Communication from Public

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Comments for Public Posting:	Leap LA Coalition and Food & Water Watch Comments RE: Hydrogen Hub Proposal

May 16, 2022

Los Angeles City Council
200 North Spring Street
Los Angeles, CA 90021
(213) 473-7013

Re: Hydrogen Hub proposal – Comments from the Leap LA Coalition and Food & Water Watch

Sent via email

To the members of the Los Angeles City Council,

Our coalition represents thousands of community members throughout the City of Los Angeles and the state of California who are committed to ensuring that California's energy transition centers equity and community consent. We believe that California's clean energy future must ensure community access to affordable energy and local jobs while addressing the disproportionate pollution and cost burdens our communities face under the current energy system.

We write to express concerns regarding potential inequities and negative environmental impacts underlying the City's motion to submit a proposal to the U.S. Department of Energy to consider the Greater Los Angeles Metropolitan area as a regional "Green Hydrogen Hub."[1] While certain studies, including the LA100 plan, indicate that "green hydrogen" may support greenhouse gas ("GHG") emissions reductions in hard-to-electrify sectors, numerous questions remain regarding the true environmental impact of "green hydrogen," the potential consequences of investing in "green hydrogen," and an unclear regulatory framework to address these concerns. Without implementing meaningful measures to address this high level of uncertainty, a "green hydrogen hub" in Los Angeles has the potential to exacerbate the high pollution burdens and pattern of extraction faced by the most overburdened communities in the state. For this reason, we urge

[1] Council File 22-0255 (Mar. 4, 2022), https://clkrep.lacity.org/onlinedocs/2022/22-0255_mot_03-04-22.pdf.

that, *prior* to submitting a proposal before the U.S. Department of Energy, the City commits to scheduling a detailed and iterative community engagement and environmental review process that results in a full assessment of the potentially harmful environmental justice impacts that would result from any future "green hydrogen hub" development.

This assessment should, at minimum, address all the following concerns:

I. A truly "green hydrogen" proposal should be narrowly defined and exclude hydrogen blending and combustion

First, as indicated in the first moving clause of the motion, this project is limited to producing "green hydrogen" from electrolysis of excess renewable energy. This definition should be limited only to include hydrogen produced through electrolysis of excess renewable energy that qualifies under the Renewable Portfolio Standard, does not increase pollution burdens via production or end use, and retires any Renewable Energy Credits associated with the power source to ensure that avoided emissions are not double-counted. Importantly, this definition of clean renewable energy to produce "green hydrogen" excludes hydrogen produced from any methods reforming or refining fossil fuels, biogas, biomass, biomethane, or purposely grown feedstocks. These fuel sources may increase GHG emissions associated with the project and impose additional environmental injustices on our communities.[2]

Second, the City should make a clear commitment that this project will not result in the development of blended hydrogen-methane products or uses. Existing research shows that blended hydrogen with natural gas for power generation or use in buildings may increase GHG emissions "while thwart[ing] more viable decarbonization pathways while increasing consumer costs, exacerbating air pollution, and imposing safety risks."[3]

Third, the City must commit that this project will not result in combustion of hydrogen or hydrogen-methane blends. Combustion of hydrogen-methane blends have been found to emit up to six times the amount of nitrogen oxide (NOx) than the burning of methane, and is associated with significant amounts of additional criteria pollutants,[4] while burning pure hydrogen may be associated with even higher levels of NOx emissions. For these reasons, it

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[2] For example, the California Public Utilities Commission has found that biogas facilities emit higher levels of air pollutants than other electricity-generating resources, and certain sources of biomethane disproportionately burden disadvantaged communities by contaminating air and water resources. CPUC Energy Division, Updated IRP Criteria Pollutant Analysis, at slides 6-7 (Feb. 20, 2020), available at ftp.cpuc.ca.gov/energy/modeling/CriteriaPollutantAnalysisUpdate_20200221.pdf. *See* California Public Utilities Commission Decision 20-12-022, at 37 (Cal. P.U.C. Dec. 22, 2020).

[3] Sara Baldwin et al., ASSESSING THE VIABILITY OF HYDROGEN PROPOSALS: CONSIDERATIONS FOR STATE UTILITY REGULATORS AND POLICYMAKERS, at pp. 2, 7-11, Energy Innovation (March 2022), https://energyinnovation.org/wp-content/uploads/2022/04/Assessing-the-Viability-of-Hydrogen-Proposals.pdf.

[4] Mehmet Salih Cellek & Ali Pınarbaşı. Investigations on Performance and Emission Characteristics of an Industrial Low Swirl Burner While Burning Natural Gas, Methane, Hydrogen-Enriched Natural Gas and Hydrogen as Fuels. International Journal of Hydrogen Energy 43, Issue no. 2 1194-1207 (January 11, 2018), available at https://doi.org/10.1016/j.ijhydene.2017.05.107.

would be inappropriate for any "green hydrogen hub" proposal to include blending or combustion of hydrogen resources.

II. Reporting other environmental impacts

Even if the project is limited to producing truly "green hydrogen" from electrolysis of excess renewable energy, as defined in Section I above, numerous additional environmental impacts must be carefully considered before the City submits an application to be a "green hydrogen hub."

The fourth moving clause of the motion directs the Los Angeles Department of Water and Power (hereinafter "LADWP" or "the utility"), in collaboration with others, to report to the City Council "with recommendations on the usage of advanced treated water . . . to supply Ultra Purified Water High Quality Water" and directs the Bureau of Sanitation, in collaboration with others, to "report back on NOx and other emission monitoring" for projects resulting from a successful federal application.[5] This reporting must carefully consider the range of environmental justice impacts listed below in order to determine whether the project is feasible and desirable for environmental justice communities, rather than being designed to justify the City's proposal. For example, methane leakage is critically underestimated in government reporting,[6] and as a more corrosive and volatile element, leakage rates of hydrogen would be considerably greater. The Bureau of Sanitation's report back on NOx and other emission monitoring should therefore consider a range of estimates in determining the potential emissions reductions of the project, as well as the costs of accurately monitoring and repairing leaks.

This environmental report should consider:

A. Air and water quality impacts:

Commitments to improve local air and water quality–particularly within frontline communities that bear the disproportionate burden of pollution throughout the city–cannot be sacrificed in the name of carbon emission reductions. Rather, any plans to develop a "hydrogen hub" must be made with careful consideration of the potentially adverse health and environmental impacts that such a project risks creating. To proceed otherwise creates an unnecessary trade-off at the expense of low-income communities and communities of color, which continue to bear the overwhelming share of harmful impacts caused by industrial pollution. Unless the City commits itself to continue making much-needed improvements in local air and water quality–and ensures that any future hydrogen development does not risk backsliding in these key areas of public health–it is missing a crucial opportunity to advance environmental justice in tandem with its efforts to reduce carbon emissions.

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[5] Council File 22-0255, p. 3.

[6] The 2022 update to the International Energy Agency's Global Methane Tracker found that United States methane emissions from the energy sector in 2021 were 58% greater than reported for the United Nations Framework Convention on Climate Change. *See* International Energy Agency Methane Tracker Data Explorer (2022), United States, https://www.iea.org/articles/methane-tracker-data-explorer.

Namely, allowing an increase in local NOx emissions is not an acceptable tradeoff to achieve global carbon reductions. Instead, any project that purports to make climate gains must do so without further worsening air quality and the devastating health burdens it creates within environmental justice communities.[7] Furthermore, any future "hydrogen hub" development must contain strict safeguards to ensure that the hydrogen production process–including any desalination or other water treatment process–does not lead to additional waste streams. Environmental justice communities already house a disproportionate share of the city's toxic and hazardous waste,[8] meaning that City leaders must take decisive action to ensure this project does not worsen those existing disparities.

B. Water scarcity:

Water is an increasingly scarce resource in Los Angeles due to Southern California's naturally arid composition, a fact only worsened by a history of severe resource mismanagement and unprecedentedly severe drought conditions.[9] Relying upon large quantities of water to produce energy for one of the nation's largest cities appears to be, at best, a risky strategy. The worsening impacts of climate change and the increasingly scarce water supply in Los Angeles, and California more broadly, have not fully materialized and are poised to deteriorate further in the years ahead. Even under current conditions, Los Angeles depends heavily for its drinking water supply on the snowpack of the Sierra Nevada–an increasingly unreliable source–because local sources are unable to keep up with demand. City leaders must put forward a clear plan detailing how adequate water supplies will be acquired to support a future "hydrogen hub" without worsening the existing challenges to guarantee equitable access to clean, affordable drinking water for all communities.

Because green hydrogen production relies on freshwater as a feedstock,[10] a Los Angeles area "hydrogen hub" would require either making dangerous incursions into our vulnerable drinking water supply, or alternatively, costly investments to build desalination plants that would process seawater for use in hydrogen production. Desalination is an energy- and resource-intensive process; scientific studies have found that for every 1 kilogram of "green hydrogen" produced, 15 to 20 kilograms of water are required.[11] The development of desalination plants raises myriad

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[7] Darryl Fears, *Redlining Means 45 Million Americans Are Breathing Dirtier Air, 50 Years After It Ended* , Washington Post (March 9, 2022), https://www.washingtonpost.com/climate-environment/2022/03/09/redlining-pollution-environmental-justice/.

[8] Jonah Valdez, *A Long-Forgotten Toxic Dump Site is Raising New Worries for This Los Angeles Neighborhood*, Los Angeles Times (April 30, 2022), https://www.latimes.com/environment/story/2022-04-30/an-old-toxic-dump-brings-new-worries-for-lincoln-heights.

[9] Nathan Rott, *Study Finds Western Megadrought Is The Worst in 1,200 Years*, NPR (February 14, 2022), https://www.npr.org/2022/02/14/1080302434/study-finds-western-megadrought-is-the-worst-in-1-200-years.

[10] Sasan Saadat and Sara Gersen, *Reclaiming Hydrogen for a Renewable Future: Distinguishing Fossil Fuel Industry Spin from Zero-Emission Solutions*, Earthjustice (August 2021), at 20, available https://earthjustice.org/sites/default/files/files/hydrogen_earthjustice_2021.pdf.

[11] https://energy-transitions.org/wp-content/uploads/2021/04/ETC-Global-Hydrogen-Report.pdf at 61.

financial and environmental concerns,[12] as well as potentially inequitable impacts for environmental justice communities that would likely house such developments.

C. Leakage:

A recent study found that, without adequate safeguards in place, even small leaks of hydrogen could produce more harmful emissions than current fossil fuels do. A greenhouse gas itself, the planet-warming effects of hydrogen are severely under-studied, and it is believed to be up to 20 times more potent than CO2.[13] The warming effects of "blue" hydrogen – which relies on a mix of hydrogen and natural gas – are most severe. Yet even "green" hydrogen – produced via electrolysis – risks *worsening* short-term atmospheric warming because the potent effect of even moderate leaks would be so harmful.

Additionally, the nation's existing network of gas pipelines–including those throughout Southern California–is not properly suited to support hydrogen transport. Namely, hydrogen risks causing "embrittlement" of pipes in fossil gas pipelines, and existing gas lines do not have adequate systems in place to detect dangerous hydrogen leaks.[14] This means that to be carried out safely and effectively, hydrogen production would require staggering investments to build an entirely new network of dedicated hydrogen transport pipelines. We have serious concerns about the health and environmental risks that such infrastructure would impose upon the communities where they would likely be located – and urge you to instead direct these resources to existing efforts to combat environmental racism and alleviate systemic health disparities.

D. Racially disparate land use impacts:

Black, Indigenous, and People of Color (BIPOC) communities, and especially low-income BIPOC communities, throughout Los Angeles are overwhelmingly burdened by the harmful effects of wide-ranging industrial activity, including oil extraction and refining operations, hazardous waste and processing plants, and dangerous emissions flowing from heavily concentrated goods movement operations. These frontline environmental justice communities must be in control of land use decisions within their own neighborhoods, where any future hydrogen infrastructure would more than likely be located.

Even if this infrastructure is built with strict pollution control measures in place designed to protect public health, further industrial development in these areas will only deepen existing disparities affecting impacted communities. For instance, low-income communities of color

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[12] Ian James, *Decision Looms for Controversial Poseidon Desalination Plant*, Los Angeles Times (April 26, 2022), https://www.latimes.com/socal/daily-pilot/news/story/2022-04-26/decision-looms-for-poseidon-desalination-plant.

[13] Steven Hamburg and Ilissa Ocko, *For Hydrogen To Be a Climate Solution, Leaks Must Be Tackled,* Environmental Defense Fund (March 7, 2022), https://www.edf.org/blog/2022/03/07/hydrogen-climate-solution-leaks-must-be-tackled.

[14] Saadat and Gersen, *Reclaiming Hydrogen*, at 19.

throughout Los Angeles already suffer from dangerous extreme heat disparities,[15] the effects of which will only worsen without decisive action from city leaders to change the urban landscape. Future development of the sprawling infrastructure that would be required to support an urban "hydrogen hub" will mean even less space is available in these communities for public parks, tree canopy, and other community spaces that are desperately needed to reduce the racially disparate impacts of climate change.

III. Guarding against potential negative consequences

If any green hydrogen proposal is to move forward, it is critical to make sure that investments in this technology are not contributing to negative impacts in other areas. In order to make sure that funding is being directed towards the most effective solutions, serious consideration must be put into understanding the costs, both for LADWP and ratepayers, the scale and intention of the project, and any potential impacts on the necessary phase out of oil and gas use across all sectors. As energy efficiency, renewable energy and battery technologies are rapidly continuing to become cheaper and more reliable, it is important to constantly assess any alternative pathways to achieving 100% clean energy in the most efficient manner.

A. Costs:

Despite the fact that the federal government is intending to finance a large share of this project, it is important to understand the financial risks and opportunity costs associated with pursuing a "green hydrogen hub" in Los Angeles, both for the utility as well as its customers. Any proposal should include a detailed budget for the project, and include a detailed analysis of how this project will affect LADWP ratepayers. Low-income ratepayers throughout Southern California are already struggling to cover the cost of basic living expenses, and as housing, food, and energy costs continue to rise rapidly, utility investments should be made with tremendous caution in order to ensure that they will not raise, and instead will ideally lower, costs for customers. Considering that the hydrogen hub would only be used 1-5% of the time, it doesn't seem to make financial sense to invest multiple billions of dollars into an unproven and risky technology. The limited funding that is available to advance environmental justice and address climate change should be directed toward the most efficient methods of lowering climate and other pollutants, with an emphasis on investing in the most environmentally burdened communities. If there are limited uses for green hydrogen, projects should be scaled to meet demand, rather than to create additional supply for other sectors that might not be ideal uses for green hydrogen.

B. Oil & Gas Prolongation:

We are also concerned about the potential for a "green hydrogen hub" to support existing oil and gas infrastructure and provide a lifeline for polluting industries to continue their operations rather

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[15] Tony Barboza and Ruben Vives, *Poor Neighborhoods Bear the Brunt of Extreme Heat*, Los Angeles Times (October 28, 2021), https://www.latimes.com/california/story/2021-10-28/extreme-heat-built-environment-equity.

than being phased out. One of the stated goals of the federal government's program is to lower the price of green hydrogen in order to compete with other forms of energy, which could divert resources for other, cleaner technologies that might benefit from those same subsidies.[16] Additionally, oil and gas companies are supporting hydrogen projects and we are concerned that this support is based upon their belief that they will be able to blend hydrogen into their current operations or transition their combustion plants from methane to hydrogen, thereby continuing the legacy of harm in the communities where those operations are located today. We oppose state and federal subsidies being given directly to the oil and gas industry, as they have historically been irresponsible stewards of taxpayer subsidies, and believe that funding should instead be used to support a just transition away from fossil fuel use, with the majority of those resources being directed to community-driven solutions in the areas with the highest pollution burdens.

IV. Ensuring a community-led process

When considering such a massive infrastructure project, it is important to have continuous, transparent, and honest dialogue with the impacted communities, who must be provided accurate and up-to-date information about the proposal, be given adequate time to process and express their concerns, and be meaningfully included throughout the decision-making process from inception to implementation. Despite the existing LA100 Equity Strategies effort to ensure an equitable clean energy transition, Steering Committee members have yet to be informed about and provide input on this proposal. Any "green hydrogen hub" proposal should clearly lay out the community engagement process, and project managers should maintain regular contact with community leaders and ensure that their concerns are addressed throughout the entire process.

Furthermore, while we recognize that the motion directs collaboration with the Climate Emergency Mobilization Office (CEMO), we want to emphasize that this office is intended to facilitate deep community engagement and community co-governance with the goal of advancing community-led solutions to the climate crisis. We caution against co-opting the CEMO process to push top-down solutions that reinforce business-as-usual community engagement and policy-making practices.

Meaningful community participation must ensure appropriate efforts are undertaken to provide equitable access for all communities. This includes, at a minimum, providing opportunities for in-person and virtual participation, including during evenings and weekends. Many low-income residents must work long daily hours to make ends meet and do not have the ability to attend daytime meetings held on weekdays. Moreover, language access must be guaranteed, including by ensuring provision of live language interpretation and/or closed captioning, for

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[16] Dept. of Energy. *DOE Establishes Bipartisan Infrastructure Law's $9.5 Billion Clean Hydrogen Initiatives* (February 15, 2022), https://www.energy.gov/articles/doe-establishes-bipartisan-infrastructure-laws-95-billion-clean-hydrogen-initiatives.

individuals with limited English proficiency and for people with disabilities, at all in-person and virtual community meetings. Lastly, in-person meetings must be offered in the communities where any development of a future “hydrogen hub” is likely to occur, in order to ensure maximum possible participation and reduce barriers for access among impacted residents.

We appreciate your efforts to ensure an equitable and transparent process, and look forward to continued discussions about the role, if any, that “green hydrogen” will play in an equitable and sustainable Los Angeles.

Sincerely,

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