diversity of **new dispatchable** power plant alternatives, all while America aims to electrify even more of the economy. Respectfully, CCS technology is NOT sufficiently mature or available to make it a viable alternative. As for the use of clean hydrogen, North America's Bulk Electric System cannot run or depend on a "concept" unless that concept is proven.

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[1] Lazard's, a leading industry analyst, released its Levelized Cost of Energy (LCOE) Report in April 2023. It states:

> *"The deployment of any CCS technology depends on the availability of either offtake or permanent CO_2 storage reservoirs (placing geographic limitations on deployment) and the validation of the security of permanent storage (in avoiding CO_2 leakage).*
>
> *CCS also requires compression, transportation, and either secure permanent underground storage of carbon dioxide or alternate end-use.* ***To date, there are very few completed power generation CCS project examples****."* [emphasis added]

According to the United States Department of Energy (DOE), (https://www.netl.doe.gov/carbon-management/carbon-storage/faqs/carbon-storage-faqs), the Regional Carbon Sequestration Partnership (RCSP) Initiative, through the DOE, Office of Fossil Energy and Carbon Management (FECM), and National Energy Technology Laboratory (NETL), and various partnerships, have conducted 19 small-scale field projects which are *"building on* ***research*** *and are* ***developing the framework needed to validate geologic carbon storage technologies****."* [emphasis added] There are only 7 large-scale CO2 tests currently being conducted or recently finished in the United States.

The DOE also seems to agree with Lazard's in that CCS technology is limited by locational constraints:

> *"****Myth****: Any location that has an injection well can be used to inject and store carbon.*
>
> ***Reality****: A specific set of characteristics are needed to make a setting appropriate to act as a storage complex. These characteristics are determined through a rigorous characterization process that includes assessing potential storage risks and meeting the regulations under the U.S. Environmental Protection Agency's (EPA) permitting process that grants permission to inject CO2 for carbon storage purposes."*

[2] Lazard's report also states: *"Combustion turbines for 100% hydrogen are not commercially available today. Power generators are* ***exploring blending*** *with natural gas as a way to reduce carbon intensity. Several* ***pilots*** *and* ***studies*** *are being conducted and* ***planned*** *in the U.S. today.* ***Most projects include up to 5% hydrogen blend by volume****, but some testing facilities have used blends of over 40% hydrogen by volume."* [emphasis added]

According to Lazard's research, the EPA's proposal is well beyond current technological capabilities.

DOE's, Energy Information Administration (EIA) states: *"The two most common methods for producing hydrogen are steam-methane reforming and electrolysis (splitting water with electricity).* ***Researchers are exploring other hydrogen production methods or pathways****."* [emphasis added] (https://www.eia.gov/energyexplained/hydrogen/production-of-hydrogen.php) Last updated: June 23, 2023.

Massive deployment of "clean hydrogen" will require **more electricity** (*electrolysis*) and other infrastructure that does not yet exist and **more innovation** in the *"other hydrogen production methods."* Exhibit A includes EIA's diagram of a "**Conceptual H2@scale (hydrogen at scale) energy system**".

[3] Dispatchable power plants are those resources that can adapt how much power they produce to what is needed in real-time. They can be switched on and off or be ramped up and down to meet fluctuating power demand.

In 2021, 2022, and again in 2023, CECC directly surveyed **all its member-consumers** to determine whether they support the following goals:

Goal 1. Protect **dispatchable** power sources. A diverse mix of dispatchable resources that includes nuclear, coal, and natural gas will help minimize the various risks associated with becoming completely dependent on natural gas for dispatchable power generation.

Goal 2. End unfair subsidies to **non-dispatchable** forms of power generation.

Goal 3. Advocate for consumer-focused wholesale markets that place value on continuous reliability.

Of 13,632 members who responded, **92% supported all three goals**. As a not-for-profit electric cooperative, CECC is operated by and for its entire membership. These survey results provide a clear mandate and compelling obligation to speak for the entire organization.

RELIABILITY IMPACTS:

Please protect **dispatchable** power generation resources for CECC's member-consumers and other consumers across the country. Recent reports about the Bulk Power System serve as a dire warning.

- Before the United States Senate Energy and Natural Resources Committee on May 4, Federal Energy Regulatory Commission (FERC) Commissioner Mark Christie stated, **"The core of the problem is actually very simple. We are retiring dispatchable generating resources at a pace and in an amount that is far too fast and far too great and is threatening our ability to keep the lights on."**
- According to the North American Electric Reliability Corporation (NERC), the **"disorderly"** retirement of existing **dispatchable** generating resources, and insufficient replacement of that power capacity, is directly impacting reliability and increasing the risk of blackouts. **NERC's 2023 Summer Reliability Assessment** demonstrates that two-thirds of North America is at Risk *now*.

Note that the above-mentioned warnings were made *prior* to EPA's proposal. The present problem will only be magnified if EPA's proposal takes effect.

AFFORDABILITY IMPACTS:

Regulated utilities like CECC and its consumers are captive to each Regional Transmission Organization's (RTO's) day-ahead and real-time wholesale "markets," which were developed under FERC's oversight. EPA's proposal accelerates the premature retirement of **dispatchable** power plants. Paired with the existing RTO "market" construct, this harms consumers at the end of the line by expanding the layers of the retail cost structure as follows:

1. *Utility-Owned Power-Generation*: Most plants at risk of premature retirement were constructed in response to and after the U.S. Energy Policy and Conservation Act of 1978 and still have unrecovered **capital costs which are embedded into future electric rates**.
2. *Natural Gas Providers and Independent Power Producers*: Power generation shortages allow unregulated Natural Gas Providers and Independent Power Producers to effectively set and harvest skyrocketing "market" prices without bearing any responsibility for electric reliability. The EPA's proposal only **increases the frequency of time intervals that "constrained RTO markets" operate *against* the financial interests of captive utility consumers**.
3. *Federal Subsidies*: With most of the new power generation coming from subsidized intermittent resources, taxpayers are increasingly contributing to the power produced **when they pay their income taxes, in addition to what they directly pay in energy costs.**
4. *Intermittent vs. Dispatchable*: The physics of power production requires an instantaneously available supply to meet each unit of demand. Accordingly, the increased reliance on intermittent resources has caused RTOs to require

more “reserve margin” of available generation and simultaneously provide less capacity accreditation of intermittent resources. These two factors will result in the **further duplication of power plant capital costs**.

5. *Massive demand for new technologies*: In addition to the layers previously noted, a government mandate for utilities to pursue carbon capture and hydrogen technologies, **which are not yet commercially available,** coupled with **already constrained material supply chains** and **higher interest rates**, is a recipe for additional financial turmoil. Present circumstances and basic economic principles indicate that the United States should not undertake such a rapid transformation.

The financial exploitation of this environment is already bad news for consumers, especially low-income consumers who generally pay a larger percentage of their income toward home energy costs. “Markets” should not be made worse by EPA’s proposal, which would place the **dispatchable** supply of electricity into an indefinite shortage.

We join electric cooperatives across the country in standing firmly against EPA's proposal, as it will undermine decades of work by utilities and investments by ratepayers to reliably, and affordably, keep the lights on across the United States. North America’s Bulk Power System is already operating under a fluctuating danger of life-threatening blackouts in its current state; this proposal will only increase the probability and likelihood of those events.

On behalf of CECC and its member-consumers, EPA’s proposed rules for new and existing power plants will produce considerably more harm than potential benefits. Please reconsider these proposed rules.

Respectfully,

Rob Boaz,
President/CEO

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Exhibit A – "Conceptual" Hydrogen at Scale
Source: U.S. Department of Energy

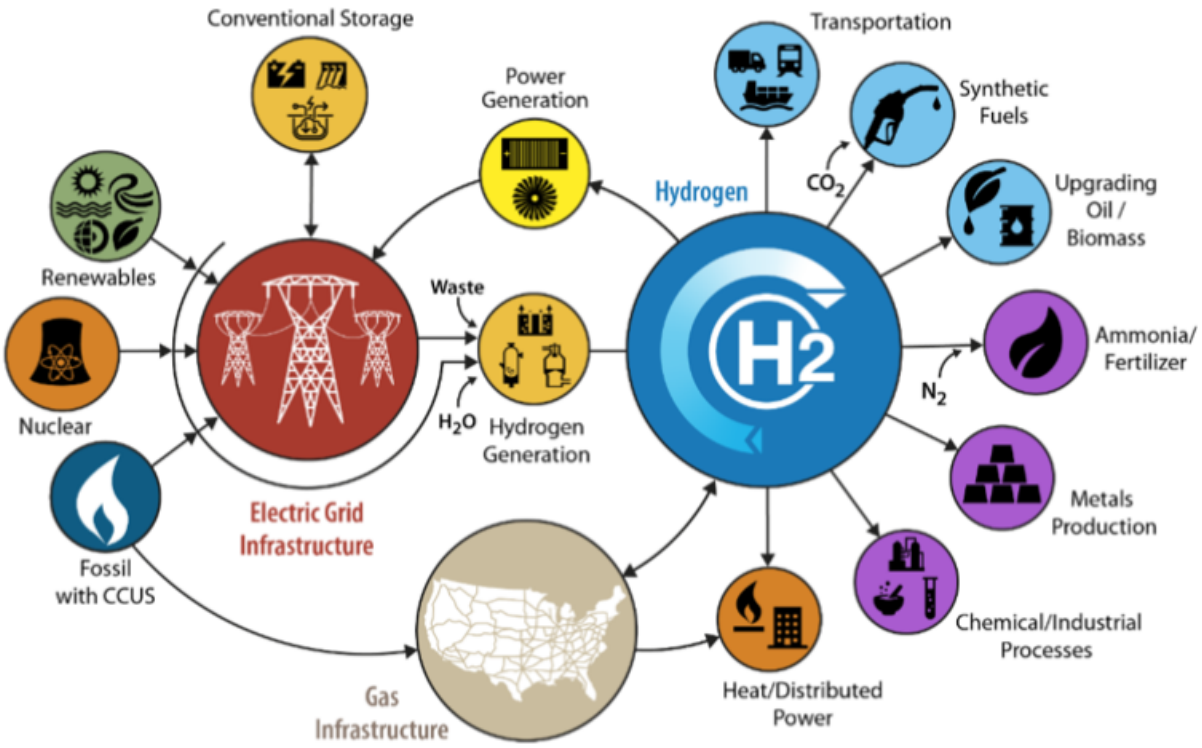
eia + Sources & Uses + Topics + Geography

BASICS

Hydrogen production

To produce hydrogen, it must be separated from the other elements in the molecules where it occurs. Hydrogen can be produced from many different sources in different ways to use as a fuel. The two most common methods for producing hydrogen are *steam-methane reforming* and *electrolysis* (splitting water with electricity). Researchers are exploring other hydrogen production methods, or *pathways*.

Conceptual H2@scale (hydrogen at scale) energy system



Last updated: June 23, 2023.

See: *https://www.eia.gov/energyexplained/hydrogen/production-of-hydrogen.php*.