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In the matter of:) Docket No. 21-IEPR-01
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Preparation of the)
2021 Integrated Energy Policy Report)
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Scoping Order for the 2021 Integrated Energy Policy Report

The California Energy Commission’s (CEC’s) Commissioner J. Andrew McAllister is the Lead Commissioner for the 2021 Integrated Energy Policy Report (*2021 IEPR*). Commissioner McAllister also will lead the analysis of building decarbonization and energy efficiency. Commissioner Siva Gunda will lead the analysis of energy reliability, natural gas, and energy demand in the *2021 IEPR*. Commissioner Patty Monahan will lead the analysis of the benefits of transitioning to a clean transportation system.

Legislative Authority

Public Resources Code (PRC) Section 25301(a) requires the CEC to “conduct assessments and forecasts of all aspects of energy industry supply, production, transportation, delivery and distribution, demand, and prices.” These assessments and forecasts are used to develop recommendations for energy policies that conserve state resources, protect the environment, provide reliable energy, enhance the state’s economy, and protect public health and safety. The CEC includes these energy policy recommendations in its biennial Integrated Energy Policy Report that is issued in odd-numbered years.

Pursuant to PRC Section 25300(d), “The Legislature further finds and declares that timely reporting, assessment, forecasting, and data collection activities are essential to serve the information and policy development needs of the Governor, the Legislature, public agencies, market participants, and the public.”

Consistent with past practices, the CEC intends to open an informational proceeding for the development of the *2021 IEPR*. Pursuant to PRC Section 25210 and California Code of Regulations, Title 20, Section 1220, informational proceedings allow the CEC to hold hearings and take other actions to gather and assess information needed to assist it in formulating policies. Instituting an informational proceeding through the adoption of an order by the Commission ensures that the commissioners who will be responsible for overseeing the preparation of the *IEPR*, can take all action necessary to collect the information needed to complete the required analyses and assessments, including the issuance of subpoenas.

Further, PRC 25302(d) requires the CEC to consult with various entities in preparing the *IEPR* including the: California Public Utilities Commission (CPUC), CPUC Public Advocates Office, California Air Resources Board, California Independent System Operator (California ISO), Department of Water Resources, Department of Transportation, and Department of

Motor Vehicles, and any federal, state, and local agencies it deems necessary. The statute states that: “For the purpose of ensuring consistency in the underlying information that forms the foundation of energy policies and decisions affecting the state, those entities shall carry out their energy-related duties and responsibilities based upon the information and analyses contained in the report.” Additionally, the CEC will collaborate with federal and state agencies, local governments, and tribes to meet mutual decarbonization and energy equity goals.

Background

California has enacted a suite of policies aimed at reducing the state’s greenhouse gas (GHG) emissions, while also maintaining energy reliability, controlling costs, and ensuring that all Californians benefit from the state’s clean energy initiatives. Key legislative actions and executive orders (EOs) are listed below and build toward achieving an electricity system that is 100 percent zero carbon by 2045, and, more broadly, a statewide goal of carbon neutrality by 2045. These innovative policies, coupled with rapid market changes and the growing effects of a changing climate, create new opportunities and require creative solutions to transform the state’s energy system.

The heat storm experienced in August 2020 that led to rotating power outages prompted a redoubling of efforts to assure energy reliability in this changing climate. The CEC, CPUC, and the California ISO are working to ensure grid reliability in response to the heat storm and other increasingly severe events related to climate change. In the January 2021 *Final Root Cause Analysis, Mid-August 2020 Heat Storm*, the CEC, CPUC, and California ISO identified factors that led to the two rolling outages, and recommended actions for improving resource planning, procurement and market practices (<http://www.caiso.com/Documents/Final-Root-Cause-Analysis-Mid-August-2020-Extreme-Heat-Wave.pdf>). Implementation of these actions is underway. The 2021 *IEPR* can provide additional information to inform these actions, particularly those aimed at improving near-term reliability.

Energy use and the resulting emissions in the building sector remain a key focus for the state as it aims to decarbonize the economy by 2045. As the state decarbonizes its energy system, it must prudently manage its aging gas-pipeline infrastructure. The 2021 *IEPR* will build on the goals and work responding to Assembly Bill (AB) 758 (Skinner, Chapter 470, Statutes of 2009), Senate Bill (SB) 350 (De León, Chapter 547, Statutes of 2015), AB 3232 (Friedman, Chapter 373, Statutes of 2018), and the 2019 *IEPR* to further a comprehensive approach toward decarbonizing buildings in a cost-effective and equitable manner.

Finally, in every odd numbered year (such as 2021), the CEC undertakes a new 10-year energy demand forecast. For the 2021 *IEPR*, the CEC will make the following enhancements to the forecast (1) extend the forecast timeframe to 15 years to coincide with several state goals that are planned for 2035, and (2) improve methodologies to better quantify and predict the likelihood, severity, and duration of future extreme heat events. In addition to the forecast, beginning with the 2021 *IEPR*, the CEC will further the development of demand scenario analyses to help address the growing magnitude of uncertainty in long-term energy planning due to economy-wide decarbonization efforts. Transportation was the focus of the 2020 *IEPR Update*, which identifies important changes and trends in the state’s transportation system. While not the focus of the 2021 *IEPR*, planning for changes in the transportation system is a major element of energy planning.

Key Legislative Initiatives and Executive Orders

The 2021 *IEPR* will reflect the many key policy initiatives that shape California's energy policies, including:

- AB 758 (Skinner, Chapter 470, Statutes of 2009): required the CEC to develop and periodically update an action plan to increase energy efficiency savings in existing buildings.
- EO B-16-2012: set a goal of reaching 1.5 million ZEVs on California's roadways by 2025.
- SB 1383 (Lara, Chapter 523, Statutes of 2014): set a target of achieving a 40 percent reduction in statewide methane emissions below 2013 levels by 2030.
- SB 350 (De Leon, Chapter 547, Statutes of 2015): elevated the need for energy equity and updated renewables and energy efficiency goals towards reducing GHG emissions by 2030.
- SB 32 (Pavley, Chapter 249, Statutes of 2016): set a statewide goal to reduce California's GHG emissions 40 percent below 1990 levels by 2030.
- AB 197 (Garcia, Chapter 250, Statutes of 2016): assured that the state's implementation of its climate change policies is transparent and equitable, with the benefits reaching disadvantaged communities being fundamental to these efforts.
- SB 100 (De León, Chapter 312, Statutes of 2018): accelerated the state's renewables goal to 60 percent by 2030 and put into law the state's commitment to 100 percent renewable and a zero-carbon electricity system by 2045.
- EO B-55-18: established a statewide goal to achieve carbon neutrality by 2045.
- AB 3232 (Friedman, Chapter 373, Statutes of 2018): called on CEC to assess potential to reduce GHG emissions 40 percent below 1990 levels from residential and commercial buildings by 2030.
- SB 1414 (Wolk, Chapter 678, Statutes of 2016): required the CEC to develop a plan to promote the installation of central air conditioning and heat pumps in compliance with Title 24.
- SB 1477 (Stern, Chapter 378, Statutes of 2018): required the CPUC, in consultation with the CEC, to create two incentive programs to promote the installation of low-emission and near-zero-emission space- and water-heating technologies in new and existing homes (the Building Initiative for Low-Emissions Development [BUILD] and Technology and Equipment for Clean Heating [TECH]).
- SB 49 (Skinner, Chapter 697, Statutes of 2019): gave the CEC new authority to develop flexible demand appliance standards within Title 20 and requires the CEC to report on implementation in the *IEPR*.
- EO B-48-18: called for at least 5 million ZEVs on California's roads by 2030 and spurs the installation of 250,000 plug-in electric vehicle chargers, including 10,000 direct current fast chargers and 200 hydrogen refueling stations by 2025.

- EO N-79-20: called for 100 percent of in-state sales of new passenger cars and trucks to be zero-emission by 2035, set a goal of 100 percent of medium- and heavy-duty vehicles in the state be zero-emission by 2045 for all operations where feasible and by 2035 for drayage trucks, and set a goal for the state to transition to 100 percent zero-emission off-road vehicles and equipment by 2035 where feasible.

Scope of the 2021 IEPR

The 2021 IEPR will continue and expand on previous efforts to decarbonize California's energy system while ensuring that the benefits are equitably spread. The 2021 IEPR will address four major topics as described below with a focus on equity in the report and workshops:

1. Energy reliability over the next five years
2. Natural gas outlook and assessments
3. Building decarbonization and energy efficiency
4. Energy demand

The 2021 IEPR will include an analysis of the benefits of transitioning to a clean transportation system, as required by statute.

1. Energy Reliability Over the Next Five Years

Electric Reliability: In coordination with the CPUC, California ISO and other statewide balancing authorities, the 2021 IEPR will discuss opportunities to improve electric reliability for Californians over the next five years. Areas for discussion will include:

- Electric reliability assessments in the California ISO footprint as well as all of California as a whole over the next five years. This will include an evaluation of progress towards ensuring sufficient replacement resources are available to enable the most expedient retirement of the remaining once-through cooling power plants (consistent with recommendations in the 2019 IEPR) and of the Diablo Nuclear Power Plant.
- Opportunities to reduce reliance on fossil gas-fired electric generation in California over the next five years while maintaining electric reliability.
- Approaches to prioritize equity including improving air quality, reducing cost, and exploring other opportunities to increase benefits to all Californians. Opportunities to increase reliability in California through better integration with the western regional grid.
- Whether it is economically workable to retrofit existing pipeline gas-fired electric generation resources to improve their efficiency to support achieving policy goals.
- Opportunities to address issues and barriers related to expanding the role of distributed energy resources and demand response in supporting reliability and resource sufficiency both in the near term and in long-term planning. This exploration will consider market trends and will examine the current and potential roles of smart meter data in enabling these resources.

- Publicly owned utility (POU) compliance with energy storage system procurement targets and policies adopted by their governing boards (Public Utilities Code 9506).
- Ensuring energy reliability in Southern California, taking into account the infrastructure challenges with the pipeline gas system, limitations on the use of the Aliso Canyon pipeline gas storage facility, and the development of replacement resources from power plant retirements.

2. Natural Gas Outlook and Assessments

In the *2021 IEPR*, the CEC will assess the outlook for gas use in California both in the 10-year and 25-year planning horizons across key sectors through development and refinements to gas demand forecasts and scenarios, to accurately reflect the impacts of decarbonization policies and goals of the state.

This will include exploring the role of renewable gas, hydrogen, and other zero-carbon alternatives such as engineered carbon removal (ECR) in a low carbon future, to replace and/or complement the use of fossil gas with focus on: identification of the most suitable applications; availability and pricing; and opportunities to repurpose existing infrastructure to integrate the usage of renewable gas, hydrogen, and ECR.

The CEC will also collaborate with the CPUC on their Long-Term Gas Planning Rulemaking and develop necessary assessments.

As appropriate, the 2021 IEPR will report on interagency planning efforts related to the potential to reduce, repurpose, and transform the state's pipeline gas infrastructure as the demand for fossil gas declines.

3. Building Decarbonization and Energy Efficiency

Decarbonizing California's building stock is an essential element of meeting the state's long-term carbon neutrality goals. The *2021 IEPR* will include an in-depth discussion on building decarbonization policies and strategies, provide updates and analysis of the various standards and incentive programs aimed at supporting building decarbonization and maintaining system reliability, and assess the contributions of existing and potential policies and programs toward meeting the state's decarbonization goals in an equitable manner. Expanding on the building decarbonization assessment called for by AB 3232, the *2021 IEPR* building decarbonization analysis will include discussion of:

- Residential and commercial building decarbonization strategies, as well as strategies to decarbonize industrial and agricultural sectors.
- An update on targets towards a statewide doubling of energy efficiency, as required by SB 350.
- Strategies to promote and ensure the quality installation of central air conditioning and heat pumps, as directed by SB 1414.
- The development of load flexibility standards for technologies that have the ability to make operational adjustments in response to signals from the grid. SB 49 gave the CEC new authority to develop flexible demand appliance standards within Title 20 and requires the CEC to report on implementation in the IEPR.

- Analysis of equity and workforce considerations related to decarbonization to support equitable decarbonization measures.
- Strategies to increase innovative financing approaches — removing the upfront costs barriers — for the comprehensive retrofits of existing buildings that support California’s decarbonization goals, including expanded financing opportunities for renters and low-income Californians, to be done in collaboration with CPUC initiatives (for example, CPUC Rulemaking 20-08-022).
- The Building Energy Efficiency Standards 2022 Update and future updates.
- POU energy efficiency targets in comparison with actual savings (Public Utilities Code 9505, PRC 25305.2).
- Needed data and analytical tools to enhance assessments and measure progress of decarbonization of California’s building stock.

4. Energy Demand

Electricity, Natural Gas, and Transportation Demand Forecasts: The CEC will prepare new end-user electricity, natural gas, and transportation fuel demand forecasts to 2035. Several forecasting products will be developed, including forecasts of electricity consumption and peak electricity demand for California and for individual utility planning areas and forecast zones in the state and analysis of procurement trends amongst load serving entities. In this, the CEC will reassess the impacts on electricity demand of climate change, behind-the-meter generation, adoption of battery storage, energy efficiency standards, fuel substitution programs, and transportation electrification trends. In developing the peak demand forecast, the CEC will improve methodologies for quantifying the likelihood, severity, and duration of future extreme heat events. The CEC will also develop exploratory transportation demand scenarios to assess energy impacts of state goals, proposed policies, and other potential market changes.

Energy Demand Scenarios: Staff will initiate a process to develop economy-wide energy demand scenarios through a “what if” analysis geared towards policy compliance and aspirational goal setting. Staff will explore new programs, policies, potential market changes, and other demand-side strategies that are (1) needed to meet California’s long-term decarbonization goals, and (2) outside the scope of the ten-year energy demand forecast.

The demand scenarios will be designed to assess options for achieving several goals related to a renewable and carbon-free electricity system by 2045, GHG emissions reductions, and the sale of zero-emission vehicles. The demand scenarios are a tool to assess the potential of policies and strategies needed to meet decarbonization goals, as well as their impact on state energy system planning, including consideration of impacts on disadvantaged communities.

2021 IEPR Schedule

The Lead Commissioner directs the CEC staff to use the following general schedule. As workshop topics and dates are finalized, the CEC will post notices on its website and notify stakeholders at least 10 days in advance of each workshop date. The schedule will be posted and regularly updated at <https://www.energy.ca.gov/data-reports/reports/integrated-energy-policy-report/2021-integrated-energy-policy-report>.

Task/Event	Date(s)
Public workshops on specific topics	February 2021 – December 2021
Final Scoping Order released	March 2021
Adopt order instituting investigation for 2021 IEPR	March 2021
Release draft <i>2021 IEPR</i>	October 2021
Release final <i>2021 IEPR</i>	January 2022
Adopt <i>2021 IEPR</i>	February 2022

Participation in the Integrated Energy Policy Report Proceeding

Policy recommendations contained in the *2021 IEPR* will be based on the record developed during the proceeding, including data and technical analyses by the staff and stakeholders. Analysis and information developed in other proceedings at the CEC and by other agencies will be incorporated as appropriate. Participants should use the IEPR docket number 21-IEPR-01 and associated dockets when submitting information for the Lead Commissioner's consideration which are as follows:

- 21-IEPR-01 - General/Scope
- 21-IEPR-02 - Electricity Resource Plans
- 21-IEPR-03 - Electricity and Gas Demand Forecast
- 21-IEPR-04 - Energy Reliability
- 21-IEPR-05 - Natural Gas Outlook and Assessments
- 21-IEPR-06 - Building Decarbonization and Energy Efficiency
- 21-IEPR-07 - Clean Transportation Benefits

The Lead Commissioner encourages the active participation of all interested and affected participants because public input is essential to ensure a complete and thorough record. As in previous proceedings, the Lead Commissioner recognizes that close coordination with federal, state, local, and other agencies is critical to identifying and addressing energy infrastructure and related environmental challenges. The Lead Commissioner directs staff to continue working with these agencies to ensure their participation in this proceeding.

Contacts

The Energy Commission's Public Adviser's Office provides the public with assistance in participating in Commission proceedings. For information on how to participate in this forum, please contact the public adviser at publicadviser@energy.ca.gov, (916) 654-4489, or toll free at (800) 822-6228. Requests for interpreting services and reasonable accommodations should be made at least five days in advance. The CEC will work diligently to accommodate all requests.

Media inquiries should be directed to the Media and Public Communications Office at mediaoffice@energy.ca.gov or (916) 654-4989.

Questions on the technical subject matter should be directed to Heather Raitt, Assistant Executive Director for Policy Development, at (916) 628-2355 or by email at Heather.Raitt@energy.ca.gov.

Availability of Documents

When new information is posted, an email will be sent to those on the energypolicy listserv. Those interested in receiving these notices can subscribe in the lower right corner at <https://www.energy.ca.gov/data-reports/reports/integrated-energy-policy-report/2021-integrated-energy-policy-report> or alternatively manage existing listservs or sign up for others here <http://www.energy.ca.gov/listservers/index.html>.

IT IS SO ORDERED.

Dated: Friday, March 16, 2021, at Sacramento, California

APPROVED BY:

J. Andrew McAllister
Lead Commissioner for the 2021 IEPR

CEC List Servers: energypolicy, diversity, dcag, barriers, climatechange, efficiency, existing_buildings, decarbonization, electricity, natural gas