

Public Hearing on Proposed Preliminary Decision to Issue Authority to Construct Permit to Install Power Generating Equipment Utilizing Hydrogen Fuel Cell Technology at Kern Energy

San Joaquin Valley Air Pollution Control District

January 12, 2026

Permitting Process - What the Air District Does

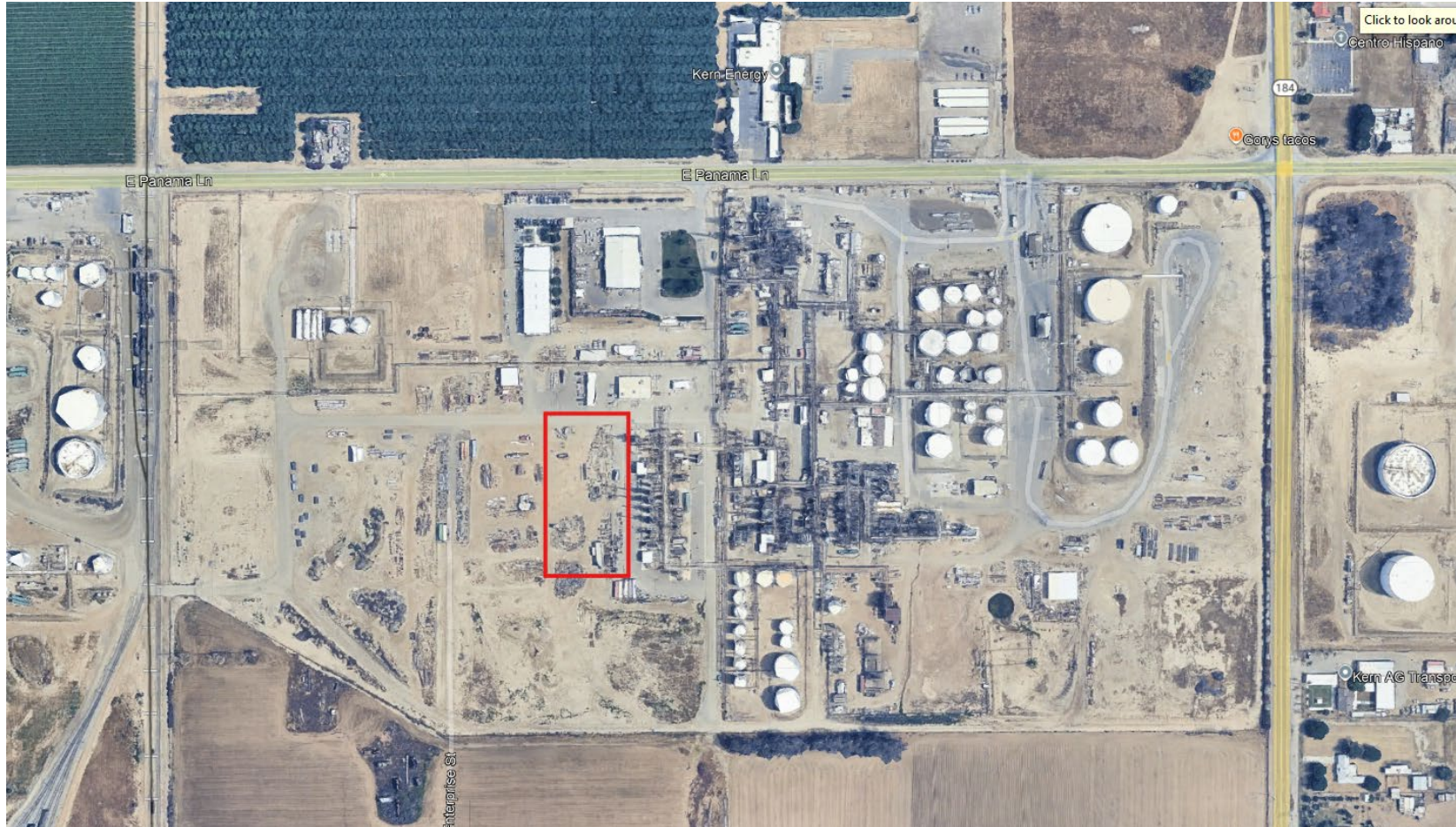
- Authority to Construct (ATC) permitting process
- Application Review (Engineering Evaluation) and Compliance Determination
 - Characterize and quantify maximum air emissions using best available data and science
 - Evaluate air quality and public health impacts using detailed local meteorology, latest modeling tools, and health protective standards
 - Evaluate compliance with all applicable local, State, and Federal air quality regulations
 - Impose enforceable operational and design requirements and limitations via ATC permit conditions to ensure project complies with all requirements and will not pose a significant risk to public or air quality
 - Project is approved by the Lead Agency under CEQA
- District is required to issue the ATC permit if project meets all rules and regulations
 - District will not issue an ATC permit unless the project proposal demonstrates full compliance

Application Review and Compliance Determination

- New sources of air pollution and modifications of existing sources must comply with District Rule 2201 - New and Modified Stationary Source Review Rule (NSR)
- The NSR rule provides the mechanism for the District to issue permits to new and expanding businesses without interfering with efforts to meet the state and federal health-based air quality standards
- Key requirements:
 - Best Available Control Technology (BACT): the most stringent control technique or limitation that has been achieved in practice or is technologically feasible and cost-effective for the type of source
 - Emissions Offsets: emissions reductions that are provided to “offset” emissions increases of air pollution above established thresholds
 - Federal Major Modification requirements
 - Daily Emission Limits
 - Public Noticing
- Prohibitory rules compliance assessments

Project Location

- The proposed project will be located within the existing Kern Energy facility at 7724 East Panama Lane



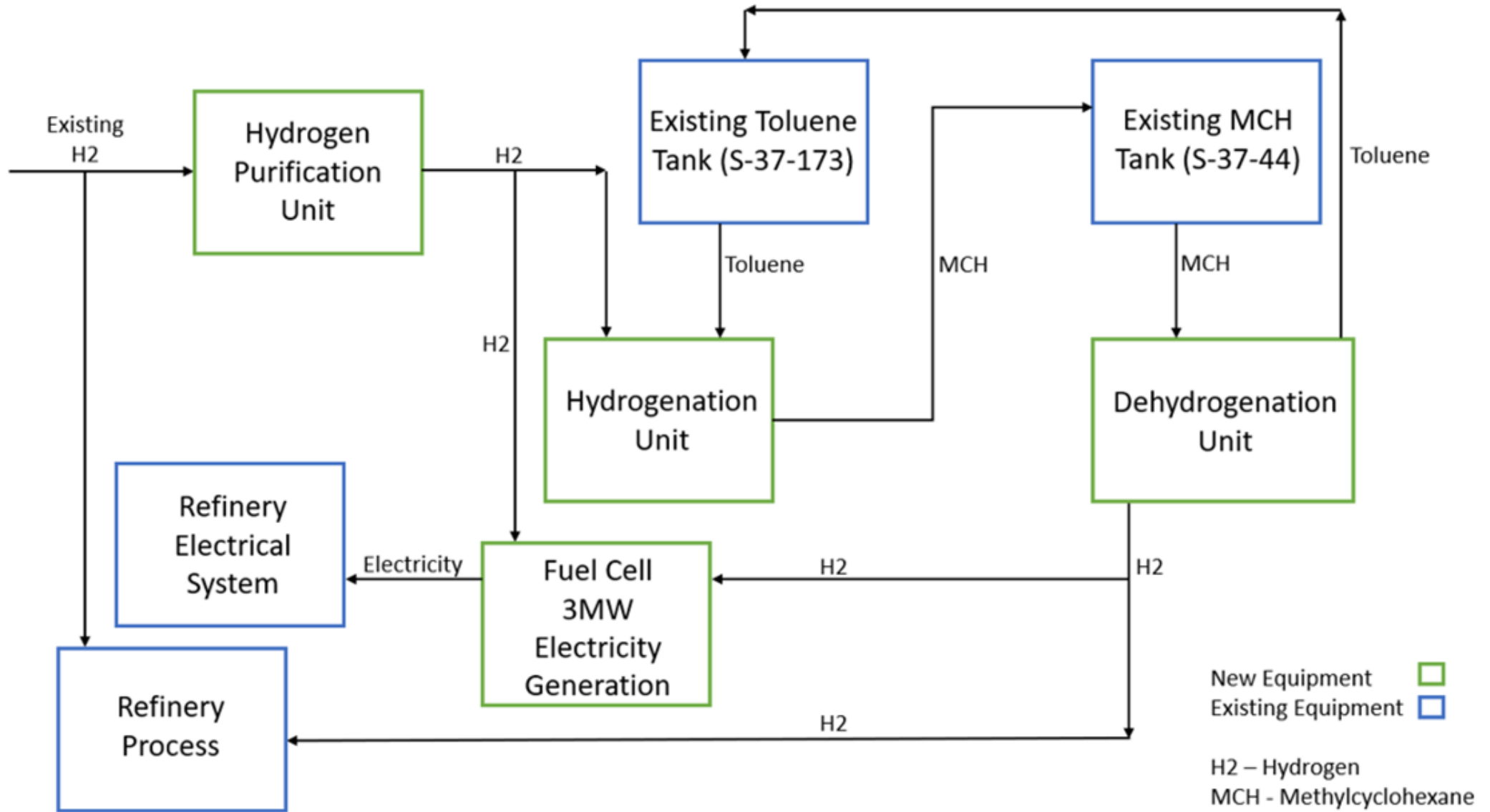
Project Proposal

- The facility is proposing to utilize hydrogen currently being produced at the facility to create supplemental electricity via zero emissions fuel cells
 - Not a hydrogen production project, but leveraging existing hydrogen production
- Hydrogen Purification Unit
- Hydrogen Conversion for Storage and Utilization:
 - The purified hydrogen is chemically bound to toluene in a vessel through a hydrogenation process to generate liquid methylcyclohexane (MCH) for storage
 - The toluene and MCH are stored in existing permitted organic liquid storage tanks
 - MCH is converted back to pure H₂ as needed through the dehydrogenation process
- Fuel Cells: Purified hydrogen can then be used in permit-exempt fuel cells to produce electricity or alternatively used to supplement facility operations

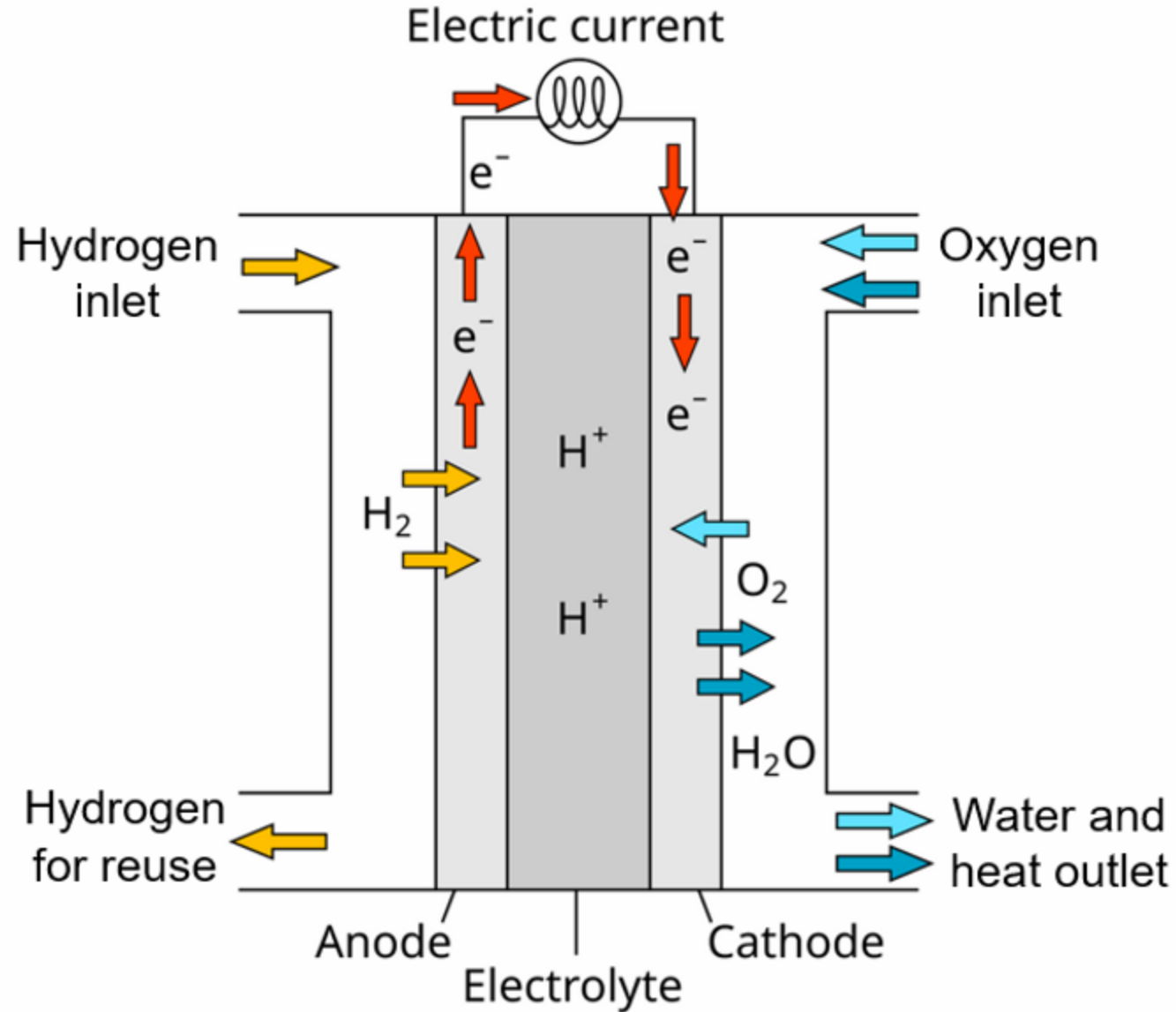
Kern Energy - Existing Refinery Uses for Produced Hydrogen

- The facility uses currently produced hydrogen in its refinery processes to improve fuel quality and upgrade heavy oil
- CA has some of the strictest sulfur fuel limits (e.g. CARB-compliant gasoline and ultra-low sulfur diesel)
- Hydrogen is used to meet these fuel standards by removing sulfur (hydrotreating/desulfurization) from the produced fuel
- Converts heavy oils into lighter fuels (jet, naphtha) via hydrocracking (break down complex hydrocarbons)

Project Proposal - Flowchart



Power Generation Fuel Cells - Permit Exempt



Source of Emissions and BACT

- The source of emissions for the project are fugitive volatile organic compound (VOC) emissions from new piping components (e.g. valves and flanges); there are no combustion sources proposed in this project
- These new units are subject to the stringent control requirements of Best Available Control Technology (BACT)
- To satisfy BACT, the VOC emissions from the fugitive piping components will be controlled by a leak detection and repair program:
 - A leak is defined as a dripping rate of more than three (3) drops per minute of liquid containing VOC or as a reading of methane, in excess of the applicable leak standard above background when measured per EPA Method 21, and an Inspection and Maintenance Program pursuant to District Rule 4455 – Components at Petroleum Refineries, Gas Liquids Processing Facilities, and Chemical Plants
 - Leak standard for valves and connectors is 100 ppmv
 - Leak standard for pumps and compressor seals is 500 ppmv

Quantifying VOC Emissions

- The fugitive emissions are calculated using the number and type of components, and multiplying those by the applicable component-specific Emission Factors (EFs)
- The EFs are based on the best available information developed by the California Air Resources Board and California Air Pollution Control Officers Association
- The number and type of new piping components were proposed by the facility include valves, flanges, connectors, pumps and seals
- Certain piping components serve hydrogen; however, the District conservatively assessed VOC emissions from these piping components
- The total project potential to emit for VOC emissions is 1.3 lbs/day, 483 lbs/year
 - Compliance is verified through their Leak Detection and Repair Inspection procedures and logs performed by the operator and the District

ERC Surplus Analysis

- ERCs are required for the project - certificate proposed was determined to be surplus of all applicable rules and regulations
- The original banking action was for a truck trailer manufacturing operation shutdown that ceased its coating operation and surrendered its operating permits
- The VOC content of the coatings used in this operation prior to its shutdown, 2.8 lb/gallon, remains compliant with District Rules
- Therefore, the permanent closure of this operation in 1992 results in no discount to the ERC issued at banking

Air Quality and Public Health Assessment

- Within the ATC permitting process, for all projects with a potential increase in air toxic impacts, the District performs a very conservative and health protective assessment that prevents the creation of public health risks from new and modified facilities
 - If the project is above any health risk threshold, the project is not approved and the ATC permit is not issued
- Determines the maximum short and long term potential health risks to nearby receptors (residences, businesses, schools, etc.) by using worst-case, health-protective assumptions (site-specific information, dispersion, meteorology, exposure-based health impacts of pollutants)
- The RMR evaluates the potential toxics in the air, the potency (toxicity) of the chemical, the length of exposure, how the pollutant is emitted (stack height and direction, exit velocity, temperature of emissions), wind direction and speed, and distance to the receptor location
- Health protective Relative Exposure Levels and potency factors for air contaminants are established by the State's Office of Environmental Health Hazard Assessment
- Final potential health risk is calculated using CARB's Air Dispersion Modeling and Health Risk Tool
- Public health risks from this project were found to be below all established thresholds for all potentially impacted receptors

California Environmental Quality Act (CEQA)

- The County of Kern (County) is the public agency having principal responsibility for approving the Project and served as the Lead Agency for the Project
- The County determined the project to be exempt from CEQA according to CEQA Guidelines
 - Building permits are ministerial under Kern County Zoning Ordinance and are exempt under the State's CEQA Guidelines
- Consistent with CEQA Guidelines, a Notice of Exemption (NOE) was prepared and adopted by the County
- The District's scope of authority over the project extends only to the potential impacts from air emissions generated by the stationary source
- The District's engineering evaluation for the Project demonstrates compliance with applicable Federal, State, and local rules and regulations regarding air quality

Project Analysis and Written Comments

- Project Summaries are available at:
 - English: [Project Summary](#)
 - Español: [Resumen del Proyecto](#)
- Detailed project analysis is available at:
<https://www.valleyair.org/public-meetings-and-participation/public-notices/#permittingERCnotices>
- Written comments
 - Due January 27, 2026
 - Please submit to: publicnotices@valleyair.org

Questions and Comments Regarding this Project