Agenda

• Call to order / Roll Call

• Public Comment

• Action to set the agenda and approve consent items
Regular Agenda

1. Chair Report (Discussion)
Regular Agenda

2. CEO Report (Discussion)
Rate Projections for 2021

• PCIA Increase
  • PUBA Trigger
    • The "trigger" of the cap-and-trigger decision
    • PG&E zero out of 2020 PUBA balance across 12 months of 2021
  • Cap
    • 0.5 cents/kWh
    • Increase of 38-39% across all each customer class

• PG&E Generation Rates
  • 8.1% decrease
**Rate Projections for 2021 ($/kWh)**

<table>
<thead>
<tr>
<th>Customer Class</th>
<th>Present Gen Rates</th>
<th>Present PCIA Rates</th>
<th>Current PCE rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>0.1175</td>
<td>0.0334</td>
<td>0.0783</td>
</tr>
<tr>
<td>Small Commercial</td>
<td>0.1137</td>
<td>0.0320</td>
<td>0.0760</td>
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<tr>
<td>Medium Commercial</td>
<td>0.1209</td>
<td>0.0345</td>
<td>0.0804</td>
</tr>
<tr>
<td>Large Commercial (E-19)</td>
<td>0.1114</td>
<td>0.0316</td>
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<tr>
<td>Streetlight</td>
<td>0.0936</td>
<td>0.0266</td>
<td>0.0623</td>
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<tr>
<td>Standby</td>
<td>0.0847</td>
<td>0.0241</td>
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<td>Agriculture</td>
<td>0.1052</td>
<td>0.0299</td>
<td>0.0701</td>
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<tr>
<td>E-20 T</td>
<td>0.0957</td>
<td>0.0271</td>
<td>0.0638</td>
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<tr>
<td>E-20 P</td>
<td>0.1025</td>
<td>0.0292</td>
<td>0.0681</td>
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<tr>
<td>E-20 S</td>
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<td>0.0304</td>
<td>0.0721</td>
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<tr>
<td><strong>Total System</strong></td>
<td><strong>0.1118</strong></td>
<td><strong>0.0318</strong></td>
<td><strong>0.0745</strong></td>
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</table>

<table>
<thead>
<tr>
<th>Customer Class</th>
<th>August Supp Gen Rates</th>
<th>August Supp PCIA Rates</th>
<th>Projected PCE rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>0.1080</td>
<td>0.0461</td>
<td>0.0565</td>
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<tr>
<td>Small Commercial</td>
<td>0.1045</td>
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<td>Medium Commercial</td>
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<td>Large Commercial (E-19)</td>
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<td>Streetlight</td>
<td>0.0861</td>
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<tr>
<td>Standby</td>
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<td>0.0408</td>
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<tr>
<td>Agriculture</td>
<td>0.0967</td>
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<td>0.0506</td>
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<td>E-20 T</td>
<td>0.0879</td>
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</tr>
<tr>
<td>E-20 P</td>
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</tr>
<tr>
<td>E-20 S</td>
<td>0.0992</td>
<td>0.0423</td>
<td>0.0520</td>
</tr>
<tr>
<td><strong>Total System</strong></td>
<td><strong>0.1028</strong></td>
<td><strong>0.0439</strong></td>
<td><strong>0.05377</strong></td>
</tr>
</tbody>
</table>

Reduction of $0.0207 per kWh
- Does not include FFS reduction
- PCIA ~ 43% of PG&E bundled generation rate
Root Cause Analysis of August 14-15: Extreme Heat Storm

Figure ES.1: August Temperatures 1985 - 2020

(Source: CEC Weather Data/CEC Analysis)
Root Cause Analysis of August 14-15: Demand Peak and Net Demand Peak

Figure ES.2: Demand and Net Demand for August 14 and 15

On August 14 the Stage 3 Emergency was declared at 6:38 pm, right before the net demand peak at 6:51 pm. Similarly, on August 15 the Stage 3 Emergency was called at 6:28 pm, just after the net demand peak at 6:26 pm.
Regular Agenda

3. Super JPA – Long-Duration Energy Storage (Discussion)
Long Duration Storage Procurement Efforts and Formation of a Super Joint Powers Agency

PCE Executive Committee Discussion
October 13, 2020
Purpose

• Overview of Super Joint Powers Agency
  • Potential Members
  • Benefits and Risks
  • Super JPA Structure
  • JPA Agreement Schedule

• Long-Duration Energy Storage Goals and Procurement

• Timeline
  • Super JPA
  • LDES Procurement
Business Need for Long-Duration Energy Storage (LDES) & Joint Procurement Super-JPA

Long Duration Energy Storage

- California Climate Goals require a clean electric grid & large-scale procurement of renewable power
- Keeping the lights on with high penetrations of renewable power requires energy storage
- CPUC has IRP requirements for Long Duration Energy Storage (LDES)
- Bills in 2020 session have included LDES
- Rolling blackouts result in more interest in storage
- To meet our PCE goal of 100% renewable on a 24/7 basis, we will likely need LDES

Joint Procurement Super JPA

- CCAs are proactive in purchasing cleaner power and are also focused on affordability & reliability
- LDES investments may be too large for any one CCA to successfully complete
- LDES is technically complex and has associated financial risk
- Joint procurement de-risks technology and financial risk
9 CCA’s are taking steps to form a joint procurement Super-JPA
Super JPA Highlights

Objective: Develop a cost-effective, risk-minimized, CCA-controlled structure to develop or acquire necessary resources exceeding the procurement needs of a single CCA.

Structure: Joint Powers Authority composed of CCAs; Enabling Agreement with Opt-in Project Participation

Target Projects: Stand-alone storage and renewable resources exceeding individual CCA demand
  • Long Duration Energy Storage – first project

JPA Timeline: Form JPA by end of 2020 and not later than early 2021
Super JPA - Joint Procurement Benefits

- Economies of Scale
- Enhanced Negotiating Power
- Shared Risk – execution, development and performance
- Potential for Shared Financing – prepay/bonds
- Strategic value in demonstrating CCA self-procurement, reliability contributions (if successful)
Super-JPA - Joint Procurement Risks

• **Joint Procurement allows for sharing of risk but does not eliminate underlying risk**

  • Project Development and Performance Risk
  • Regulatory, Policy and Market Risk
  • Potential for establishment and/or expansion of centralized procurement entity or mandated procurement

• **Sharing risk with other members may increase risk for individual members due to step-up and/or other contract provisions**
Proposed Super JPA Structure

- Enabling Agreement – allows for CCAs to potentially participate in projects – no obligation

- Super JPA intended to be the direct party to any contract with storage or project developers
  - We will learn details on this as we go through the solicitation process
  - CCAs that chose to participate will sign Project Participation Agreement(s) with Super JPA

**First Joint Procurement Project Target:**
Long Duration Storage Agreement by September 2021
Super JPA Agreement Schedule

• First Draft of JPA Enabling Agreement circulated to potential JPA member attorneys in late September
• Collaborative revisions are ongoing
• Draft JPA Agreement is scheduled for completion by the end of October 2020
• Potential Members are targeting November-December timeframe for individual governing body consideration and approval
  • Some potential JPA members may take a bit longer for local approval processes
Long Duration Energy Storage (“LDES”)

• LDES are energy storage technologies with 8-hour minimum discharge duration

• Technologies – lithium ion, chemical flow batteries, gravity, pumped hydro, compressed air, etc.

• Can be grid-charged – not renewable

• Used to integrate renewables onto the grid and support reliability

**CPUC’s Integrated Resource Plan (IRP) - LDES needed to meet GHG reduction goals**
LDES Procurement Goals

• Target up to 500 MW of LDS from one or more projects with on-line date no later than 2026
  • Notional value $2 billion

• Assess Project Viability, Uncertainty & Risk

• LDS should not be procured for compliance alone – must have market and/or strategic value and be cost-effective
  • Cost, Energy value, Resource Adequacy, Ancillary Services
LDES Procurement Efforts

• June 2020
  • Multi-CCA Request for Information (RFI)
  • 13 CCAs Participated
  • Over 58 Projects submitted

• Sep-Oct 2020
  • Stakeholder Outreach – CPUC, CAISO & Legislature

• October 2020
  • Multi-CCA (8) Request for Offers/Proposal
Super JPA & LDES Procurement Timeline

June 2020
Initiate Super JPA Formation Agreement

October 2020
Finalize Super JPA Agreement
Issue LDES RFO

Dec to February 2021
CCA Super JPA Board Approvals
Evaluate RFO Proposals

March to September 2021
Negotiate/Execute LDES Project(s)
CCA Board Approvals for Project Participation Agreement
# Super JPA & LDES Procurement Timeline

<table>
<thead>
<tr>
<th>Task Description</th>
<th>2020</th>
<th>2021</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sep</td>
<td>Oct</td>
</tr>
<tr>
<td>Long-Duration Energy Storage (LDES) RFO &amp; Transaction</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. RFI (done)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. RFO</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Shortlist Projects</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. Negotiate LDES &amp; Participation Agreements</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Super JPA Enabling Agreement &amp; Project Principles</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Develop Enabling-Agreement Super JPA document</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Obtain individual member approvals of SuperJPA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. Hire lead negotiator and associated support</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. Negotiate LDES &amp; Participation Agreements</td>
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<td></td>
</tr>
</tbody>
</table>

These two tasks are identical and merge the RFO and SuperJPA tracks.
Regular Agenda

4. Discuss Existing Building Code Development Support (Discussion)
Existing Buildings Codes

Executive Committee
October 13, 2020
Agenda

1. Programs Portfolio
2. Building Programs Status
3. Natural Gas Emissions
4. Replacement in Existing Buildings for 2045
5. Menlo Park 2030 Plan
6. Potential Support and Benefits
Building Programs Status

New Construction
• Reach Codes: adopted 7 of 21 agencies
• Projected End 2020: 8-10
• Projected End 2021: 15+
• 2022 New Code Cycle

Existing Construction
• Heat Pump Water Heater Incentive
• Low Income Home Upgrade
### Natural Gas Emissions Breakdown in SMC

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Res Space Heating</td>
<td>33%</td>
</tr>
<tr>
<td>Res Water Heater</td>
<td>27%</td>
</tr>
<tr>
<td>Res Dryer</td>
<td>1%</td>
</tr>
<tr>
<td>Res Cooking</td>
<td>3%</td>
</tr>
<tr>
<td>Res Misc.</td>
<td>2%</td>
</tr>
<tr>
<td>Large Com. Space Heating</td>
<td>11%</td>
</tr>
<tr>
<td>Large Com. Water Heater</td>
<td>1%</td>
</tr>
<tr>
<td>Large Com. Cooking</td>
<td>7%</td>
</tr>
<tr>
<td>Large Com. Misc.</td>
<td>2%</td>
</tr>
<tr>
<td>Small Com. Cooking</td>
<td>3%</td>
</tr>
<tr>
<td>Small Com. Misc.</td>
<td>2%</td>
</tr>
<tr>
<td>Small Com. Water Heating</td>
<td>10%</td>
</tr>
<tr>
<td>Small Com. Space Heating</td>
<td>1%</td>
</tr>
</tbody>
</table>

**Sources:**
- 2018 PG&E Gas data
- 2010 California Residential Appliance Saturation Survey
- 2006 California Commercial End-Use Survey
2045 Replacement Example: Single Family Water Heaters

Water Heaters in Single Family
- Approximately 160,000
- Conversion to electric by 2045

Conversion Assumptions
- 5% in year 1 (592)
- Yearly increase required;
  2021 – 2025 = 10%
  2026 – 2035 = 15%
  2036 onwards = 18%

Trajectory
- Current program 1,800/4 yrs
Menlo Park Climate Action Plan

- Adopted Climate Action Plan for 2030 decarbonization
- Includes
  - Existing building decarbonization code
  - Existing building EV infrastructure code
- Code Development
  - Technical and legal assessment, stakeholder engagement
  - Specific approach is TBD
  - Target adoption Q4 2021
- Projected expense $360,000 for building codes
Request & Benefits

• **PCE Committed Support**: Modest technical assistance
• **Request**: Additional PCE support
• **Benefits**
  • Menlo Park’s New Construction Code became a state-wide model
  • The existing construction codes could also be a model
  • Timing coincides with 2022 code cycle
Backup slides
High-Level Roadmap: Buildings

2018 | 2019 | 2020 | 2021

NEW BUILDINGS
- Reach codes
- Technical assistance for building industry members

EXISTING CONSTRUCTION
- Heat Pump Water Heater Incentives (forthcoming)
- Low Income Home Upgrade Program (forthcoming)
- Harvest Thermal Pilot (forthcoming)

OTHER
- Awareness & education campaign (forthcoming)
Residential natural gas appliances

- Water Heater
- Space Heater
- Clothes Dryer
- Cooktop
## Water Heating Retrofit Costs

<table>
<thead>
<tr>
<th>Vintage</th>
<th>Heat pump</th>
<th>Gas</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990s</td>
<td>$4,662 - $4,952</td>
<td>$2,598</td>
</tr>
<tr>
<td>Pre 1978</td>
<td>$4,662</td>
<td>$2,598</td>
</tr>
</tbody>
</table>

- Typical appliance life: 8-12 years
- Current available incentive: $1,000 through BayREN Home+
- Prospective incentive: ~$2,000 ($1,000 from PCE, $1,000 from Home+)
  - Additional PCE incentive: $1,500 for panel upgrade

Source: E3 2019 Study “Residential Building Electrification in California”
## Space Heating Retrofit Costs

<table>
<thead>
<tr>
<th>Vintage</th>
<th>Heat pump*</th>
<th>Gas*** Without AC install</th>
<th>Gas*** With AC install</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990s</td>
<td>$16,772 - $17,985</td>
<td>$15,000</td>
<td>$18,468</td>
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<tr>
<td>Pre 1978</td>
<td>$20,056 - $23,376**</td>
<td>$22,000</td>
<td>$25,331</td>
</tr>
</tbody>
</table>

- Typical appliance life: 15-20 years
- Current available incentive: $1,000 through BayREN Home+

* Assumes no existing AC in the home
** Assumes panel upgrade required (~$2.5k)
*** Estimated AC cost (~$3.5k)

Source: E3 2019 Study “Residential Building Electrification in California”
Existing Building Program Budget

4-Year program for $6.1 M, includes:

1. **Incentives = $2.8 M (47%)**
   - Incentives for appliances and service panels

2. **Low Income = $2 M (33%)**
   - Turnkey program building on Healthy Homes concept + electrification

3. **Other components = $1.3 M (21%)**
   - Includes workforce development, load shaping, innovation pilots, electrification potential study and administration
Regular Agenda

5. Discuss Peninsula Clean Energy Holidays (Discussion)
PCE Holidays
Executive Committee
October 13, 2020
Current PCE Holidays

• Current Standard Holidays
  1. New Year’s Day – Jan 1 (observed on nearest weekday)
  2. Martin Luther King Jr. Day
  3. Presidents’ Day
  4. Memorial Day
  5. Independence Day – July 4 (observed on nearest weekday)
  6. Labor Day
  7. Columbus Day
  8. Veteran’s Day – Nov 11 (observed on nearest weekday)
  9. Thanksgiving Day
 10. Day after Thanksgiving
 11. Christmas Day – Dec 25 (observed on nearest weekday)

• Floating Holidays – award based on start date
  1. If employed on January 1, awarded 4 for the year
  2. If hire date is April 1 – June 30, awarded 3 for the year
  3. If hire date is July 1 – September 30, awarded 2 for the year
  4. If hire date is after October 1, awarded 1 for the year
Public Agencies Researched

- Federal Government
- State of California
- San Mateo County
- Merced County
- 20 Cities/Towns of San Mateo County

Note: Holidays were pulled from city's publicly available calendars online if available. Not all data was available or consistently located.
Public Agencies Offer Different Holidays

• Most agencies offer 11 holidays
  • All of them offer the same 10 holidays
  • A couple offer 12 and a couple offer 10

• Columbus Day (2\textsuperscript{nd} Monday in October)
  • One of PCE’s Holidays
  • Not consistently offered by public agencies (only 5 cities in San Mateo County)
  • Federal and Bank Holiday
  • Has been renamed to Indigenous People’s Day by some agencies that have maintained it

• Other Holidays that are inconsistent
  • Cesar Chavez Birthday – March 31 (observed on nearest weekday)
  • Christmas Eve
  • Week between Christmas and New Year’s Day
## Public Agencies Offer Different Holidays

<table>
<thead>
<tr>
<th></th>
<th>Cesar Chavez</th>
<th>Columbus Day</th>
<th>Christmas Eve</th>
<th>Xmas Week</th>
</tr>
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<tbody>
<tr>
<td>Peninsula Clean Energy</td>
<td></td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Federal Government</td>
<td></td>
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<tr>
<td>State of California</td>
<td>Yes</td>
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<tr>
<td>San Mateo County</td>
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<td>Yes*</td>
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<tr>
<td>Merced County</td>
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<td>5 Cities in San Mateo County</td>
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<tr>
<td>8 Cities in San Mateo County</td>
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<td>3 Cities in San Mateo County</td>
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</tr>
<tr>
<td>1 City in San Mateo County</td>
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<td>Yes</td>
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</tr>
</tbody>
</table>

* Some agencies have renamed this to Indigenous People's Day
** 5 are all day and 3 are afternoon only
Columbus Day Options for PCE

1. Keep Columbus Day as is
2. Keep holiday as is, but rename to Indigenous People’s Day
3. Replace Columbus Day with Cesar Chavez Birthday
4. Replace Columbus Day with Floating Holiday
Regular Agenda

6. Committee Members’ Reports (Discussion)
Regular Agenda

Adjourn