<table>
<thead>
<tr>
<th><strong>DOCKETED</strong></th>
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<tr>
<td><strong>Docket Number:</strong></td>
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<tr>
<td><strong>Project Title:</strong></td>
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<td><strong>Document Title:</strong></td>
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<td><strong>Submission Date:</strong></td>
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<td><strong>Docketed Date:</strong></td>
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Joint Agency Workshop:
Next Steps to Plan for Senate Bill 100 Resource Build
Resource Mapping

August 12, 2021
1. Building a Resource Map with Environmental and Land Use Data to Examine SB100 Scenarios
   • Scott Flint, CEC

2. CAISO Comments and 20-Year Outlook Observations on SB100 Portfolios Transmission Plan
   • Jeff Billinton, CAISO

3. CPUC Staff Comments and IRP-related Observations
   • Karolina Maslanka, Nathan Barcic, Jason Ferguson

4. Questions and Answers on the Resource Build Maps and 20-year Transmission Plan
Public Comment Instructions

Rules
• 3 minutes per person
• 1 person per organization

Zoom
• Click “raise hand”

Telephone
• Press *9 to raise hand
• Press *6 to (un)mute

When called upon
• Unmute, spell name, state affiliation, if any

Written Comments:
• Due: Friday, 8/20/21 by 5:00 p.m.
• Docket: 21-SIT-01
• Submit at: https://efiling.energy.ca.gov/EComment/Ecomment.aspx?docketnumber=21-SIT-01

3-MINUTE TIMER
Agency Leadership Opening Remarks

- Karen Douglas, CEC Commissioner
- Siva Gunda, CEC Commissioner
- Darcie Houck, CPUC Commissioner
SB 100 Implementation – Next Steps

• Agency Staff are examining the potential renewable energy builds needed to achieve SB 100 Energy Goals

• Assembling/updating statewide environmental and land use datasets for high level screen potential resource footprints
  ✓ Exclusion areas
  ✓ Biodiversity
  ✓ Essential landscape blocks and connectivity
  ✓ Terrestrial Intactness
  ✓ Agricultural Value

• Reviewing Landscape Planning results
  ✓ RETI
  ✓ DRECP – Development Focus Areas
  ✓ San Joaquin Least Conflict Solar
  ✓ IRP
SB 100 Implementation – Next Steps

• Agency Staff are examining the potential renewable energy builds needed to achieve SB 100 Energy Goals

• Assembling/updating statewide environmental and land use datasets for high level screen potential resource footprints

• Reviewing Landscape Planning results

• Creating a “Starting Point” Resource Map to:
  • inform CAISO 20 Year Transmission Look
  • iterate in ongoing SB 100 implementation work
Planning Activities

- RETI
- DRECP – Development Focus Areas
- San Joaquin Least Conflict Solar
- SB 100 Modeling
- IRP
- Offshore Wind
Planning Activities

- DRECP – Development Focus Areas
  Desert Renewable Energy Conservation Plan | Bureau of Land Management (blm.gov)
  DRECP Gateway (databasin.org)

- San Joaquin Valley Least Conflict Solar
  Mapping Lands to Avoid Conflict for Solar PV in the San Joaquin Valley | Berkeley Law
  SJV Gateway (databasin.org)
Data Sets

✓ Energy Resource GIS Files
✓ Exclusion Areas
✓ Biodiversity
✓ Essential landscape blocks and connectivity
✓ Terrestrial Intactness
✓ Agricultural Value
✓ Other Land Use Data
Data Sources

Biodiversity –
Areas of Conservation Emphasis (ACE III), California Department of Fish and Game [Areas of Conservation Emphasis (ACE) (ca.gov)]

Habitat Connectivity –
CA Essential Landscape Connectivity, CDFW and CALTRANS [California Essential Habitat Connectivity Project]

Terrestrial Landscape Intactness – Conservation Biology Institute
[Landscape Intactness (1 km), California | Data Basin]

Land Use – Conservation Biology Institute
[California Agricultural Value (2018) | Data Basin]
Methods

• Identify Energy Resources from Existing Energy Resource Data Sets
• Ensure land use data sets are included as exclusion or areas identified for renewable energy
• Overlay and join environmental datasets in GIS to make calculations and summarize data
• Use the Agricultural Value layer and other pertinent layers as overlays to evaluate additional specific implications (e.g., important bird areas)
• Clip to identified energy resource areas; calculate acres and numeric values for environmental implications
• Summarize energy resources by transmission zone
Methods

• Estimate potential renewable energy development footprint by technology

• Identify coarse geographic locations of resources within transmission zones used in the RESOLVE modeling

• Screen with identified energy datasets and environmental and land use datasets

• Calculate available acreage of potential renewable energy resource by transmission zone and percent build

• Review all elements of the SB 100 Scenarios
Most Suitable for Solar
Wind Resources

- Wind resources areas are small and localized
- Some areas have multiple environmental implications
- We can use the existing data to drill down and identify environmental implication “drivers”
# SB 100 No Combustion Scenario

## SB 100 No Combustion Scenario

<table>
<thead>
<tr>
<th>Load Coverage</th>
<th>Study</th>
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<tbody>
<tr>
<td>Demand Scenario</td>
<td>High Electrification</td>
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<tr>
<td>Resource Options</td>
<td>All Combustion Retired by 2045 and No Combustion Candidate Resources</td>
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</table>

<table>
<thead>
<tr>
<th>Selected Resource Summary</th>
<th>Unit</th>
<th>2027</th>
<th>2030</th>
<th>2040</th>
<th>2045</th>
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<tbody>
<tr>
<td>Gas</td>
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<td>-</td>
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<tr>
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<tr>
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<td>Gas Capacity Not Retained</td>
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<td>5,451</td>
<td>11,215</td>
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## SB 100 No Combustion Scenario

<table>
<thead>
<tr>
<th>Buildout Type</th>
<th>2027 MW</th>
<th>2027 ACRES</th>
<th>2030 MW</th>
<th>2030 ACRES</th>
<th>2040 MW</th>
<th>2040 ACRES</th>
<th>2045 MW</th>
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<tbody>
<tr>
<td>Geothermal</td>
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<td>-</td>
<td>-</td>
<td>-</td>
<td>2,300</td>
<td>11,501</td>
<td>2,332</td>
<td>11,661</td>
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<tr>
<td>Wind</td>
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<td>3,866</td>
<td>154,640</td>
<td>4,779</td>
<td>191,157</td>
<td>5,096</td>
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<tr>
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<td>102,998</td>
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<td>345,214</td>
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<td><strong>TOTAL</strong></td>
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<td></td>
<td></td>
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<td>813,319</td>
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</table>
Modeled SB 100 Potential Solar Buildout – Regional Look

Sacramento River Tx Zone
SB 100 No Combustion 2040
23,484 MW – 164,388 Acres – 28% of Available Suitable Area

Westlands Tx Zone
SB 100 No Combustion 2040
1,423 MW – 9,961 Acres – 3% of Available Suitable Area

Tehachapi Tx Zone
SB 100 No Combustion 2040
4,081 MW – 33,067 Acres – 18% of Available Suitable Area

Carrizo Tx Zone
SB 100 No Combustion 2040
9,601 MW – 67,207 Acres – 44% of Available Suitable Area

Kern Greater Carrizo Tx Zone
SB 100 No Combustion 2040
8,329 MW – 58,303 Acres – 18% of Available Suitable Area
Modeled SB 100 Potential Solar Buildout – Regional Look

Westlands Tx Zone
SB 100 No Combustion 2040
1,423 MW – 9,961 Acres – 3% of Available Suitable Area

Solar Resource Acres Most Suitable – 1,251,444 (Light Blue)
SB 100 Implementation – Next Steps

• Assembling/updating statewide environmental and land use datasets for high level screen potential resource footprints
• Discussing additional elements of the SB 100 scenario outputs and considering possible adjustments for CAISO 20 year transmission look
• Examining a variety of other scenarios and potential builds to facilitate continued the environmental and land use discussion
• Review and incorporate comments from this staff workshop
• Deliver inputs and resource map to CAISO at the end of August
Thank You!
California Public Utilities Commission
Karolina Maslanka
Questions and Answers:
Resource Build Maps and 20-year Transmission Plan
Public Comment

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3-MINUTE TIMER
Thank You!