

Equity Principles for Hydrogen

Environmental Justice Position on Green Hydrogen in California

October 10, 2023



COMMUNITIES
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**CENTER ON RACE,
POVERTY & THE
ENVIRONMENT**



PSR LA
Physicians for Social Responsibility Los Angeles

PREAMBLE

We represent heavily polluted communities throughout the State of California. Our communities border oil refineries, gas-fired power plants, industrial farming operations, fossil fuel extraction facilities, waste processing centers, ports, transportation corridors and other polluting operations. These cumulative sources of pollution cause a wide range of adverse health outcomes in working class communities of color. Our communities share a common fence with facilities and operations that emit toxins, foul smells, and noise and cause nuisance impacting people's quality of life at all hours of the day and night.

The State of California intends to expand the use of hydrogen as a fuel, and to this end, we offer these guiding principles, which are essential to respect and protect our communities. The following principles represent our collective values and positions to support communities as hydrogen energy is utilized across the state.

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These principles were developed in ten workshops and learning sessions for environmental justice partners across California between March and September of 2023. The learning sessions examined the current science, including risks, benefits, and unknowns, and shed light on each stage of the hydrogen cycle, including production, delivery, storage, and use. The workshops allowed our organizations to discuss different perspectives, build consensus, and reflect on how hydrogen may impact our communities.

We adamantly oppose all non-green hydrogen proposals and projects. We insist that new projects protect communities first and do not perpetuate the injustices that polluting infrastructures impose on fence-line communities today. Each stage of the hydrogen life cycle—production, delivery, storage, and end use—can present unique risks and harms to environmental justice communities and to all Californians. Discussions about building new green hydrogen infrastructure must involve the community, and its members should be meaningfully engaged. Siting green hydrogen infrastructure should also take into account the cumulative impacts of environmental justice communities and the risks associated with hydrogen.

PRODUCTION

- 1. We oppose all hydrogen production that is not green hydrogen production, and we agree that green hydrogen is produced by means of electrolysis using surplus water and additional renewable electricity.**
 - a. The hydrogen is made using electrolysis of water
 - i. Where water used as feedstock is surplus and not diverted from sources which serve jurisdictions that are struggling or failing to meet clean drinking water needs.
 - b. Electrolysis is powered only by electricity produced from new dedicated wind or solar power, and
 - i. The facility generating the electricity used for the production of green hydrogen does not use tradable renewable energy credits.
 - c. If any electrolysis facility is connected to the California electricity grid, it must honor the hourly use concept:
 - i. The new renewable generation resource provided for in subsection b(i) above has a first point of interconnection to the California balancing authority in which the electrolytic hydrogen production facility is sited, and

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- ii. The electrolytic hydrogen production facility must use the new renewable electricity in the same hour that the electricity is delivered to the grid.
 - d. Green hydrogen is not defined according to pounds of CO2 equivalent.
 - e. We oppose carbon capture in hydrogen production operations.
 - f. The above conditions must be the starting point for informed community consent to hydrogen production projects. Though the specifics of a green hydrogen production project may be undefined at the outset of community engagement, the public should have faith that all above conditions are met under any project permutation.
- 2. We agree that green hydrogen production projects should consider the impacts of electrolysis and be tightly regulated.**
- a. Projects must include EJ protections related to water use for production/desalination.
 - b. Projects must not negatively impact California's already stretched water supply.
 - c. Projects must not use potable water when drinking water needs are not met.
- 3. We agree that hydrogen production projects must center Tribal consultation and consent for projects considered on or near ceded and unceded Tribal territories.**
- a. State agencies must mandate any recipient of Federal or State level funding to undergo training on Tribal history, cultural sensitivity, and the significance of the Tribal consultation process for all recipient staff expecting to participate in any hydrogen or related project. This requires ongoing education to keep staff updated on evolving Tribal engagement practices. Educational material should be designed by California Native-led nonprofits or the California Native American Heritage Commission.
 - b. All public agencies that have the principal responsibility for carrying out, approving, or expecting to participate in any hydrogen or related project must conduct extensive outreach to California Native American Tribe(s) to increase their sign-on to the Tribal notification list; each agency should have to complete the CEQA process as required by PRC 21080.3.1(b)(1). This should also include updating any outdated communication information to assure proper notification for California Native American Tribe(s) when an agency undertakes a hydrogen or hydrogen related project.

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- c. When a public agency decides to undertake a hydrogen or related project, or decides an application for such a project is complete, this agency must begin the AB 52 Tribal Consultation process. A Tribal liaison must be appointed from the agency with extensive knowledge of the project and Tribal engagement practices to facilitate communication, answer questions, and address concerns from Tribal representatives.
- d. If California Native American Tribe(s) request consultation, a good faith and reasonable effort should be conducted with best practices that include establishing a formal process for meetings, site visits, and opportunities for collaborative discussions and allocating sufficient time for meaningful engagement and dialogue, allowing Tribes to provide input and voice concerns.
- e. Mandate cultural resource assessments for all projects that may impact Tribal resources to include Tribal experts in the assessment process to ensure accurate cultural insights.
- f. Provide consistent updates to Tribes throughout the project's lifecycle, informing them of any changes or developments.
- g. Seek feedback from Tribes on the agency's Tribal consultation process and continuously work to improve its effectiveness.
- h. Assure that any changes to a General Plan or adoption/changes to a Specific Plan in order to create a hydrogen or related project initiates the SB 18 Tribal consultation process in consultation with the Native American Heritage Commission (NAHC). Same practices for the AB 52 process should be followed in this procedure as well.

4. We agree that hydrogen production projects should center community consent and engagement.

- a. Informed community consent is necessary, and should be sought in addition to production conditions listed under #1 being met.
- b. Center community input, continue to elevate EJ voices, and ensure meaningful community participation is present for any hydrogen project. This includes providing language access such as interpretation and translation services for non-English speakers, depending on the common languages spoken in the particular community.
- c. Any new potential hydrogen production project must include the formation of a local oversight committee that will be composed of local stakeholders including local environmental justice, public health, labor, and utility representatives to

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conduct multiple waves of education and engagement to vet the project with the community. This oversight committee will be responsible for coordinating a series of workshops/presentations that will educate the community on sources of energy, emissions projections, job opportunities, and community benefits and risks. Following this process will include the opportunity for the oversight committee to consider local resident feedback to either approve, deny, or make modifications to the plan.

5. We oppose hydrogen production that includes dirty hydrogen production methods.

- a. Hydrogen produced using reformation or gasification is not green hydrogen.
 - i. This includes hydrogen produced by reformation of municipal solid waste gas, livestock biogas (factory farm gas), biomass, lignite or coal, and
 - ii. Hydrogen produced using any fossil fuel as a feedstock.
- b. Hydrogen produced from electrolysis, but powered by dirty electricity sources is not green hydrogen.
 - i. Dirty electricity sources include but are not limited to:
 1. Energy produced from combustion of fossil gas, landfill gas, municipal solid waste gas, livestock biogas (factory farm gas), biomass, lignite or coal, and
 2. Electricity produced from nuclear fission or fossil, biogas, or landfill gas fuel cells.
- c. Hydrogen produced using carbon capture and sequestration in any point in its production is not green hydrogen.
- d. For existing hydrogen production, we support phasing out electrolysis powered by GHG emitting fuels or non-excess wind/solar.

6. We agree that hydrogen production projects should result in net-reduction of energy pollution.

- a. Hydrogen production should be able to reduce current forms of energy production pollution.

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7. We agree that hydrogen production projects should only be considered if they are limited in scale and scope.

- a. All hydrogen production projects should be limited in size and scope to the maximum extent feasible.
- b. Public and community dollars that financially support hydrogen production should also be heavily regulated and available in public records.

STORAGE & DELIVERY

1. We agree that any hydrogen pipelines and storage infrastructure project should be equipped with safety and leak detection technologies and strictly monitored.

- a. Every hydrogen pipeline and storage infrastructure project must be equipped with effective leak detection technology.
- b. Any proposed project to transport hydrogen must include a leak detection response protocol including an alert system to notify residents and workers of potential exposure, health risks, and a relocation plan until any leak is resolved.
 - i. This program must include language access to all local populations and contact staff that can support coordination of leak response protocol.

2. We agree that any hydrogen delivery project should minimize risk by limiting size and scope and by focusing on environmental impact from development through operations and decommissioning.

- a. All hydrogen transmission and storage infrastructure projects should be limited in size and scope and equipped with design features to:
 - i. Avoid perpetuating the impacts of gas infrastructure on environmental justice communities,
 - ii. Prevent leaks, spills, breaches, and explosions in or near environmental justice communities, environmentally sensitive areas, pollution burdened communities, Tribal land, or any residential areas.
- b. In considering new hydrogen transmission and storage infrastructure, the project should:

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- i. Obtain prior and informed consent from every community and/or Tribe where hydrogen transmission infrastructure originate, pass by, or terminate,
- ii. Define who is responsible for managing infrastructure leaks throughout the lifecycle of design, implementation, and maintenance.
- iii. And should consider:
 - 1. Historic harms gas infrastructure has caused in project communities,
 - 2. Safe, reliable, and efficient alternative methods of energy delivery.
- c. Local and regional hydrogen distribution pipelines and storage/compressor facilities should be limited in size and scope to forward these objectives.

3. We agree that existing methane infrastructure is not equipped to deliver hydrogen safely.

- a. Hydrogen should not be transported in existing methane gas systems.
- b. Hydrogen should never be blended into existing methane pipelines or storage containers.

4. We agree that data gaps should be addressed before hydrogen delivery projects are permitted.

- a. Research into hydrogen pipeline and delivery infrastructure should focus on data gaps including, but not limited to
 - i. Leakage;
 - ii. Appropriate safety testing standards for dedicated hydrogen pipelines;
 - iii. Hydrogen gas impacts on humans, ecosystems, and the climate;
 - iv. Risks and challenges of different hydrogen storage options such as
 - 1. Storage in liquid state,
 - 2. Low temperature storage,
 - 3. Ammonia,
 - 4. Methanol, and
 - v. Further exploration of data gaps in hydrogen transmission and storage.

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5. We agree that community impacts should determine where hydrogen pipelines are placed.

- a. All hydrogen delivery projects should obtain prior and informed consent required for communities where pipelines or delivery infrastructure are built or hydrogen is introduced.
- b. Hydrogen delivery projects should fully consider and respect
 - i. Historic harms gas infrastructure has caused in project communities,
 - ii. Community expertise of their experience, and
 - iii. Safe, reliable, and efficient alternative methods of energy delivery.

6. We agree that the cost of infrastructure to deliver hydrogen should be clear and transparent to ratepayers and consumers.

- a. Pipeline infrastructure presents a cost issue for ratepayers, given how expensive it is to site and build.

END-USES

1. We agree to principles of supporting electrification, minimizing harm, and centering community voice and environmental impacts in our consideration of any end-uses that could use green hydrogen as a resource or feedstock.

- a. Electrification
 - i. If the end-use can be electrified, green hydrogen should not be used.
 - ii. Electrification should always be prioritized over the use of green hydrogen, including the consideration of rapid advancement in electrification technologies.
 - iii. Emerging electrification technologies should be pursued before considering hydrogen for the end-use.
 - iv. Electrification research and development should be prioritized above hydrogen research and development.
 - v. Hydrogen should only be considered when there is a technical or practical constraint to electrification.
- b. Harmful end-uses

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- i. Harmful end-uses should be reduced or phased out altogether, such as excessive fertilizer use, where possible.
 - ii. Using hydrogen to improve a feedstock for an industry that is a harmful industry shouldn't justify the continued operation of that industry.
 - iii. Potential end-uses should use the Precautionary Principle to first prove that using hydrogen in that context isn't harmful.
 - c. Community voice and environmental impacts
 - i. The cost of using green hydrogen in any end-use should not disproportionately impact EJ communities and ratepayers from lower income families.
 - ii. Public funds should be prioritized for advancing electrification over hydrogen.
 - iii. All life-cycle impacts, including financial impacts and health and environmental impacts, should be transparently considered.
 - iv. Any end-use should reduce local and regional pollutants.
 - v. Informed local communities should have veto power over any hydrogen end-use in their communities.
 - vi. EJ communities should have a governing voice in end-use decision-making.
 - vii. Environmental and EJ impact review processes must be thorough and should never be fast-tracked.

2. We prioritize equitable direct electrification with renewable energy, and we agree that green hydrogen should only be used when that is not an option.

- a. Direct electrification with renewable energy is cheaper, safer and more efficient than producing green hydrogen, and therefore should be prioritized.
- b. Green hydrogen should be considered only for necessary end-uses that cannot be supported by electrification or phased out by alternatives.
- c. Hydrogen gas should not be used in residential and commercial buildings because direct electrification with renewable energy is safer and more efficient.
- d. Hydrogen should not be used in transportation methods that can easily be electrified, including passenger cars, light-duty trucking, main line rail, and drayage trucking.
- e. Hydrogen should not be combusted in gas-fired generating units to produce electricity.
- f. Hydrogen should not be blended into the fossil gas system in pursuit of

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decarbonization.

- g. We oppose the use of green hydrogen in carbon capture operations.
- h. We may support the use of hydrogen in fuel cells to power niche applications such as back-up power for Public Safety Power Shutoff (PSPS) events as long as the high-level principles mentioned above are also followed.

3. We agree that additional research is needed regarding the use of green hydrogen in maritime transport, port infrastructure, long-haul trucking, aviation, fertilizer production, and hard-to-electrify industrial manufacturing.

- a. We agree that the principles outlined at the start of this section and elsewhere throughout the document should determine whether hydrogen should be used in any of these applications.
- b. We agree that more research is needed on green hydrogen in fertilizer but oppose any end-use that is used to greenwash or justify the continued over-application of fertilizer in rural communities who are forced to live with contaminated drinking water as a result.

WHO WE ARE

- Asian Pacific Environmental Network (APEN)
- California Environmental Justice Alliance (CEJA)
- Center for Community Action and Environmental Justice (CCA EJ)
- Center on Race, Poverty & The Environment (CPRE)
- Communities for a Better Environment
- Environmental Health Coalition
- Leadership Counsel for Justice and Accountability
- Pacoima Beautiful
- Physicians for Social Responsibility Los Angeles (PSR-LA)