



## **CNX Resources Corp. Comments on U.S. Department of Energy Clean Hydrogen Production Standard Draft Guidance**

CNX appreciates the opportunity to comment on the Department of Energy's Clean Hydrogen Production Standard (CHPS) Draft Guidance. The development of this standard will lead to responsible and sustainable development of hydrogen production and utilization across the country, leading to increased energy security, emissions reductions, and economic opportunity particularly in communities across Appalachia which continue to experience challenging socio-economic impacts related to the energy transition.

CNX possesses the development expertise and existing resources to produce the lowest carbon intensive, sustainably derived methane available to serve as feedstock for hydrogen production facilities.

CNX self performs its midstream operations and operates ~4,440 producing wells, ~2,600 miles of gas pipeline, and ~1,400 miles of water pipeline, servicing ~4,000 wells, all in the Appalachian region. The thousands of miles of rights of way associated with the company's legacy footprint provides the foundation for a hydrogen/carbon transportation network. CNX is at the forefront of efforts in the Appalachian region to create the resources needed to facilitate clean hydrogen production and carbon capture and storage.

We would like to address a specific item related to the Department's System Boundary for Lifecycle Target:

Under the extraction of feedstock tab, which includes fuel combustion, fugitive emissions, feedstock treatment, and net GHG emissions associated with production of biomass feedstocks, the Department should specify, define, or include additional sources of GHG emissions that are not explicitly mentioned. Specifically, as it relates to net GHG emissions, other sources of methane which are being emitted as a byproduct should be incorporated, not only those from biomass or bio-derived feedstocks.

This methane, which is recovered incrementally from standard practice and baseline assumptions has an ultra-low, even negative carbon intensity, comparable to swine or dairy farm RNG, based on studies verified by independent specialists and it should be included in the lifecycle assessment. If it is not captured and utilized – in this scenario to produce hydrogen – the methane

is likely to be emitted, contributing a greenhouse gas roughly 28 times more potent than CO<sub>2</sub> to the atmosphere<sup>ii</sup>.

Additionally, by utilizing these sources of waste methane as a feedstock, we can offset the use of higher carbon intensive natural gas, which is currently the prominent feedstock, making up nearly 95% of current production<sup>iii</sup>. Utilizing mature, proven, and scalable technology and processes within the existing transportation infrastructure will enable a far lower full lifecycle carbon intensity product that can be deployed faster than other options being discussed while also meeting, or exceeding lifecycle emissions goals. In addition to being a solution to meet the standard for blue hydrogen applications, the use of low carbon intensity gas sources can also be converted to electricity to power electrolyzers to create green hydrogen through various applications.

We urge the Department to utilize lifecycle assessment tools such as Argonne National Laboratory's GREET model or other applicable independent or third-party verifications to validate the carbon intensity estimates of gases for hydrogen production. The GREET model should be encouraged to review and expand their modeling to include other sources of waste emissions as potential feedstock for hydrogen.

As the Department embarks on the solicitation and funding process for a number of Hydrogen Hub projects, we urge the Department to recognize and highlight the unique attributes of each region and their ability to meet the proposed Clean Hydrogen Production Standard. Across Appalachia, a multitude of opportunities exist to expand and invest in our current asset base, create jobs and economic opportunity, and leverage legacy liabilities to build a new hydrogen economy in local communities while delivering global environmental solutions. Appropriate recognition of the environmental benefits of all captured methane sources and their related low carbon intensity characteristics should be leveraged as a socio-economic catalyst in the region. Utilization of native methane sources for use within Appalachia as a hydrogen feedstock can provide a local stimulus akin to renewable natural gas's environmental recognition in the EPA's Renewable Fuel Standard and California's Low Carbon Fuel Standard for transportation purposes. A recent study found that one state's investment in renewable natural gas could lead to the creation of ~130,000 jobs and up to \$14 billion of added economic value<sup>iv</sup>. We urge the Department to recognize and include other sources of methane, and their low carbon intensity attributes, as a feedstock for hydrogen production to address a critical environmental issue while also seizing the vast economic opportunity.

### **About CNX**

CNX Resources Corporation (NYSE: CNX) is unique. We are a premier, ultra-low carbon intensive natural gas development, production, midstream, and technology company centered in Appalachia, one of the most energy abundant regions in the world. With the benefit of a 158-year regional legacy, substantial asset base, leading core operational competencies, technology development and innovation, and astute capital allocation methodologies, we responsibly develop our resources and deploy free cash flow to create long-term per share value for our shareholders, employees, and the communities where we operate. As of December 31, 2021, CNX had 9.63 trillion cubic feet equivalent of proved natural gas reserves. The company is a

member of the Standard & Poor's Midcap 400 Index. Additional information is available at [www.cnx.com](http://www.cnx.com).

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<sup>ii</sup> Environmental Protection Agency, 2022 <https://www.epa.gov/ghgemissions/understanding-global-warming-potentials>

<sup>iii</sup> Department of Energy, 2022 <https://www.energy.gov/eere/fuelcells/hydrogen-production-natural-gas-reforming>

<sup>iv</sup> California Natural Gas Vehicle Coalition, 2017 <https://cngvc.org/study-rng-can-create-130000-jobs-14-billion-economic-benefits-california/>