SENATE COMMITTEE ON ENERGY, UTILITIES AND COMMUNICATIONS
Senator Josh Becker, Chair
2025 - 2026 Regular

Bill No:	AB 443	**Hearing Date:**	7/1/2025
Author:	Bennett		
Version:	2/6/2025 Introduced		
Urgency:	No	**Fiscal:**	Yes
Consultant:	Sarah Smith		

SUBJECT: Energy Commission: integrated energy policy report: curtailed solar and wind generation: hydrogen production

DIGEST: This bill requires 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).

ANALYSIS:

Existing law:

1) Requires the CEC to adopt an IEPR every two years, with an update published every year. Existing law specifies the contents of the IEPR and requires the CEC to report on major energy trends in the IEPR, including assessments of statewide electricity, natural gas and transportation fuel demands. (Public Resources Code §25302)

2) Defines "green electrolytic hydrogen" as hydrogen gas produced through electrolysis and does not include hydrogen gas manufactured using steam reforming or any other conversion technology that produces hydrogen from a fossil fuel feedstock. (Public Utilities Code §400.2)

3) Requires the California Public Utilities Commission (CPUC), CEC and California Air Resources Board (CARB) to consider green electrolytic hydrogen an eligible form of energy storage and consider its potential uses. (Public Utilities Code §400.3)

4) Establishes an "opt-in" 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. Existing law specifies that this consolidated permitting process shall not supersede the authorities of the Lands Commission

to require leases and receive lease revenues, if applicable, or the authority of the California Coastal Commission, the San Francisco Bay Conservation and Development Commission, the State Water Resources Control Board, or the applicable regional water quality control boards. Existing law specifies that the following types of facilities are eligible for this consolidated permitting:

a) A solar or terrestrial wind facility with a generating capacity of 50 megawatts (MW) or more and associated facilities.
b) An energy storage system capable of storing 200 MW or more of energy, as specified.
c) A stationary thermal electrical generating powerplant, with a generating capacity of 50 MW or more, which does not use or rely on fossil or nuclear fuels.
d) Certain renewable energy component manufacturing facilities and transmission lines to certain renewable energy facilities.
e) An electrical transmission line for certain solar, wind, energy storage or non-fossil, non-nuclear stationary powerplants.
f) A hydrogen production facility and associated onsite storage and processing facilities that receive funding from specified state funding programs. (Public Resources Code §25545)

This bill:

1) Defines "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) Requires the CEC to include an assessment in the 2027 IEPR regarding the potential for using curtailed solar and wind generation to produce hydrogen.

3) Specifies 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) Sunsets this bill on January 1, 2029.

Background

The CEC's IEPR. 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. This bill requires the CEC to include a specified report on the potential for using curtailed solar and wind energy to produce hydrogen as part of the 2027 full 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.

Bill requires the CEC to forecast the potential for curtailed renewables to support hydrogen production. 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 (ZEV) 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.

While the CEC notes the challenges associated with demand-side analyses of grid-connected electricity for hydrogen production, this bill would require the CEC to assess the potential supply of certain excess renewables on the grid for hydrogen production and identify those areas where transmission constraints limit the use of curtailed renewables that could support hydrogen production.

Prior/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.

FISCAL EFFECT: Appropriation: No Fiscal Com.: Yes Local: No

SUPPORT:

Air Products and Chemicals, Inc.
Green Hydrogen Coalition
Independent Energy Producers Association
Invenergy LLC
Long Beach Area Chamber of Commerce
Marin Clean Energy

OPPOSITION:

None received

ARGUMENTS IN SUPPORT: According to the author:

> California has done an amazing job trying to meet its clean energy goals with over 32,000 megawatts of installed renewable resources. This has meant that at times we have too much of a good thing and curtail our renewable resources. As we add more renewables, the problem of seasonally availably electricity will grow, having too much in spring and summer while not enough in winter and fall. We must focus on how to harness this energy, and make best use of it. Having the California Energy Commission assess this issue and provide recommendations on how we can use curtailed energy to address long-term storage concerns using hydrogen just makes sense. AB 443 will give us all a better understanding of how to use and design our system to maximize the use of renewable resources.

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