

DOCKETED	
Docket Number:	23-SB-100
Project Title:	SB 100 Joint Agency Report
TN #:	251709
Document Title:	2021 SB 100 Report and 60 Day Report
Description:	CEC - SB 100 Kickoff Workshop Presentation Slides
Filer:	Xieng Saephan
Organization:	California Energy Commission
Submitter Role:	Commission Staff
Submission Date:	8/21/2023 8:47:37 PM
Docketed Date:	8/22/2023



2021 SB 100 Report & Report to the Governor on Priority SB 100 Actions

Liz Gill

August 22, 2023



Senate Bill 100

Officially titled “The 100 Percent Clean Energy Act of 2018,”
Senate Bill 100 (SB 100, De León):

- 1** Sets a 2045 goal of powering all retail electricity sold in California with renewable and zero-carbon resources.
- 2** Updates the state’s Renewables Portfolio Standard to ensure that by 2030 at least 60 percent of California’s electricity is renewable.
- 3** Requires the CEC, CPUC, and CARB to use programs under existing laws to achieve 100 percent clean electricity and issue a joint policy report on SB 100 by 2021 and every four years thereafter.



Eligible Resources

- The SB 100 target includes renewable and zero-carbon resources.
- For Renewable Portfolio Standard (RPS) compliance, generation must be procured from certified facilities, which include:
 - Solar
 - Wind
 - Geothermal
 - Biomass, such as crop residues, forest waste, and landscape trimmings
 - Biomethane from landfills and organic waste digesters
 - Small hydroelectric
 - Fuel cells using renewable fuel or qualifying hydrogen gas
- The term zero-carbon resources does not have an official definition, but examples could include nuclear (existing), large hydro (existing), natural gas with 100 percent carbon capture, clean renewable hydrogen combustion, or other emerging technologies.



SB 100 Reports

California Energy Commission (CEC), California Public Utilities Commission (CPUC), and California Air Resource Board (CARB) to issue a joint-agency report every four years including the following:

- A. A review of the policy (technical, safety, affordability, reliability)**
- B. Reliability benefits and impacts**
- C. Financial costs/benefits**
- D. Barriers/Benefits of achieving the policy**
- E. Alternative scenarios and costs/benefits of each**

PUC 454.53 (d)



The 2021 SB 100 Report

- **Iterative and ongoing effort** to assess barriers and opportunities to achieving the 100 percent clean electricity policy
- This report provides **directional insights** into what a 2045 portfolio may look like, including resource requirements and costs
- The preliminary findings are **intended to inform state planning** and are not intended as a roadmap to 2045
- **Future work will delve deeper into critical topics** such as system reliability and land use and further address energy equity and workforce needs



Key Takeaways from 2021 Report Modeling

- SB 100 is technically achievable through multiple pathways.
- Construction of clean electricity generation and storage facilities must be sustained at record-setting rates.
- Diversity in energy resources and technologies lowers overall costs.
- Retaining some natural gas power capacity may minimize costs while ensuring uninterrupted power supply during the transition to 100 percent clean energy.
- Increased energy storage and advancements in zero-carbon technologies can reduce natural gas capacity needs.
- Further analysis is needed.



Recommendations for Further Analysis

- 1) Verify that scenario results satisfy the state's grid reliability requirements.
- 2) Continue to evaluate the potential effects of emerging resources, such as offshore wind, long-duration energy storage, clean and renewable hydrogen technologies, and demand flexibility.
- 3) Assess environmental, social, and economic costs and benefits of the additional clean electricity generation capacity and storage needed to implement SB 100.
- 4) Hold annual workshops to support alignment among the joint agencies and continuity between SB 100 reports.



Social Costs and Non-Energy Benefits



In written comments to the 2021 report, public participants recommended the joint agencies integrate at least the following into SB 100 planning:

- Land Use Impacts
- Public Health and Air Quality
- Water Supply and Quality
- Economic Impacts
- Resilience



Process Recommendations

- Align future SB 100 planning with findings and outcomes from relevant state efforts.
 - The CEC's energy demand forecasts, including electrification trends and updates for extreme climate event planning.
 - Transmission planning and development.
 - Reliability planning, including possible updates to resource adequacy requirements.
 - Electric system resilience planning.
 - Assessments from CPUC's Integrated Resource Planning, CEC's Integrated Energy Policy Report, and CARB's Scoping Plan.
- Consult with California Native American Tribes and advisory groups to guide equitable planning and implementation.
- Retain and expand upon best practices for community outreach and accessibility.



The 2021 SB 100 Report Informed Multiple Initiatives and Planning Processes

- Directly informed:
 - *Interagency Report to the Governor on Priority SB 100 Actions* ([link](#))
 - CAISO's 20-Year Transmission Outlook (2022) results which found the need for an estimated \$30 Billion of transmission infrastructure to support SB 100 goals ([link](#))
 - Governor's Energy Transition Plan ([link](#))
- Indirectly informed:
 - IRP – latest "Preferred System Plan" (adopted Feb 2022) equates to 73% RPS resources and 86% GHG-free resources by 2032.
 - 2023-2024 TPP – CAISO is analyzing transmission impacts from CPUC's portfolio of 69 GW of new resources by 2033 under CEC's "Additional Transportation Electrification" high load forecast.
 - 2022 Scoping Plan Update – informed renewable and zero-carbon generation technologies to include in modeling, Scoping Plan Scenario meets SB 100 by 2045.



Report to the Governor on Priority SB 100 Actions





Background

- Initiated out of a Proclamation of a State of Emergency (July 2021)
- *Report to the Governor on Priority SB 100 Actions to Accelerate the Transition to Carbon-Free Energy* (known as the “60-Day Report”) ([link](#))
- 60-Day Report identifies and prioritizes SB 100 actions
- Actions are informed by recommendations from the 2021 SB 100 Report



Priority Action Areas

- The priority actions areas identified in the report are:
 - Improving processes to support project development
 - Project permitting
 - Transmission planning, permitting and interconnection
 - Enhancing analytical tools
 - Supporting development of long lead time resources
 - Maximizing demand flexibility
 - Continuing to explore regional markets
 - Rate structures and financing models that support energy and climate goals
 - Increasing alignment with federal efforts



Ongoing Achievement of Recommendations

Category	Recommendations
Support Deployment of Clean Energy Resources	<ul style="list-style-type: none">• Continuation of the TED Task Force (ongoing)• Statutory changes to allow sharing of confidential information to CAISO for planning purposes• CAISO Interconnection Process Enhancements (ongoing)• AB 205 Opt-In Permitting
Enhance Planning	<ul style="list-style-type: none">• CAISO 20-Year Transmission Outlook• Updated CPUC-CEC-CAISO MOU on Transmission and Resource planning• Improved incorporation of climate impacts in demand forecasting (ongoing)• Creation of a strategic plan for offshore wind development (ongoing)
Support Affordability	<ul style="list-style-type: none">• Explore statutory and regulatory mechanisms to reduce rate pressure on low- and moderate-income ratepayers (ongoing)• Identify funding sources other than ratepayer monies (ongoing)• Continue to explore regional markets (ongoing)• Maximize opportunities for federal investments (ongoing)