SENATE COMMITTEE ON APPROPRIATIONS
Senator Anna Caballero, Chair
2025 - 2026 Regular Session

AB 443 (Bennett) - Energy Commission: integrated energy policy report: curtailed solar and wind generation: hydrogen production

Version: February 6, 2025
Urgency: No
Hearing Date: July 14, 2025
Policy Vote: E., U. & C. 17 - 0
Mandate: No
Consultant: Ashley Ames

Bill Summary: This bill would require the California Energy Commission (CEC) to include an assessment of the availability, location, and transmission constraints associated with potential renewable resources for hydrogen production in the next Integrated Energy Policy Report (IEPR).

Fiscal Impact:
- The CEC estimates one-time costs of about $500,000 (Energy Resources Program Account [ERPA], General Fund, or other fund) for contract support to conduct an analysis to determine quantities of curtailed energy, regions of curtailment, and estimating hydrogen production from curtailed energy.

Background: Existing law requires the CEC to develop the IEPR and establishes requirements for certain reports that must be included in the IEPR. The IEPR is intended to be a comprehensive energy policy report covering many aspects of California's energy market, including energy supply and demand forecasts. In compliance with existing law, the CEC develops a full IEPR report every two years, with an update in the years between those full reports. The CEC develops the IEPR through public workshops, which include stakeholders relevant to the topics covered by the report. A draft version of the report is publicly available for comment and the IEPR is adopted at a CEC business meeting, which is also open to the public. The final IEPR is submitted to the Governor, Legislature, and other stakeholders in addition to being posted on the CEC's webpage. Over time, legislation has substantially expanded IEPR reporting duties.

The CEC has included an analysis of hydrogen demand and supply as part of prior IEPRs. However, the CEC has noted that forecasting demand and supply of electrolytic hydrogen produced in state faces challenges, particularly when assessing hydrogen production facilities' demand for electricity and the availability of infrastructure to support that demand. The 2024 update to the IEPR states:

> "There is uncertainty surrounding the role of hydrogen in the state's energy future. This is due to unknowns about the infrastructure build out to support grid connected hydrogen production, unknowns on the potential for off-grid production, and uncertainty in use cases for hydrogen. For example, the light-duty fuel cell electric vehicle market has remained a very small portion of the total zero-emission vehicle market, reaching a record low 0.12% of ZEV sales year-to-date as of Q3 2024. As a result of the above factors, there is a

similarly high level of uncertainty in forecasting electricity demand for hydrogen production, especially via grid-connected electrolysis."

Proposed Law: This bill would require that the CEC include a specified report on the potential for using curtailed solar and wind energy to produce hydrogen as part of the 2027 IEPR. Since this bill would sunset in 2029, it is unclear if this bill also establishes a requirement for the CEC to update its 2027 IEPR findings on hydrogen in the 2028 update to the IEPR.

Specifically, this bill would:

1. Define "curtailed solar and wind generation" as the difference between the reduced solar and wind generation output and the amount of solar and wind energy that could be produced without demand or transmission constraints.

2. Require the CEC to include an assessment in the 2027 IEPR regarding the potential for using curtailed solar and wind generation to produce hydrogen.

3. Specify that the assessment required by this bill must do all the following:

    a. Include an estimate of how much solar and wind generation is curtailed monthly and annually.

    b. Include an estimate of how much solar and wind generation that is curtailed monthly and annually is due to an excess of solar and wind generation relative to system demand.

    c. Include an estimate of how much solar and wind generation that is curtailed monthly and annually is due to a lack of capacity from transmission facilities.

    d. Identify the regions of the state where solar and wind energy is being curtailed and determine for each identified region, whether the curtailment is due to excess solar and wind generation relative to system demand or due to a lack of capacity from transmission facilities.

    e. Provide an estimate of how much hydrogen could feasibly and reliably be produced using energy from curtailed solar and wind generation.

    f. Identify the necessary regulatory and policy actions to optimize the use of energy from curtailed solar and wind generation for hydrogen production.

4. Sunset these provisions on January 1, 2029.

Related Legislation:

SB 1420 (Caballero, Chapter 608, Statutes of 2024) added certain hydrogen production facilities that receive specified state funding to the list of projects eligible for the CEC's opt-in permitting process.

AB 205 (Committee on Budget, Chapter 61, Statutes of 2022) among other provisions, established a framework for specified clean energy projects to seek consolidated permitting at the CEC by June 30, 2029, if they adhere to specified labor standards, including the use of skilled and trained workforce, and provide community benefits, as specified.

AB 209 (Committee on Budget, Chapter 251, Statutes of 2022) among other provisions, established a hydrogen funding program at the CEC to support projects that produce, process, deliver, store, or use hydrogen.

SB 1374 (Hueso, Chapter 611, Statutes of 2018) deleted various outdated reporting requirements in the IEPR and established a 2025 sunset for a provision requiring the CEC to include a report in the IEPR every four years on maximizing natural gas benefits.

SB 1369 (Skinner, Chapter 567, Statutes of 2018) established a definition of green electrolytic hydrogen, required the CPUC, CARB, and the CEC to consider green electrolytic hydrogen an eligible form of energy storage, and required these agencies consider other potential uses of green electrolytic hydrogen.

SB 1389 (Bowen and Sher, Chapter 568, Statutes of 2002) required the CEC to develop and adopt the IEPR and submit the IEPR to the Governor and Legislature every two years.

Staff Comments: According to the CEC, the 2027 IEPR could potentially accommodate the one-time study this bill would require. Each IEPR includes core recurring analyses, but also has capacity for a limited number of one-time studies due to staff and resource constraints.

The CEC has already incorporated studies required under prior legislation into IEPRs. In response to SB 1075 (Skinner, 2022), one such study was completed as part of the 2023 and 2025 IEPRs that analyzed the cost and amount of renewable electricity needed to produce hydrogen via electrolysis, including under scenarios where excess generation might be available. The second, more broad hydrogen study required by the same bill, SB 1075, is set for inclusion as part of the 2025 IEPR covering additional production pathways, delivery, and storage options. However, the CEC has not completed a study specifically focused on using curtailed renewable electricity to produce hydrogen as requested by the current bill.

-- END --