CALIFORNIA
BUSINESS AND ECONOMIC DEVELOPMENT

GO-Biz Clean Energy Permitting Initiative

Playbook and Toolkit

June 18, 2025
11:30 AM – 12:30 PM

Webinar Q&A

To submit questions, visit:
https://tinyurl.com/energy-unit

AGENDA

11:30 – 11:45	• Welcome • Overview of the Clean Energy Permitting Initiative
11:45 – 12:10	• Findings: Permitting Barriers & Potential Accelerators • Tools in Development
12:10 – 12:15	• GO-Biz Website & Playbook First Look
12:15 – 12:30	• Questions & Answers (Q&A) • Next Steps

Welcome & Opening Remarks

Overview of the Clean Energy Permitting Initiative

Clean Energy Projects Deployed (2020-2024)

New MWs Online - Nameplate
By Year and Resource Type

Data includes projects online as of December 31, 2024

Technology Type	2020	2021	2022	2023	2024	Total MW	# Projects
SOLAR	1,300	1,048	913	2,482	2,227	**7,970**	121
STORAGE	101	1,703	1,907	2,528	3,678	**9,918**	139
HYBRID (SOLAR + STORAGE)	0	26	890	470	503	**1,841**	25
WIND	16	304	367	171	260	**1,118**	22
GEOTHERMAL	0	0	0	0	41	**41**	1
HYDRO	26	0	0	0	0	**26**	4
BIOMASS	0	2	3	3	0.5	**8**	4
BIOGAS	1	0	2	3	0	**6**	3
Subtotal Total New SB100 Resources, IN-CAISO	**1,444**	**3,083**	**4,082**	**5,607**	**6,709**	**20,926**	**319**
NATURAL GAS, incl. Alamitos & Huntington Beach	1,448	17	12	0	63	1,539	17
Total New Resources, IN-CAISO	**2,892**	**3,100**	**4,094**	**5,607**	**6,772**	**22,466**	**336**
New Imports, Pseudo-Tie or Dynamically Scheduled	695	807	49	50	280	1,881	15
Total New Resources, including Imports	**3,587**	**3,907**	**4,143**	**5,657**	**7,052**	**24,346**	**351**

Source: CPUC

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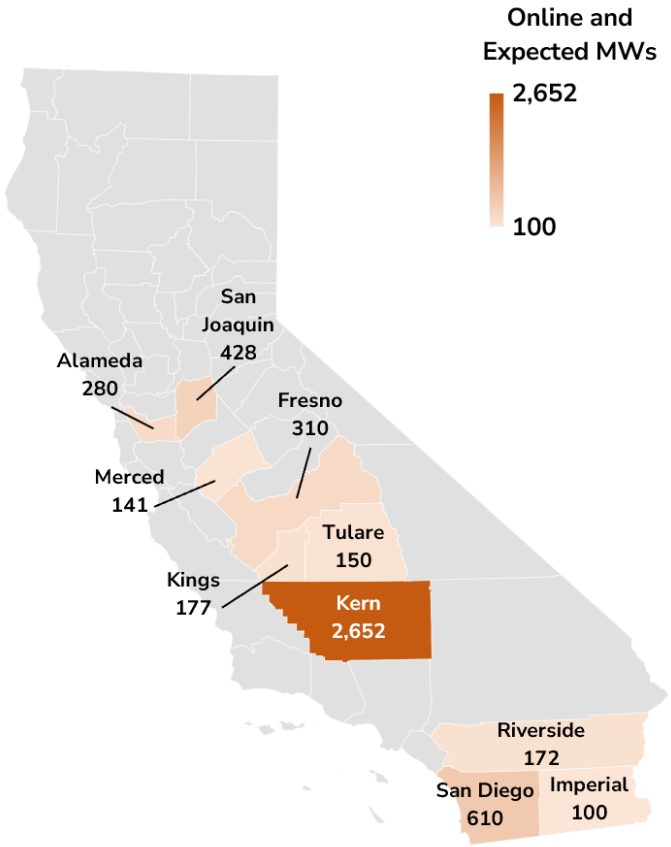
Expected Clean Energy Projects (2025)

2025 | Total Online and Expected Megawatts (MWs)

	MWs	Projects
Online	1,688	24
Expected	5,190	87
Total	**6,878**	**111**



2025 | Top Counties by Expected Megawatts (MWs)

County	Online MWs	Online Projects	Expected MWs	Expected Projects
Kern	403	9	2,249	20
San Diego	450	2	160	4
San Joaquin	20	1	408	6
Fresno	97	1	213	6
Alameda	0	0	280	5
Kings	3	1	174	4
Riverside	27	1	145	4
Tulare	0	0	150	4
Merced	6	2	135	7
Imperial	0	0	100	1

**Data through May 6th, 2025*

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Expected Clean Energy Projects (and Beyond)

Resource Type	2026	2027	2028	Total
Solar	1,423	322	150	1,895
Battery Storage	3,576	3,667	915	8,158
Paired/Hybrid	1,285	1,321	70	2,676
Wind	1,435	2,580	-	4,015
Geothermal	126	163	450	739
Biomass/Biogas	-	-	-	-
TOTAL	7,845	8,053	1,585	17,483

Source: CPUC

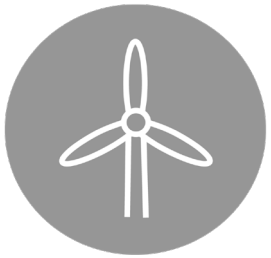
Questions? Use the QR code or https://tinyurl.com/energy-unit

Clean Energy Permitting Playbook & Toolkit

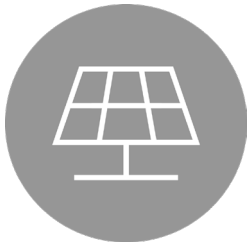
OBJECTIVE | Increase transparency, align permitting processes and reduce barriers to energy projects

OUTCOME | Best practices, guides, tools and strategies for local permitting authorities to easily access

PROJECT SCOPE



ONSHORE WIND



LARGE SCALE SOLAR

BATTERY ENERGY STORAGE SYSTEMS

Questions? Use the QR code or https://tinyurl.com/energy-unit

GO-Biz Clean Energy Project Permitting Initiative | Process & Timeline

	Jan - Apr 2025	Apr - Jul 2025	July - Nov 2025
Phase	**Complete** **Discovery & Data Collection**	**In Progress** **Playbook and Toolkit Development**	**In Progress** **Playbook and Toolkit Publication**
Outcomes	**Stakeholder Engagement:** Conduct surveys and interviews with local permitting authorities, developers, and community-based organizations. **Permitting Process Evaluation:** Evaluate the permitting processes of local jurisdictions for large-scale renewable energy projects. **Information Synthesis:** Compile and analyze the gathered data to derive actionable insights.	**Playbook Development:** Content based on findings from outreach. Seek feedback through focus groups. Develop actionable recommendations. Document best practices to streamline and optimize permitting workflows. **Toolkit Development:** Tools, templates, guidance, and support materials to assist Local Permitting Authorities throughout the permitting process.	**Playbook Launch** • Draft Release: Targeted for summer 2025 to allow early engagement and review. • Final Version: Scheduled for release in late fall 2025, incorporating stakeholder input. **Stakeholder Engagement** Solicit feedback on both the draft report and toolkit to ensure relevance, clarity, and usability.

Questions? Use the QR code or https://tinyurl.com/energy-unit

Discovery & Data Collection

Surveys, Interviews, & Other Outreach

In Progress

SURVEYS

170+ completed

- Local Permitting Authorities
- Developers
- Community-Based Organizations
- Native American Tribes

INTERVIEWS and CONSULTATIONS

50+ completed for insights from:

- Local Permitting Authorities
- Developers
- Trade Associations
- Native American Tribes
- Community-Based Organizations

OTHER OUTREACH

- REACH Inland Empire Conference (Dec 2024)
- GO-Biz BESS Webinar (Mar 2025)
- GO-Biz Playbook & Toolkit Webinar (Jun 2025)

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Findings

Permitting Barriers & Potential Accelerators

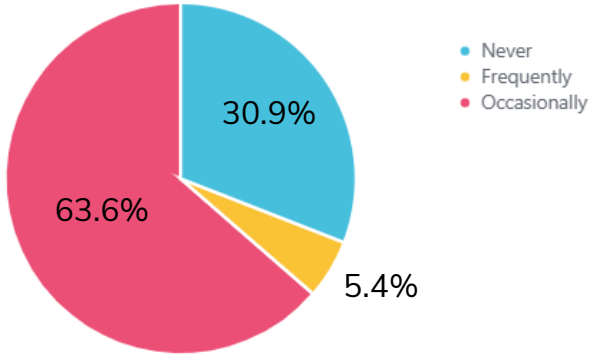
Summary of Survey Findings: The Big Picture

General insights from Local Permitting Authorities

24 questions distributed to **551 agencies statewide** on the following topics:

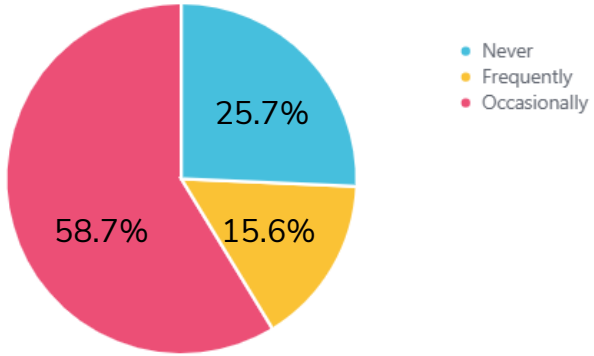
1) Key challenges and barriers
2) Current permitting processes and best practices
3) Resources, tools, or guidance that could be helpful

How often are permits rejected/reworked, and why?



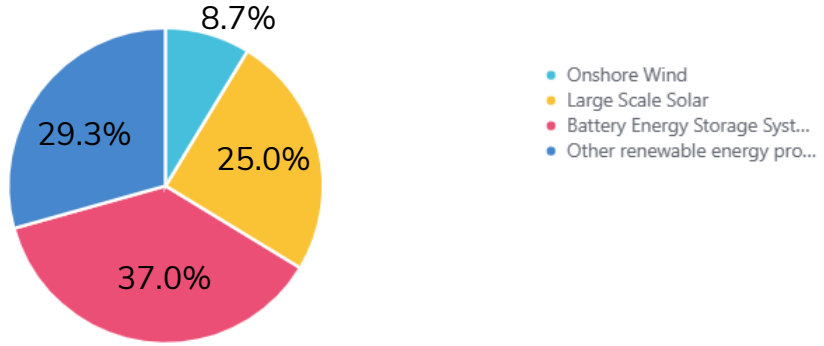
Why*:
- incompleteness
- compliance
- community concerns

How often are permits delayed, and why?



Why*:
- Community concerns
- Appeals
- Obtaining info on time

Which types of renewable energy projects are most time consuming to permit and why?



Why*:
- BESS safety requirements
- Community perception

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*From open-ended responses

Summary of Survey Findings: The Big Picture

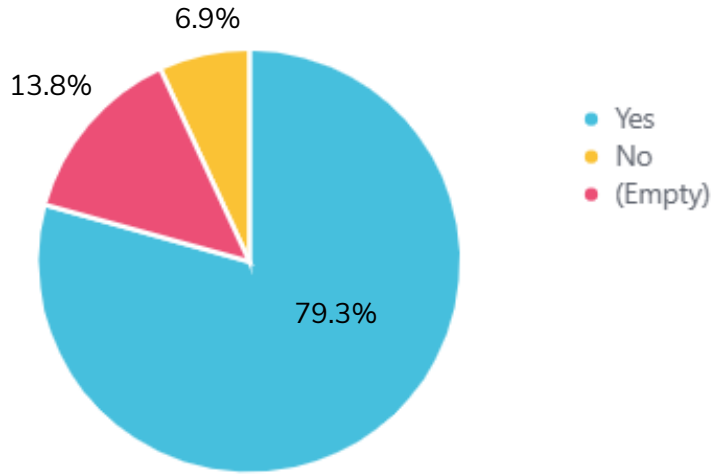
General insights from Developers

21 questions distributed to a short list of **developers** on the following topics:

1) Key challenges and barriers
2) Involvement in renewable energy
3) Resources, tools, or guidance would most helpful

3. Do you anticipate any change to your company's involvement in renewable energy beyond the 2-3 years noted above?

9. Has the permitting process ever been a factor to NOT pursue renewable energy development in a particular locality?



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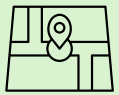
The Local Permitting Process and Best Practice Recommendations

Priority

1 Pre-Permit Application



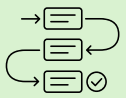
Siting

Early coordination on siting

Use of model ordinances

Site specific list of sensitive & protected species

Land use compatibility strategies



Pre-Application Understanding of Process & Requirements

Pre-application submittal meeting

Application resources & checklist

Permit by Rule

2 Permit Application

Local Permitting Authority Review & Decision

Clean energy guidebook

Documented permitting process

Education / Training

Online application system with e-signature

Automatic completeness check of submittal

Environmental Review

Clear CDFW process & timeline

Access to Environmental & other Subject Matter Experts

Community Engagement & Benefits

Community benefits guide

Clear linkage of project's economic & environmental benefits

Other Permitting Process Support

State and local contact lists for planners & developers

Fact sheets for general public & media

Best practices forum for planners

Interagency facilitation & "ombudsman"

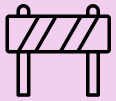
3 Post-Permit Application

Building Permits & Construction

Early transparency of requirements (i.e. during siting)

Code change notifications throughout project

Final Inspection & Commission



De-Commissioning

Summary of Survey Findings: Ordinances and Restrictions

Model ordinances

Survey & Interview Findings

Model ordinances and **access to technical experts** ranked among the **top 5 most helpful resources** to Local Permitting Authorities in the survey

81% of developers indicated that restrictive ordinances post a **moderate to significant barrier**

Model ordinances would **be particularly helpful for BESS** given evolving technical guidance around fire safety

Incorporation into Playbook & Toolkit

➔The Toolkit will include a **Model Ordinance and Guide** for:

- Solar
- Wind
- BESS

➔The Model Ordinance and Guide will include additional background information on each component of the Model Ordinance

Questions? Use the QR code or https://tinyurl.com/energy-unit

Summary of Findings: Pre-application

Pre-application checklist and resources

Survey & Interview Findings

Manuals, guides, & checklists ranked among the **top 5 most helpful resources** by both Local Permitting Authorities and developers in the survey

Checklists would particularly aid Local Permitting Authorities with less renewable experience

Checklists may vary by county

Incorporation into Playbook & Toolkit

➔The Toolkit will include a **Pre-application checklist**

➔The checklist will indicate where requirements are likely to vary by county

Questions? Use the QR code or https://tinyurl.com/energy-unit

Summary of Findings: Permit Review

Renewable energy guidebook for planners

Survey & Interview Findings

56% of Local Permitting Authorities indicated that limited **staff experience** with renewable energy poses a **moderate to significant barrier**

Local Permitting Authorities are interested in developing **renewable technical knowledge** but have limited bandwidth

Local Permitting Authorities could benefit from **state-issued educational resources**

Incorporation into Playbook & Toolkit

➔The Playbook can help build **technical knowledge** and **address community concerns** around renewables

➔The Toolkit will include a **Renewable Energy Guidebook** geared towards Local Permitting Authority staff

Questions? Use the QR code or https://tinyurl.com/energy-unit

Summary of Findings: Community Engagement & Benefits

Community Benefits Guide

Survey & Interview Findings

- **Community engagement resources** (i.e., guides) ranked among the **top 5 most helpful resources** by both Local Permitting Authorities and Developers in the survey
- **Community engagement** ranked as the **most important consideration** by community-based organizations
- Guidance around **reasonable expectations for community benefits** would be useful for Local Permitting Authorities
- Community benefits should be **flexible to the needs & preferences** of the host community

Incorporation into Playbook & Toolkit

➔The Playbook will advocate for tailoring benefits to the local community (but will not prescribe benefits)

➔The Toolkit will include a **Community Benefits Guide** with information on types of benefits to use as a starting point

Questions? Use the QR code or https://tinyurl.com/energy-unit

Summary of Findings: Other Permitting Process Support

Renewable energy fact sheets for general public & media understanding

Survey & Interview Findings

Information to share with the public was the **#5** most beneficial resource selected by Local Permitting Authorities

Educational resources from a trusted source would promote **public acceptance** of local siting of projects

Particularly true for **BESS** given **fire safety concerns, rapid evolution** of the technology, and **misinformation**

Incorporation into Playbook & Toolkit

➔The Toolkit will include a **fact sheet** tailored for the public for each technology:

- Solar
- Wind
- BESS

Questions? Use the QR code or https://tinyurl.com/energy-unit

Q&A

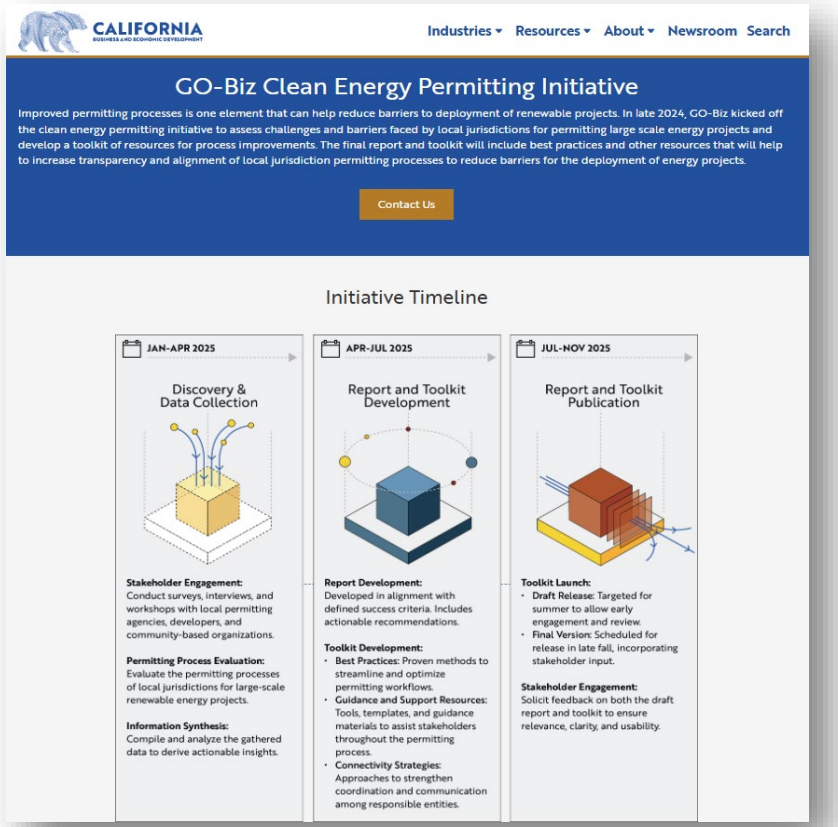
Please visit:
https://tinyurl.com/energy-unit

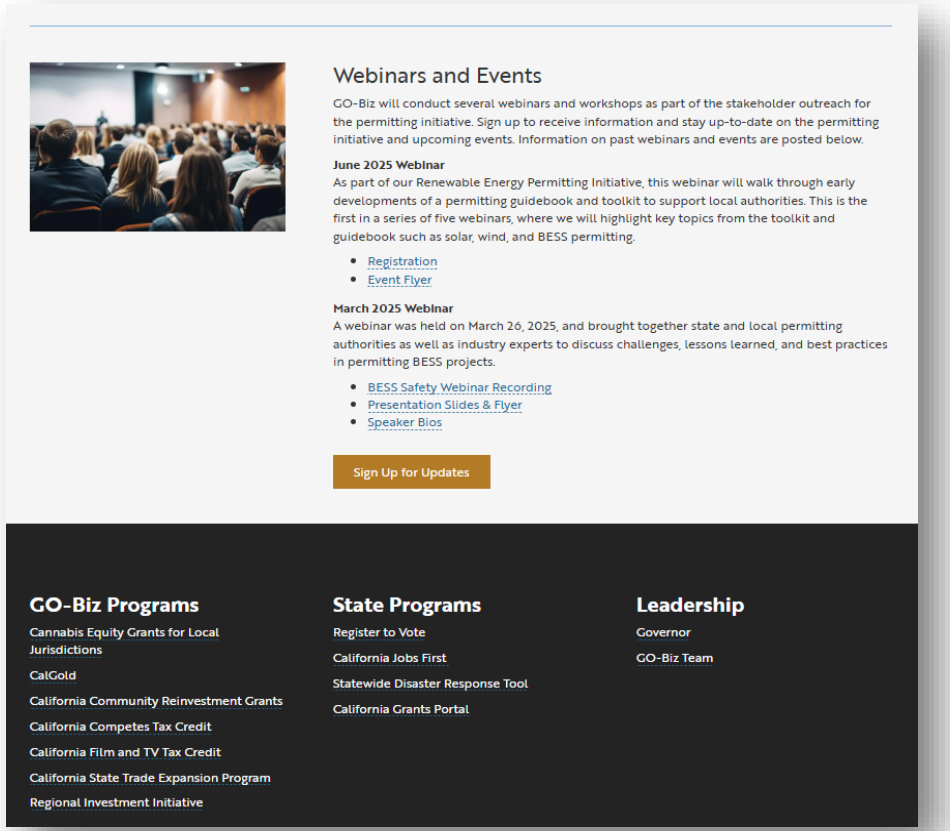
GO-Biz Website & Playbook First Look

GO-Biz Energy Unit Website

Clean Energy Permitting Initiative

The Playbook and Toolkit will be posted here: https://business.ca.gov > Industries > Clean Economy > Solar > GO-Biz Clean Energy Permitting Initiative





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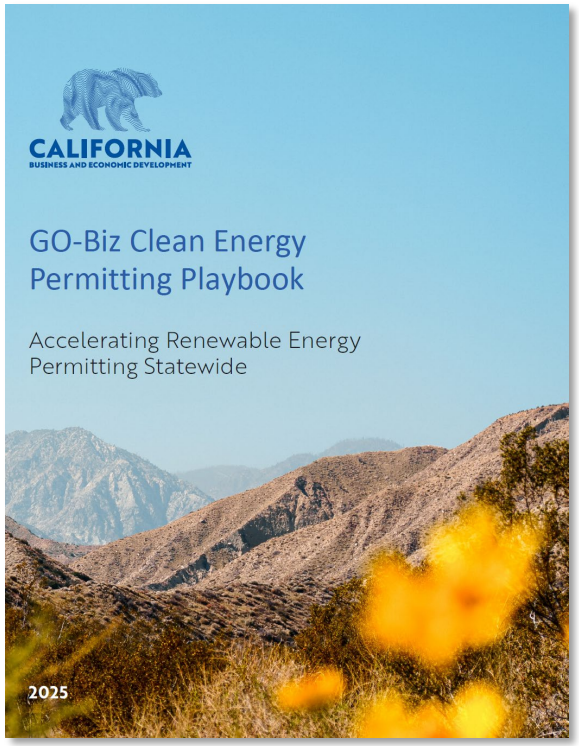
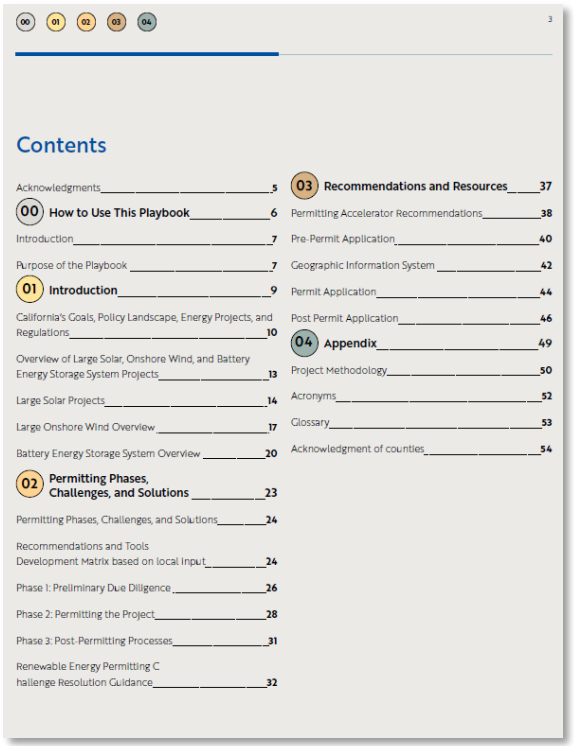
Future Website Content

Draft Playbook First Look

In Progress





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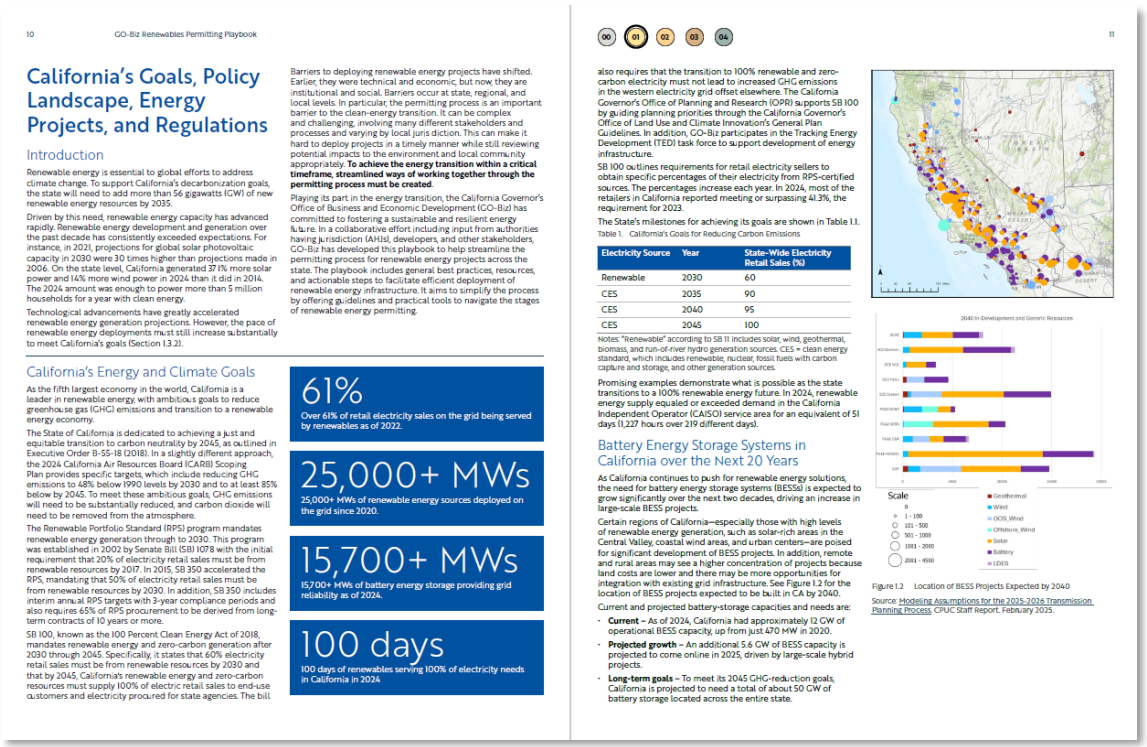

10 GO-Biz Renewables Permitting Playbook

California's Goals, Policy Landscape, Energy Projects, and Regulations

Introduction

Renewable energy is essential to global efforts to address climate change. To support California's decarbonization goals, the state will need to add more than 56 gigawatts (GW) of new renewable energy resources by 2035.

Driven by this need, renewable energy capacity has advanced rapidly. Renewable energy development and generation over the past decade has consistently exceeded expectations. For instance, in 2021, projections for global solar photovoltaic capacity in 2030 were 30 times higher than projections made in 2006. On the state level, California generated 37 I% more solar power and 14% more wind power in 2024 than it did in 2014. The 2024 amount was enough to power more than 5 million households for a year with clean energy.

Technological advancements have greatly accelerated renewable energy generation projections. However, the pace of renewable energy deployments must still increase substantially to meet California's goals (Section I.3.2).

Barriers to deploying renewable energy projects have shifted. Earlier, they were technical and economic, but now, they are institutional and social. Barriers occur at state, regional, and local levels. In particular, the permitting process is an important barrier to the clean-energy transition. It can be complex and challenging, involving many different stakeholders and processes and varying by local juris diction. This can make it hard to deploy projects in a timely manner while still reviewing potential impacts to the environment and local community appropriately. **To achieve the energy transition within a critical timeframe, streamlined ways of working together through the permitting process must be created.**

Playing its part in the energy transition, the California Governor's Office of Business and Economic Development (GO-Biz) has committed to fostering a sustainable and resilient energy future. In a collaborative effort including input from authorities having jurisdiction (AHJs), developers, and other stakeholders, GO-Biz has developed this playbook to help streamline the permitting process for renewable energy projects across the state. The playbook includes general best practices, resources, and actionable steps to facilitate efficient deployment of renewable energy infrastructure. It aims to simplify the process by offering guidelines and practical tools to navigate the stages of renewable energy permitting.

California's Energy and Climate Goals

As the fifth largest economy in the world, California is a leader in renewable energy, with ambitious goals to reduce greenhouse gas (GHG) emissions and transition to a renewable energy economy.

The State of California is dedicated to achieving a just and equitable transition to carbon neutrality by 2045, as outlined in Executive Order B-55-18 (2018). In a slightly different approach, the 2024 California Air Resources Board (CARB) Scoping Plan provides specific targets, which include reducing GHG emissions to 48% below 1990 levels by 2030 and to at least 85% below by 2045. To meet these ambitious goals, GHG emissions will need to be substantially reduced, and carbon dioxide will need to be removed from the atmosphere.

The Renewable Portfolio Standard (RPS) program mandates renewable energy generation through to 2030. This program was established in 2002 by Senate Bill (SB) 1078 with the initial requirement that 20% of electricity retail sales must be from renewable resources by 2017. In 2015, SB 350 accelerated the RPS, mandating that 50% of electricity retail sales must be from renewable resources by 2030. In addition, SB 350 includes interim annual RPS targets with 3-year compliance periods and also requires 65% of RPS procurement to be derived from long-term contracts of 10 years or more.

SB 100, known as the 100 Percent Clean Energy Act of 2018, mandates renewable energy and zero-carbon generation after 2030 through 2045. Specifically, it states that 60% electricity retail sales must be from renewable resources by 2030 and that by 2045, California's renewable energy and zero-carbon resources must supply 100% of electric retail sales to end-use customers and electricity procured for state agencies. The bill

61%
Over 61% of retail electricity sales on the grid being served by renewables as of 2022.

25,000+ MWs
25,000+ MWs of renewable energy sources deployed on the grid since 2020.

15,700+ MWs
15,700+ MWs of battery energy storage providing grid reliability as of 2024.

100 days
100 days of renewables serving 100% of electricity needs in California in 2024

00 01 02 03 04 11

also requires that the transition to 100% renewable and zero-carbon electricity must not lead to increased GHG emissions in the western electricity grid offset elsewhere. The California Governor's Office of Planning and Research (OPR) supports SB 100 by guiding planning priorities through the California Governor's Office of Land Use and Climate Innovation's General Plan Guidelines. In addition, GO-Biz participates in the Tracking Energy Development (TED) task force to support development of energy infrastructure.

SB 100 outlines requirements for retail electricity sellers to obtain specific percentages of their electricity from RPS-certified sources. The percentages increase each year. In 2024, most of the retailers in California reported meeting or surpassing 41.3%, the requirement for 2023.

The State's milestones for achieving its goals are shown in Table I.1.

Table 1. California's Goals for Reducing Carbon Emissions

Electricity Source	Year	State-Wide Electricity Retail Sales (%)
Renewable	2030	60
CES	2035	90
CES	2040	95
CES	2045	100

Notes: "Renewable" according to SB 11 includes solar, wind, geothermal, biomass, and run-of-river hydro generation sources. CES = clean energy standard, which includes renewable, nuclear, fossil fuels with carbon capture and storage, and other generation sources.

Promising examples demonstrate what is possible as the state transitions to a 100% renewable energy future. In 2024, renewable energy supply equaled or exceeded demand in the California Independent Operator (CAISO) service area for an equivalent of 51 days (1,227 hours over 219 different days).

Battery Energy Storage Systems in California over the Next 20 Years

As California continues to push for renewable energy solutions, the need for battery energy storage systems (BESSs) is expected to grow significantly over the next two decades, driving an increase in large-scale BESS projects.

Certain regions of California—especially those with high levels of renewable energy generation, such as solar-rich areas in the Central Valley, coastal wind areas, and urban centers—are poised for significant development of BESS projects. In addition, remote and rural areas may see a higher concentration of projects because land costs are lower and there may be more opportunities for integration with existing grid infrastructure. See Figure 1.2 for the location of BESS projects expected to be built in CA by 2040.

Current and projected battery-storage capacities and needs are:

- **Current** – As of 2024, California had approximately 12 GW of operational BESS capacity, up from just 470 MW in 2020.
- **Projected growth** – An additional 5.6 GW of BESS capacity is projected to come online in 2025, driven by large-scale hybrid projects.
- **Long-term goals** – To meet its 2045 GHG-reduction goals, California is projected to need a total of about 50 GW of battery storage located across the entire state.

Figure 1.2 Location of BESS Projects Expected by 2040

Source: Modeling Assumptions for the 2025-2026 Transmission Planning Process, CPUC Staff Report, February 2025.

Questions? Use the QR code or https://tinyurl.com/energy-unit

Q&A

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Next Steps

Stay Connected

Sign up for the GO-Biz Climate & Clean Energy newsletter for updates, webinars and other announcements

https://business.ca.gov/climate-clean-energy-sign-up/

Feedback on the Clean Energy Permitting Initiative & Findings

Send your comments to energyunit@gobiz.ca.gov

Thank you!