Executive Committee Meeting

October 12, 2022
Agenda

• Call to Order / Roll Call

• Public Comment (for items not on the Agenda)

• Action to set the Agenda and Approve Consent Items
  - Public Comment

• Regular Agenda

• Committee Members Reports

• Adjourn
CEO Report

Item 4
Staffing Updates

Open Positions:
- Director of Power Resources
- Strategic Accounts Manager
- Marketing Communications Specialist / Senior Specialist
Other Updates

• CalCCA Board Retreat Oct 13-14

• Quarterly All-Staff In-Person Meeting on October 18

• Noted in Friday newsletter - PG&E formation of Pacific Generation – responses due to CPUC on Oct 31
Debrief of the September 22, 2022 Board Retreat (Discussion)

Item 5
Preview of 2022-2023 CPUC Integrated Resource Plan Results

Item 6
Sara Maatta
Senior Analyst, Power Resources
(Preview of Board Recommendation)

Approve the results of the 2022-2023 Integrated Resource Plan analysis and submission of results as presented by staff, or in a form substantially similar to that presented by staff, and delegate authority to the CEO to prepare and submit the final narrative and data templates to the CPUC by November 1, 2022
Agenda

1. Background
2. 2022-2023 IRP Filing Requirements
3. How Does the IRP Differ from Our 24x7 Analysis and Planning?
4. Community Outreach
5. Modeling Approach
6. Modeling Results
7. Submission Requirements
8. Recommendation
Background
The Integrated Resource Plan is the “umbrella” planning proceeding to consider all of CPUC’s electric procurement policies and programs and ensure California electric supply is:

- Safe
- Reliable
- Affordable
Regulatory Background: GHG Emissions

• The IRP implements SB350 (2015) and SB100 (2018)
• SB 350 increased the Renewable Portfolio Standard (RPS) from 33% by 2020 to 50% by 2030
• SB 100 mandated a zero-carbon goal for all retail electricity by 2045, and accelerated the RPS to 50% by 2025 and 60% by 2030

Regulatory Background: GHG Emissions

- 2022 IRP is using state-wide planning targets of 30MMT and 25MMT in 2035\(^1\)
  - Joint Agency Report on SB100 (2021)\(^1\) indicates that ~15MMT remain in 2045 due to biofuels and emissions outside the scope of SB100
  - Peninsula Clean Energy has opposed using the 15 MMT target in 2045: we support a 5 MMT target

<table>
<thead>
<tr>
<th>Scenario</th>
<th>2030 State-wide Emissions goal</th>
<th>2035 State-wide Emissions Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>30 MMT Scenario</td>
<td>38 MMT</td>
<td>30 MMT</td>
</tr>
<tr>
<td>25 MMT Scenario</td>
<td>30 MMT</td>
<td>25 MMT</td>
</tr>
</tbody>
</table>

1. https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M451/K412/451412947.PDF
Peninsula Clean Energy Assigned GHG Emissions Targets

- Peninsula Clean Energy’s share of GHG Emissions targets

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>30 MMT</td>
<td>38 MMT</td>
<td>30 MMT</td>
<td>0.530 MMT</td>
<td>0.417 MMT</td>
</tr>
<tr>
<td>25 MMT</td>
<td>30 MMT</td>
<td>25 MMT</td>
<td>0.400 MMT</td>
<td>0.333 MMT</td>
</tr>
</tbody>
</table>

A single portfolio may meet both requirements, if it meets or exceeds the 25 MMT scenario targets.
Timing of the CPUC IRP Process

• The CPUC IRP Process is a 2-year process
  o First year: LSEs submit IRPs to CPUC
  o Second year: CPUC aggregates individual IRPs and conducts production cost modeling and a reliability assessment to develop a Preferred System Plan
• Initial reporting year was 2018, the second reporting year was 2020
• Reporting for the current cycle (2022-2023) is due November 1, 2022
CPUC Preferred System Plan 2021

• Identifies the portfolio of resources required for all CPUC-regulated LSEs across California to
  o Meet GHG reduction goals
  o At least cost
  o While ensuring electric service reliability
CPUC Preferred System Plan 2021

CPUC 2021 Preferred System Plan for the State of California

Capacity (MW)

- 120,000
- 100,000
- 80,000
- 60,000
- 40,000
- 20,000
- 0

2024  2026  2030  2035

- Storage
- Pumped Storage
- Shed DR
- Hybrid Solar + Storage
- Solar_PV
- Small_Hydro
- Offshore_Wind
- Onshore_Wind
- Geothermal
- Biomass
- Biogas
- Nuclear
- Large Hydro
2022-2023 Filing Requirements, cont.

• Conforming portfolios:
  o Use the CPUC-assigned load and peak load forecasts
    o May use custom load shape assumptions as long as the total annual volume equals the assigned volume
  o Meet or exceed the emissions targets
  o Meet or exceed the LSE’s reliability need in all years of the planning horizon
  o Use assumptions consistent with CPUC’s 2021 Preferred System Plan and RESOLVE modeling
    o May use custom renewable profiles and storage dispatch assumptions
    o May use custom resource cost assumptions
  o All filing documents must be complete
  o Plans must be consistent with all state goals
How Does the IRP Differ from Our 24x7 Analysis and Planning?
## CPUC IRP vs 24x7 Analysis

- The CPUC IRP process requires us to use specific assumptions that we do not think are realistic for our service territory or our portfolio.
- The CPUC IRP requires analysis of specific years (2024, 2026, 2030, and 2035).
- We believe our 24x7 results more accurately reflect our portfolio planning, but the IRP is generally indicative of our planning.

<table>
<thead>
<tr>
<th>Modeling Assumption</th>
<th>2022-2023 CPUC IRP Required Assumption</th>
<th>24x7 Analysis Assumption</th>
</tr>
</thead>
<tbody>
<tr>
<td>Load Forecast</td>
<td>CPUC-assigned volumes</td>
<td>Internally-developed forecast volumes</td>
</tr>
<tr>
<td>EV Adoption</td>
<td>Moderate</td>
<td>High</td>
</tr>
<tr>
<td>BTM Solar Adoption</td>
<td>High</td>
<td>Low to Moderate</td>
</tr>
<tr>
<td>Building Electrification</td>
<td>Low</td>
<td>Not explicitly modeled</td>
</tr>
<tr>
<td>Resource Adequacy Rules</td>
<td>Customized rules developed for the IRP process</td>
<td>Current RA market rules, with forecast for future years</td>
</tr>
<tr>
<td>Planning Year</td>
<td>2024, 2026, 2030, and 2035</td>
<td>2025 and 2026-2028</td>
</tr>
<tr>
<td>Resources Considered</td>
<td>Offers in recent RFOs and generic resources</td>
<td>Offers in recent RFOs</td>
</tr>
</tbody>
</table>
Community Outreach
Community Outreach

• Citizens Advisory Committee, July 2022
  o Discussed filing requirements and modeling approach
• Executive Committee, October 12, 2022
  o Reviewed final IRP results
• Citizens Advisory Committee, October 13, 2022
  o Reviewed final IRP results and solicited feedback from the community
Modeling Approach
Peninsula Clean Energy Modeling Approach

• Develop a single conforming portfolio to meet both 30MMT and 25MMT scenarios
  o Target 100% renewable on an annual basis
  o Target our 24x7 renewable goal at 95% hourly on a planning basis
    o More conservative implementation than the 99% hourly recommendation
    o Assume 75% resale of excess RA and RECs

• Perform all modeling, portfolio selection, and data template preparation internally
Peninsula Clean Energy Modeling Approach, cont.

• Step 1: Deterministic Resource Selection in the MATCH model
  o Select the cost-optimal portfolio that meets our goals for each year
  o Deterministic analysis that assumes a single set of assumptions, and
determines a single outcome

• Step 2: Stochastic Portfolio Analysis in PowerSimm
  o Evaluate the performance of the selected portfolios under a variety of possible
  weather patterns and market prices
  o Stochastic analysis runs many simulations with varied inputs and provides
  estimates on the range of likely outcomes
Modeling Results
Peninsula Clean Energy 2022-2023 IRP Preferred Portfolio

Peninsula Clean Energy 2022-2023 IRP Preferred Portfolio (Current Portfolio + Additional Procurement)

<table>
<thead>
<tr>
<th></th>
<th>Current Portfolio</th>
<th>IRP_2024_Run</th>
<th>IRP_2026_Run</th>
<th>IRP_2030_Run</th>
<th>IRP_2035_Run</th>
</tr>
</thead>
<tbody>
<tr>
<td>Storage</td>
<td>116</td>
<td>202</td>
<td>321</td>
<td>592</td>
<td>646</td>
</tr>
<tr>
<td>Solar_Thermal</td>
<td></td>
<td></td>
<td></td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Solar_PV</td>
<td>502</td>
<td>502</td>
<td>691</td>
<td>816</td>
<td>916</td>
</tr>
<tr>
<td>Onshore_Wind</td>
<td>320</td>
<td>386</td>
<td>700</td>
<td>603</td>
<td>429</td>
</tr>
<tr>
<td>Offshore_Wind</td>
<td></td>
<td></td>
<td></td>
<td>-</td>
<td>288</td>
</tr>
<tr>
<td>Small_Hydro</td>
<td>12</td>
<td>16</td>
<td>16</td>
<td>16</td>
<td>11</td>
</tr>
<tr>
<td>Geothermal</td>
<td>61</td>
<td>61</td>
<td>84</td>
<td>84</td>
<td>49</td>
</tr>
</tbody>
</table>

Legend:
- Storage
- Solar_Thermal
- Solar_PV
- Onshore_Wind
- Offshore_Wind
- Small_Hydro
- Geothermal
GHG Reduction Metrics

• Peninsula Clean Energy’s Preferred Portfolio for the 2022-2023 IRP performs better than our share of state-wide emissions targets in both the 30 MMT and the 25 MMT Scenarios.

<table>
<thead>
<tr>
<th></th>
<th>2030 Peninsula Clean Energy Share of Emissions goal</th>
<th>2035 Peninsula Clean Energy Share of Emissions Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>30 MMT Scenario Goal</td>
<td>0.530 MMT</td>
<td>0.417 MMT</td>
</tr>
<tr>
<td>25 MMT Scenario Goal</td>
<td>0.400 MMT</td>
<td>0.333 MMT</td>
</tr>
<tr>
<td>Peninsula Clean Energy Selected Portfolio</td>
<td>0.053 MMT</td>
<td>0.003 MMT</td>
</tr>
</tbody>
</table>

A single portfolio may meet both requirements, if it meets or exceeds the 25 MMT scenario targets.

Preliminary Results
Reliability Metrics: Peak Load (Confidential)

• Peninsula Clean Energy meets its peak load needs

<table>
<thead>
<tr>
<th></th>
<th>2024</th>
<th>2026</th>
<th>2030</th>
<th>2035</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assigned Peak Load</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NQC of Selected Portfolio</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reliability Evaluation</td>
<td>Meets Peak Load Needs</td>
<td>Meets Peak Load Needs</td>
<td>Meets Peak Load Needs</td>
<td>Meets Peak Load Needs</td>
</tr>
</tbody>
</table>
Reliability Metrics: 24-hr load vs supply

- This is a voluntary analysis performed by Peninsula Clean Energy to inform our planning for our 24x7 analysis and the new 24-hr slice of day RA framework

<table>
<thead>
<tr>
<th>Hour</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>2035 Net System Power (% of load)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Month</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Preliminary Results</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Comparison to 2020 IRP Preferred Portfolio

Comparison of 2020 and 2022 IRP Results

- Storage
- Solar_Thermal
- Solar_PV
- Small_Hydro
- Onshore_Wind
- Offshore_Wind
- Geothermal

Capacity (MW)

2024 2026 2026 2030 2030 2035 2035
Comparison to Peninsula Clean Energy’s Load Share of 2021 Preferred System Plan

Comparison of 2021 PSP and 2022 IRP Results

- Storage
- Pumped Storage
- Shed DR
- Hybrid Solar + Storage
- Solar_Thermal
- Solar_PV
- Small_Hydro
- Onshore_Wind
- Offshore_Wind
- Geothermal
- Biomass
- Biogas
- Nuclear
- Large Hydro

<table>
<thead>
<tr>
<th>Year</th>
<th>2021 PSP</th>
<th>2022 IRP</th>
<th>2021 PSP</th>
<th>2022 IRP</th>
<th>2021 PSP</th>
<th>2022 IRP</th>
<th>2021 PSP</th>
<th>2022 IRP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year</td>
<td>2024</td>
<td>2026</td>
<td>2026</td>
<td>2030</td>
<td>2035</td>
<td>2035</td>
<td>2035</td>
<td>2035</td>
</tr>
</tbody>
</table>
Submission Requirements

• Required submission:
  o Narrative template
  o Resource Data Template (RDT)
  o Clean Power System Calculator (CSP)

• Confidentiality
  o Market sensitive information will remain confidential
  o We will submit confidential and public (redacted) versions of all documents

• Public Access
  o We will post public (redacted) versions of our entire submission on our website
Recommendation
Approve the results of the 2022-2023 Integrated Resource Plan analysis and submission of results as presented by staff, or in a form substantially similar to that presented by staff, and delegate authority to the CEO to prepare and submit the final narrative and data templates to the CPUC by November 1, 2022.
Executive Committee Feedback

• Suggestions for level of detail for board presentation?
Update on GovPV Solar + Storage Program

Item 7
October 12, 2022
Agenda

1. Overall update on pilot progress
2. Inflation Reduction Act (IRA) & “Direct Pay”
3. Engineer, Procure, Construct (EPC) contracting update
4. Overview of EPC agreement and coming Board approval request
5. Overview of Customer Power Purchase Agreement (PPA)
6. Project Timeline
Overall Update

• Completed RFP for equipment procurement, installation, and maintenance
• Continuing PPA negotiations with 13 municipalities with objective of establishing one standard PPA
• Determined preferred contracting approach and developed financial model to determine customer PPA pricing
• Exploring "Direct Pay" approach presented by the Inflation Reduction Act (IRA) to receive tax credits directly
Inflation Reduction Act (IRA) and Direct Pay

• Increases federal Investment Tax Credit (ITC) to 30% (from 26%) and removes stepdown in 2023

• Allows for ‘Direct Pay’ – qualifying tax-exempt organizations can directly claim the ITC without requiring a tax equity partner
  o Potentially eliminates need for a tax equity partner (and splitting the ITC with that partner)
  o Improves the PPA price that PCE can offer customers if PCE finances systems directly
  o Conducted due diligence with external federal tax counsel to confirm that PCE does qualify

• PCE will proceed with the Direct Pay option
Installation Procurement Update

• **Scope of contractor role**
  - Procurement of equipment
  - Installation and commissioning
  - Operations and Maintenance (O&M)
  - Equipment warranties and warranty service

• **Selected Intermountain Electric Company (IME) in competitive RFP**
  - Union labor
  - Local, headquartered in PCE territory (San Carlos)
  - Excellent reputation as confirmed by multiple reference checks

• **Currently negotiating EPC contract**
  - EPC contract form created by PCE
  - No obstacles of concern identified at this time
EPC Contract – Key Details

- Pricing received for solar systems which we expect to be viable for project
  - Slightly higher pricing for American-made vs foreign-made modules
  - Battery pricing is under review. Requires more iteration with customers
  - Will move forward with solar projects while continuing to explore battery viability
- PCE to own and operate resources
- Milestone based payments through Commercial Operation Date (COD)
- Warranties: 25 years modules, 15 years inverters, 1 year labor
- Operations and Maintenance (O&M) contract
- Equipment performance (solar production) guarantee
- Negotiations underway; plan to present for approval at November Board meeting, expect slight additional budget authorization for contingencies
Customer PPA Update

• One PPA contract for all cities
• Sent PPA draft (Terms and Conditions only) to all 13 jurisdictions in July. Received all comments by end of August.
• Created new unified draft to return – currently under internal review
• When costs are finalized, we will provide PPA pricing for solar systems.
  o At that point, cities make go/no-go decision based on if they determine there are net financial and/or community benefits in moving forward.
• Battery projects (4 sites with batteries) will need some further iteration with customers
  o Will proceed with solar first. Battery systems can follow and would be an addendum to the Customer PPA.
Key Customer PPA Details

• $/kWh price with 0% escalation
• 20-year initial term with option for up to 2 additional 5-year terms or customer buyout at end of initial term
• Portfolio-based price determination with facility-specific adjustments to account for additional cost of carport solar
• PPA rate will provide immediate savings; benefit increases if utility rates increase (PPA rate will stay flat)
• Performance guarantee (matched to EPC performance guarantee)
• PCE provides O&M
### Projected Timeline

<table>
<thead>
<tr>
<th>Date</th>
<th>Project Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>October 2022</td>
<td>Interconnection applications submitted to PG&amp;E</td>
</tr>
<tr>
<td>Nov - Dec 2022</td>
<td>Execution of EPC contract &amp; execution of all PPAs with cities that are moving forward</td>
</tr>
<tr>
<td>Dec – May 2023</td>
<td>EPC site walkdowns, design diligence, permit applications</td>
</tr>
<tr>
<td>Dec – Apr 2023</td>
<td>Iteration with customers on batteries (4 sites) and, if moving forward, addendum to PPA agreement</td>
</tr>
<tr>
<td>May 2023</td>
<td>Completion of EPC walkdowns, final site design packages, and receipt of required permits</td>
</tr>
<tr>
<td>September 2023</td>
<td>Equipment procured and construction started</td>
</tr>
<tr>
<td>December 2023</td>
<td>Target completion at all sites</td>
</tr>
</tbody>
</table>

- We are most concerned about PG&E interconnection process and potential for delays
  - Process is a “black box” and PG&E can easily delay regardless of any published timelines
  - Expect a rush of applications from others also looking to get ahead of NEM3
Discussion on Return to In-Person Meetings (Discussion)

Item 8
Committee Members’ Reports

Item 9