



Peninsula Clean Energy Board of Directors Regular Meeting

March 28, 2024

The meeting will begin shortly. Thank you!

Agenda

- Call to Order / Roll Call
- Public Comment (for items not on the Agenda)
 - Please note, send any chats to Board Clerk, Nelly Wogberg
- Action to set the Agenda and Approve Consent Items 1-5
 - Consent - Public Comment
- Regular Agenda
- Adjournment

Chair Report (Discussion)

CEO Report (Discussion)

CEO Report

Programs Update

- CA Department of Housing and Community Development EV L1 Code Amendment Request
- SVCE Partnership on Turnkey Electrification Services

Regulatory Update

- Disadvantaged Community Green Tariff (DAC-GT) Program Expansion
- CPUC Proposed Decision on Financial Security Requirement

CEO Report: EPA Green Power Program Update

- Voluntary Environmental Protection Agency (EPA) Program
- Participating cities get a sign and access to certain information resources
- Peninsula Clean Energy has submitted annual reports on behalf of our member cities to EPA since 2018
- Due to recent eligibility update from EPA, most PCE cities are ineligible to remain in the program, or will be ineligible in the near future
- Criteria has become more stringent; requires shift to ECO100 and purchase of Carbon Allowances
- Peninsula Clean Energy will be ending participation in this program starting this year and is considering a program in its place
- Email will be sent to city sustainability staff, city manager, and corresponding Board member in the next week

CEO Report: PCE Federal Strategy

Purpose

- Boost PCE/CCA Awareness, Participate in /Influence Federal Energy Issues, Diversify Revenues to Help Scale Programs, Deepen DOE and Legislator Relationships

PCE Request

- Community Project Request for \$2M to support ~ 200 additional low income home upgrades

DC Lobby Days

- March 20-21 with the Cal-CCA coalition was a success!

CEO Report: Event Invitations

- **CalCCA Annual Conference – April 16-18 in San Jose**
 - 9 Board Members attending the conference this year
 - Elected Officials and CCA Governing Board Members Luncheon on Thursday, April 18, at noon.
 - Option to attend only the luncheon – in San Jose
- **Sustainable San Mateo County's Sustainability Awards Celebration**
 - Wednesday, April 10, from 5:30 to 8:30 p.m.
 - Three comp tickets available

Let Nelly know if you are interested in joining either event

CEO Report: Upcoming

Upcoming Board Topics

- Power Resources Discussions (March/April)
- Pre-Pay Bond Opportunity (April)
- JPA Amendments/Policy 16 (May/June)
- Customer Service Center (May)
- Budget Season (March – June)
- Set Rates for Q3/Q4 2024 (June)
- New Strategic Plan (kick off in late summer/fall 2024)
- May consider cancelling July meeting (tbd)

Member Agency Briefings

Brisbane February 15

Los Banos March 6

Hillsborough March 11

Burlingame April 1

Pacifica April 8

San Bruno April 23

Menlo Park May 7

Atherton May 15

San Carlos May 28

East Palo Alto June 4

Foster City July 15

South San Francisco – August 14

County of San Mateo August 27

Millbrae September 10

Portola Valley September 25

Staffing Update

Welcome!

- Jana Kopyciok-Lande, Associate Director, Innovation and Strategy - March 1
- Ross Fisher our Associate Manager, DER Programs - March 18
- Lilly Meek our Community Outreach Specialist - March 25
- Kelly Lew-Quintal, Risk Manager - April 16



Currently Posted Positions

Please help us spread the word!



- Analyst/Senior Analyst, Building Electrification Support
- Senior Manager, Strategic Analysis and Rates
- Internships:
 - Summer Intern, Building Decarb Analytics
 - Summer Intern, Transportation & Distributed Resources (DER)

<https://www.peninsulacleanenergy.com/join-our-team>

Upcoming Meetings

- Executive Committee:
 - Monday, April 8 at 10:00 a.m.
- Citizens Advisory Committee:
 - Thursday, April 11 at 6:30 p.m.
- Board of Directors:
 - Thursday, April 25 at 6:30 pm
- Audit and Finance Committee:
 - Next meeting on May 13 at 8:30 a.m.



CAC Report (Discussion)

Selection of Board of Directors Chair and Vice Chair (Action)

Proposed Revisions to NEM Annual Cash Out Policy

Leslie Brown

Board of Directors Meeting

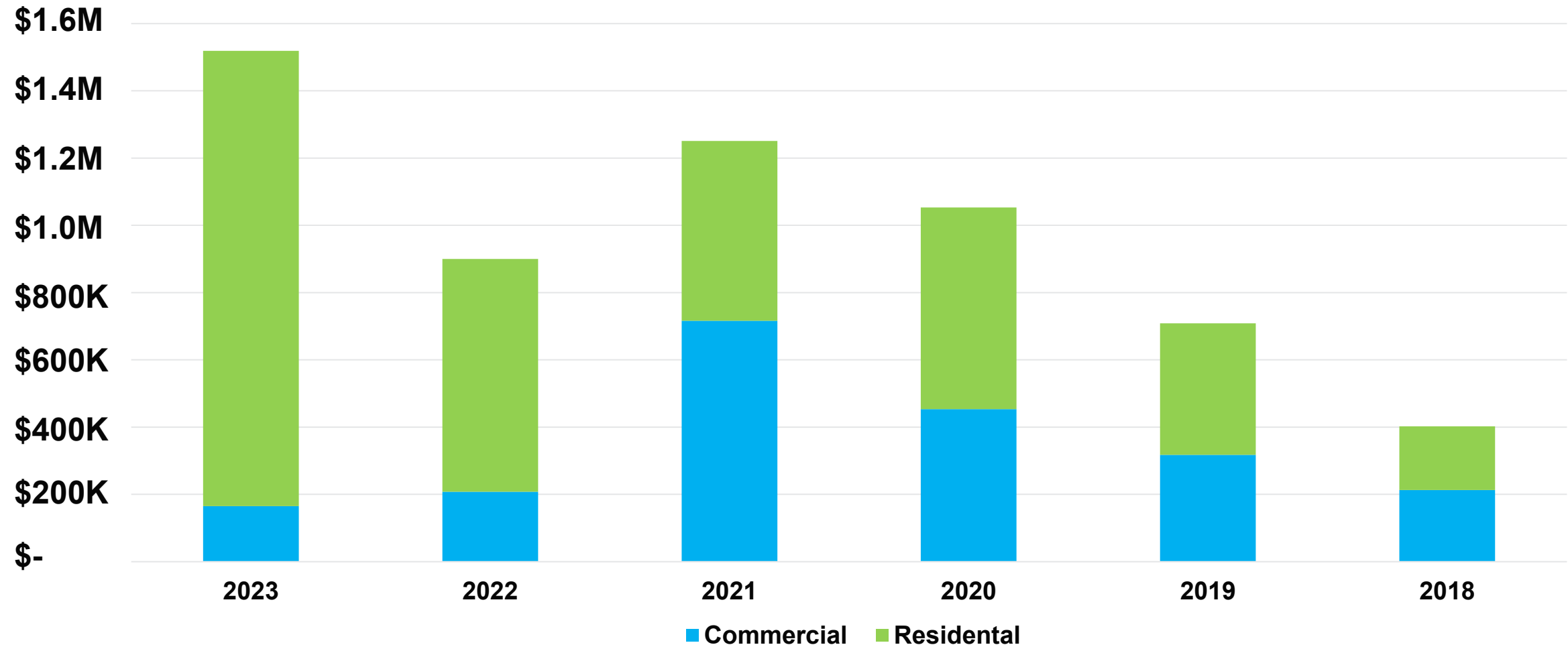
March 28th, 2024

Background

- Net Energy Metering customers (1.0 & 2.0) are cashed out once per year after their April billing cycle, having earned credits monthly at the retail rate.
 - Applicable to both NEM 1 and NEM 2 customers.
 - \$100 or more is issued as a check.
 - \$100 or less is retained in customer's credit escrow.
 - Cash out cap is \$20,000.

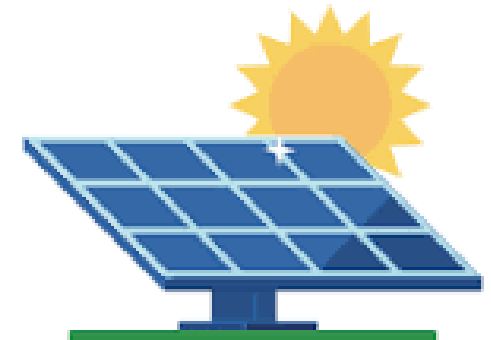
Fiscal History

NEM Annual Cash Outs



Considerations and Challenges

- 2% of checks have never been deposited.
- It costs \$25 to reissue an expired check.
- On average 3-8 customers exceed the \$20,000 cap each year.
 - Large commercial, school district, and municipal accounts.
 - Repeat customers
- All other CCAs have caps of \$10,000 or less.
 - Net Surplus Compensation (NSC) is the dominant program.
 - RCE is only other CCA that still credits at retail, \$5,000 cap.



Proposed Revisions

- Raise the current \$100 threshold for a customer to receive a check to \$500 or more, effective the April 2024 annual cash out.
- Credit balances under the new threshold will be issued as an on-bill credit.
 - Reduction of checks by over 75% each year.
- Lower the cash out cap to \$10,000, starting in April 2025.
 - Staff will analyze the impact in 2025 and may recommend lowering it to \$5,000 in 2026.

Alternatives to \$100 Check Threshold

Monetary Threshold	# of Checks	\$ of Checks	# of On Bill Credits	\$ of On Bill Credits
\$300<	3,007	\$1,773,950	6,501	\$853,924
\$500<	1,285	\$1,107,468	8,223	\$1,520,406
\$750<	449	\$607,442	9,059	\$2,020,432
\$1,000<	181	\$377,594	9,327	\$2,250,281

Customer Notification

- These updates will be implemented with appropriate communication to all our solar customers.
 - Email
 - Letter mailed to customers without an email address.
 - Direct outreach to customers affected by the lower cap.



Staff Recommendation

- Approval of the proposed updates to the NEM Annual Cash Out policy.
 - Raising the annual cash out check threshold to \$500 beginning in April 2024.
 - Lowering of the annual cash out cap from \$20,000 to \$10,000 beginning in April 2025.

Rate Setting Methodology

Board of Directors Meeting
March 28, 2024

Background

- PCE has historically provided customers a 5% discount to PG&E's generation rates, net of the PCIA
 - Easily understandable by customers and stakeholders
 - Consistent savings
- PCE elected not to adjust rates in February 2024 and rates were maintained at 2023 levels
 - Analysis based on recently adopted liquidity reserve target
 - Discount to PG&E greater than 10% for most customers
- PCE is considering adjusting rate setting methodology to more closely align with costs
- Engaged NewGen to analyze Cost of Service ratemaking
- Recommendation based in part on results of NewGen analysis, PCE's strong financial position, and customers' focus on costs

NewGen Analysis

- NewGen worked with staff to develop a financial model to calculate contribution margins by customer class.
- Allocated all PCE costs (fixed and variable) among customer classes based on agreed-upon methodologies.
- Model, once finalized, can be used to set rates by customer class.
- Results are illustrative and based on test years 2024 and 2025.



Indicative Results

Significant subjectivity to unbundle, classify and allocate costs among customers

PCE rates exceed costs across most customer classes

Contribution margins vary widely by customer class

Rate Setting Options

1. Current Methodology – maintain net 5% discount to PG&E generation rates
2. Cost of Service rate setting, including PCE cost allocation
3. Hybrid Approach

Current Methodology – Net 5% Discount

- Description: Maintain net 5% discount to PG&E generation rates
- Implementation: Adjust PCE rates after PG&E updates rates and/or PCIA changes so that PCE customers maintain net 5% discount to PG&E

Pros

- Positive, easily understandable and consistent message
- Avoids potential arguments/debates on cost allocation (uses PG&E allocation)
- Easy to implement

Considerations

- Revenues (and rates) set independent of costs
- At times, may not be able to generate enough revenue to cover costs
- At times, rates potentially higher than necessary, resulting in financial reserves greater than target

Cost of Service Including PCE Cost Allocation

- Description: Rates set based on forecasted cost of service by customer class
- Implementation: Estimate cost of providing service to each customer class and set rates to recover costs by customer class; adjust rates mid-cycle if needed based on observed costs

Pros

- Rates set to recover costs on forecasted basis
- Financial stability and credit positive
- Could be years when PCE rates significantly less than PG&E (>5% discount)
- Theoretically equitable rate setting across customers, assuming proper cost allocation

Considerations

- Subjectivity allocating costs by customer class and could be contentious
- Could be years when PCE rates higher than PG&E
- Discount (or premium) to PG&E will vary by customer class
- Requires detailed rates analysis resulting in incremental administrative/consulting costs

Hybrid Approach

- Description: Revenue determined by cost of providing service as an Agency; rates based on PG&E cost allocation resulting in consistent discount across all customers
- Implementation: Estimate cost of providing service and calculate discount needed to achieve desired revenues; adjust rates mid-cycle if needed based on actual costs

Pros

- PCE rates set to recover costs
- Financial stability and credit positive
- Could be years when PCE rates significantly less than PG&E (>5% discount)
- Avoids potential contention on cost allocation and easier to implement than cost of service ratemaking
- Consistent message across customers and easy to compare rates to PG&E

Considerations

- Could be a years when PCE rates higher than PG&E

same as Cost of Service

CCA Benchmarking

“PG&E Minus”



Cost of Service



“Hybrid Approach”



Recommendation and Next Steps

Recommendation

- Adopt “hybrid” approach that includes elements of current “PG&E minus” and cost of service ratemaking methodologies
- Better ensures financial stability, while maximizing the discount provided to customers; also avoids subjectivity and possible contention of allocating costs among customers

Next Steps

- Utilize budget process to forecast costs and continue to invest in customer programs
- Pending Board approval, calculate revenue and the maximum discount possible while maintaining appropriate financial reserves
- Board approval of budget in June, including PCE rates and discount to PG&E
- Update PCE rates on August 1
- Monitor costs and PG&E rate actions throughout year and adjust rates mid-cycle only if needed

Load Management Standard Plan for California Energy Commission

Presented by:
Doug Karpa (Managing Counsel of Regulatory Policy)
Jeremy Waen (Sr. Dir. of Regulatory Policy)

Goals of the Load Management Standard

In January 2023, the California Energy Commission (CEC) established revised regulations for a Load Management Standard (LMS)

(20 Cal Code Regs. §§ 1621 – 1623.1)

These regulations seek to:

- “establish cost-effective programs and rate structures, which will
- encourage the use of electrical energy at off-peak hours and
- encourage the control of daily and seasonal peak loads
- to improve electric system equity, efficiency, and reliability...”

(20 Cal. Code Regs § 1621(a))

Load Management Standard Regulation (1 of 2)

The LMS asks Peninsula Clean Energy (PCE) to submit a plan to encourage off-peak energy use and control of daily and seasonal peak loads

This regulation provides two options to achieve these goals:

- Option 1: Offer marginal cost-based rates

- Option 2: Offer programs that respond to marginal cost signals

Load Management Standard Regulation (2 of 2)

LMS compliant rates and programs:

- Must be offered to each customer class
- Must be evaluated on:
 - Cost-effectiveness
 - Equity
 - Technological feasibility
 - Benefits to the grid
 - Benefits to customers

Load Management Standard Requirements

Key Deadlines & Milestones

April 1, 2024 – Load Management Standard Plan due

May 31, 2024 – Board hearing to occur by this date

October 1, 2024 – List of load flexibility programs to be submitted to the CEC

July 1, 2025 – One rate approved unless it would not materially reduce load

April - May 2027 – Board review of the plan every three years after approval

July 1, 2027 – Offer marginal cost-based rates and/or programs to customers

Option 1: Marginal Cost-Based Rates

Rates must be considered first for compliance

Preliminary assessments *discourage* developing PCE-specific rates *due to cost-effectiveness, technical feasibility, benefits to the grid, and equity concerns*

Instead, PCE staff is evaluating participation in PG&E's Real-Time Pricing (RTP) rate pilots including:

- Agricultural Flexible Irrigation Technology (AgFIT)
- Business Electric Vehicle (BEV)
- Vehicle to Grid Integration (VGI)

Option 2: Marginal Cost-Based Programs (1 of 2)

If rates are not feasible, then programs can be offered as an alternative means for compliance.

PCE is pursuing many programs to manage peak loads, including:

- EV managed charging
- Residential Solar and Storage Programs
- GovPV/BE/EV
- FLEXmarket
- Residential Electrification Direct Install

Option 2: Marginal Cost-Based Programs (2 of 2)

By 2027: At least one program offered to each customer class

Programs must respond to hourly signals.

- Needs Distributed Energy Resources Management Systems (DERMS)

PCE's own programmatic objectives may not align well with LMS regulation objectives

Load Management Standard Requirements

The Board may delay timely implementation if:

1. It would result in extreme hardship to the CCA,
2. It would result in reduced system reliability or efficiency,
3. It would not be technologically feasible or cost-effective to implement, or
4. Modification of the prior adopted LMS plan is needed to provide more technologically feasible, equitable, or cost-effective alternatives.

Next Steps

- PCE is likely to pursue a combination of PG&E's RTP rate pilots and PCE programs to meet the goals of the LMS.
- The Draft PCE LMS Plan was provided within this meeting's packet.
- The Final PCE LMS Plan will be brought back for Board approval in April.

Update of 100% Annual Renewable Energy Goal

Board of Directors Meeting
March 28, 2024

Agenda

- Background
- CY 2025-2026 Cost of Energy Analysis
- Considerations & Options
- Recommendation

Recommendation

Approval of Revisions to Peninsula Clean Energy's Organizational Priority Number 1 of the Strategic Plan from:

"Delivering 100% Renewable Energy Annually by 2025" to

"Delivering 100% Renewable Energy Annually by 2030 Through Strategic Procurement of Resources to Maximize Peninsula Clean Energy's 24/7 Hourly Renewable Matching"

Background

Current Priorities and Goals

PCE's Organizational Priority #1:

Delivering 100% renewable energy annually by 2025 and on a 99% time-coincident basis by 2027.

Power Resources' Strategic Goal #1:

Secure sufficient, **low cost**, clean sources of electricity that achieve Peninsula Clean Energy's priorities while ensuring reliability and meeting regulatory mandates.

- Balancing Priorities: Affordability v. High Renewable Content (in the near term)

Timeline

- Address the 2025 Annual Renewable Goal at the March BOD
 - Prepare FY 24/25 Cost of Energy Budget based on the BOD Decision
- Address the 2027 Hourly Renewable Matching Goal at the April 25 BOD
 - Based on discussion at the November 2023 Board Retreat
- Reflect adopted changes to either goal in the Strategic Plan
 - Mid-year review at the May 13 Executive Committee meeting
- Approve FY 24/25 Budget at the June BOD

Snapshot: Renewable % with Current Resource Portfolio

Year	PCE Portfolio Projected Renewable Content as of March 2024*
2025	68%
2026	78%
2027	86%
2028	80%
2029	72%
2030	69%

* Estimates based on existing Power Purchase Agreements (PPAs) in the portfolio

- Conservative Assumptions:
 - Excluding several PPAs with significant uncertainty around their commercial operation dates;
 - No new generation PPAs with commercial operation dates in 2025-2027
- Annual renewable % may fluctuate in future years due to addition of new contracts, expiration of existing contracts, actual performance of resources, and load increases.

Challenges with the 2025 Target Year

- Achieving 100% renewable in 2025 will be very expensive due to:
 - Lack of near-term renewable resources for long-term contracting
 - Project delays and terminations
 - Extremely high prices for PCC1 Renewable Energy Credits (RECs)
- Buying RECs does not provide any "additionality" benefits to the grid;
 - PPAs allow developers the long-term financial stability to build new renewable projects that will displace natural gas resources (aka, "additional" GHG reductions)

Year	Projected Renewable % via PPAs	Short-term PCC1 REC Purchase Required
2025	68%	32%

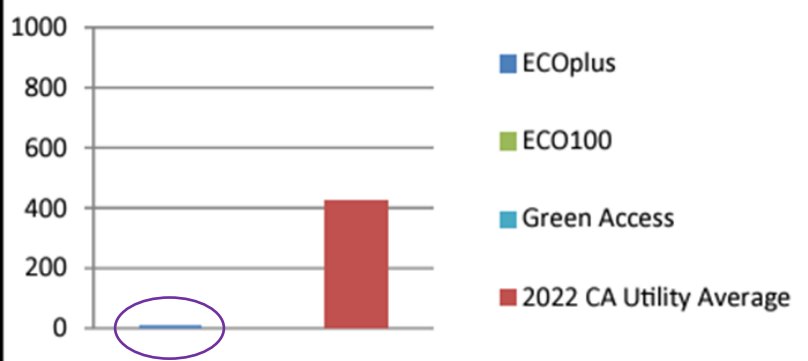


Terminology

- **"Eligible Renewable Energy Resources"** is defined by California's **Renewable Portfolio Standard (RPS)**-
 - Eligible resources include: wind, solar, geothermal, biomass and eligible small hydro
 - Regulatory requirement: Minimum % of retail sales must be renewable; % increases over time to 60% by 2030
- **"Renewable Energy Credit (REC)"** - 1 REC per 1MWh of generation from Eligible Renewable Energy Resources
- **"Portfolio Content Categories" (PCC)**
 - PCC-1: "Bundled Energy and REC"
 - In State or Interconnected to California or Dynamic Transfer
 - PCE Policy is to procure PCC-1 renewables only
 - PCC-2: "Out-of-state renewable bundled with substitute energy"
 - PCC-3: "Unbundled" REC only
- **"Greenhouse Gas (GHG) Free Resources"** typically refers to large hydro and nuclear resources

Product Content

2022 POWER CONTENT LABEL (PCL)

Greenhouse Gas Emissions Intensity (lbs CO ₂ e/MWh)				Energy Resources	ECOplus	ECO100	Green Access	2022 CA Power Mix
ECOplus	ECO100	Green Access	2022 CA Utility Average	Eligible Renewable ¹	51.8%	100.0%	100.0%	35.8%
9	0	0	422	Biomass & Biowaste	8.2%	0.0%	0.0%	2.1%
 <p>Percentage of Retail Sales Covered by Retired Unbundled RECs³:</p>				Geothermal	4.9%	0.0%	0.0%	4.7%
				Eligible Hydroelectric	0.8%	0.0%	0.0%	1.1%
				Solar	18.5%	50.0%	100.0%	17.0%
				Wind	19.3%	50.0%	0.0%	10.8%
				Coal	0.0%	0.0%	0.0%	2.1%
				Large Hydroelectric	48.2%	0.0%	0.0%	9.2%
				Natural Gas	0.0%	0.0%	0.0%	36.4%
				Nuclear	0.0%	0.0%	0.0%	9.2%
				Other	0.0%	0.0%	0.0%	0.1%
				Unspecified Power ²	0.0%	0.0%	0.0%	7.1%
				TOTAL	100.0%	100.0%	100.0%	100.0%
					0%	0%	0%	

ECO100:

- 100% Renewable
- 100% GHG Free
- 100% Clean

ECOplus:

- 100% Clean
- >50% Renewable

- **PCC1 REC:** Eligible Renewable on PCL, emissions factor of the renewable facility (no emissions for solar and wind)
- **PCC2 REC:** Eligible Renewable on PCL, emissions factor of unspecified power (looks like natural gas)
- **PCC3 REC:** Unspecified power on PCL, will also show under "unbundled REC" area on PCL, emissions factor of unspecified power (looks like natural gas)
- **Greenhouse Gas (GHG) Free:** Large Hydro on PCL, no emissions

CY 2025-2026 Cost of Energy Analysis

CY 2025 Assumptions

- Changes relative to the 5-yr forecast from June 2023:
 - 5% increase in load forecast and 16% reduction in forecasted renewable supply
 - 105% and 383% increase in price forecasts for REC and GHG-Free attributes

Variable	Difference
Load (GWh)	5%
Renewable Supply (GWh)	-16%
REC Price (\$/MWh)	105%
GHG-Free Price (\$/MWh)	383%

CY 2025 Summary of Costs

- Meeting the 100% renewable energy goal in CY 2025 could increase PCE's Cost of Energy by around ~\$17/MWh (\$85 million) relative to the 5-yr forecast.

Scenario	Difference relative to 5-yr Forecast (million \$)	Difference relative to 5-yr Forecast (\$/MWh)
5-yr Forecast for CY 2025 (100% Renewable)	NA	NA
100% Renewable	85	16.77
68% Renewable/ 32% GHG-Free	24	1.43
50% Renewable/ 50% GHG-Free	-1	-4.97

CY 2026 Assumptions

- Changes relative to the 5-yr forecast from June 2023:
 - 3% increase in load forecast and 25% decrease in forecasted renewable supply
 - 100% and 314% increase in price forecasts for REC and GHG-Free attributes

Variable	Difference
Load (GWh)	3%
Renewable Supply (GWh)	-25%
REC Price (\$/MWh)	100%
GHG-Free Price (\$/MWh)	314%

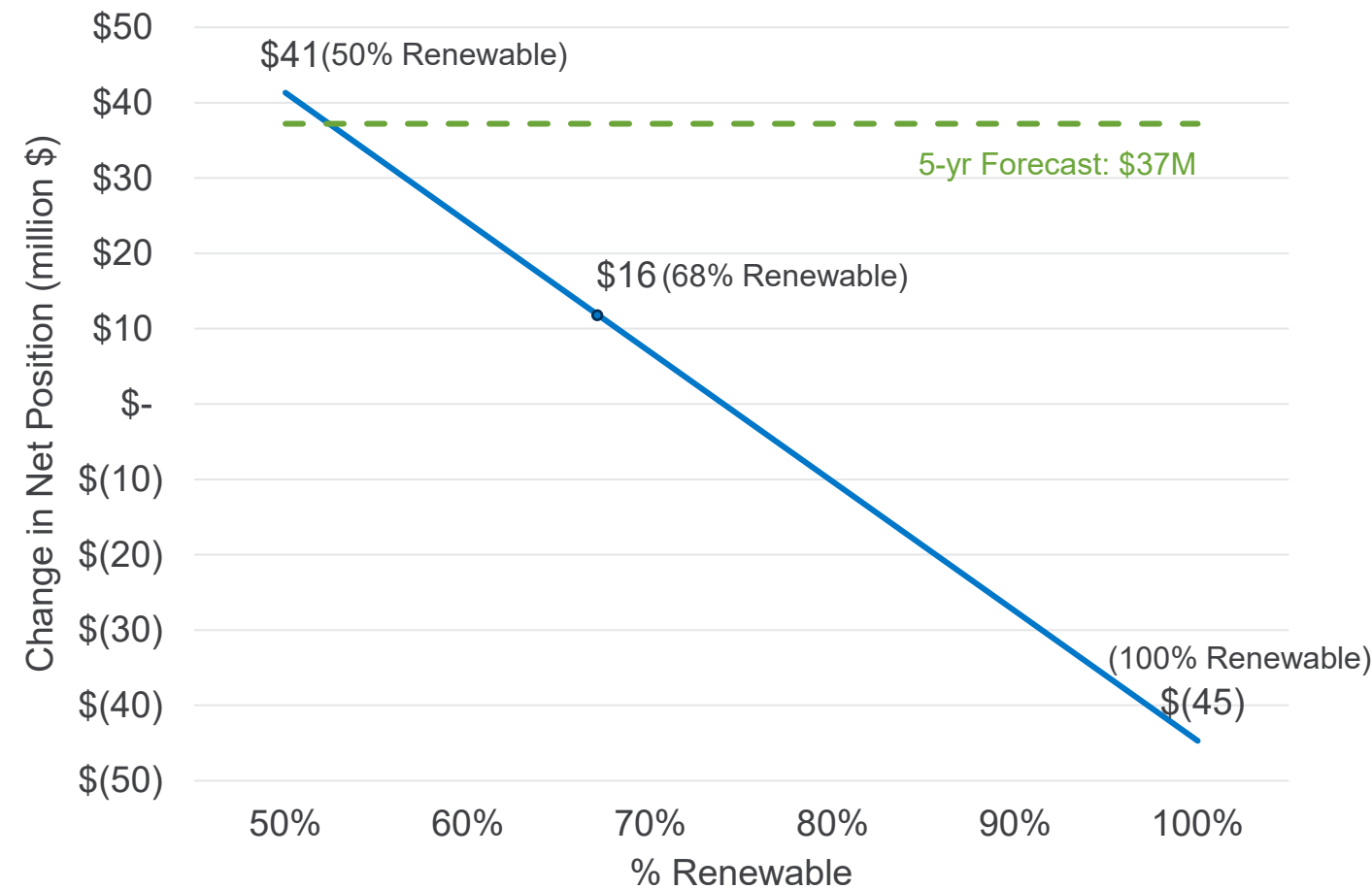
CY 2026 Summary of Costs

- Meeting the 100% renewable energy goal in CY 2026 could increase PCE's Cost of Energy by around ~\$27/MWh (\$122 million) relative to the 5-yr forecast

Scenario	Difference relative to 5-yr Forecast (million \$)	Difference relative to 5-yr Forecast (\$/MWh)
5-yr Forecast for CY 2026 (100% Renewable)	NA	NA
100% Renewable	122	26.92
78% Renewable/ 22% GHG-Free	76	15.74
50% Renewable/ 50% GHG-Free	28	3.75

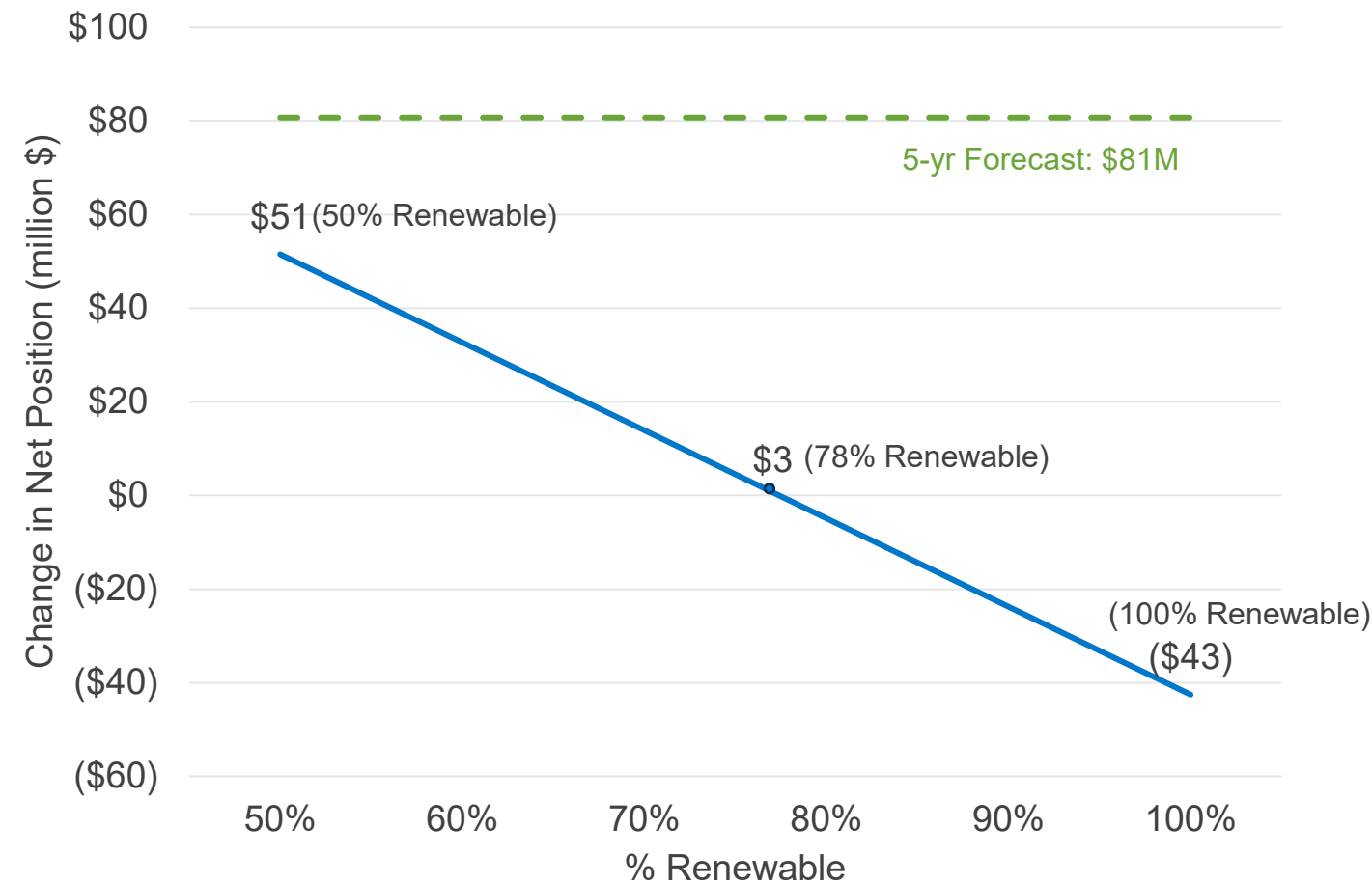
Change in Net Position - CY 2025

- For every 1% increase in our renewable goal, Change in Net Position will decrease by ~\$1.7 million in CY 2025



Change in Net Position - CY 2026

- For every 1% increase in our renewable goal, Change in Net Position will decrease by **~\$1.9 million** in CY 2026



Consideration & Options

Decision Considerations

- Cost of Energy could be significantly reduced by adopting a more gradual approach to meeting the 100% annual renewable goal;
- Affordability and lower costs facilitate electrification efforts;
- Current strategy involves buying substantial amount of PCC1 RECs in the short term, but buying RECs doesn't provide additional emission reduction benefits to the grid;
- PCE's primary objective is to achieve a high time-coincident target, any new procurement should focus on best-fit resources for hourly matching;
- Maintain a 100% renewable product for interested customers.

Options

- Low Cost Option

- Higher of 50% annual renewable or Renewable Portfolio Standard (RPS) requirement, with the remainder fulfilled by carbon-free energy.

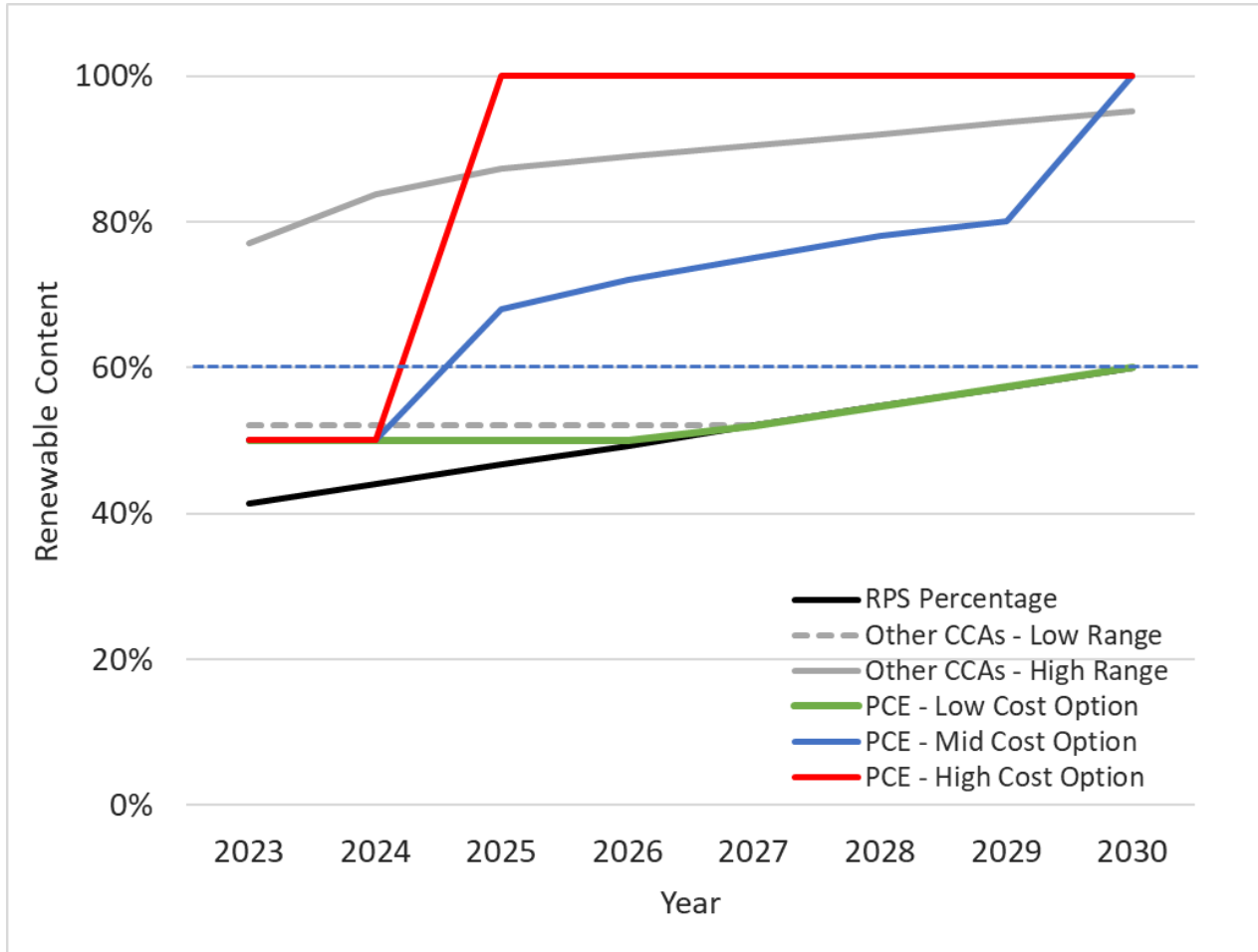
- Mid Cost Option

- Drive to 100% renewable portfolio in 2030 by procuring resources to maximize hourly renewable matching
 - Annual renewable percentage between CY 2025 and CY 2029 will continue on an upward trajectory with a minimum of **60%** but will remain flexible based on available renewable resources, ability to sign long-term PPAs that match our portfolio needs, and balance the need to keep customer costs in check;
 - Facilitate increase in renewable content through contracting new long-term resources based on best-fit to maximize PCE's 24/7 hourly renewable matching, and avoid procurement of short-term RECs;

- High Cost Option

- Achieve 100% Renewable by 2025 (i.e. the current target)

Benchmarking Against Other CCAs



Note: Renewable content data on other CCAs are based on research from available public sources, and may not reflect the most current status or projections.

Factors to Note:

- PCE's portfolio and projections are optimized to minimize emissions and do not include:
 - PCC-2 RECs
 - PCC-3 RECs
 - Biomass
- 100% Renewable Product enrollment differs among CCAs

Estimated Cost Comparison

Year	LOW COST OPTION- Renewable Content	MID COST OPTION- Renewable Content (Illustrative)	HIGH COST OPTION- Renewable Content	MID COST OPTION Additional Cost (million \$) Relative to LOW COST OPTION*	HIGH COST OPTION Additional Cost (million \$) Relative to LOW COST OPTION
2025	50%	68%	100%	31	87
2026	50%	72%	100%	41	94
2027	52%	75%	100%	42	88
2028	54.7%	78%	100%	38	74
2029	57.3%	80%	100%	29	54
2030	60%	100%	100%	35	35
Total				216	432

*Estimates based on current analysis

Recommendation

Staff Recommendation

With input from the Procurement Subcommittee, Staff recommends pursuing the Mid Cost Option - Drive to 100% renewable portfolio in 2030 by procuring resources to maximize hourly matching.

Reasons:

1. Keep costs low for our customers; encourage electrification
2. Maintain a minimum of 60% renewable content for CY 2025-2029;
3. Continue to procure new renewable projects based on hourly matching;
4. Grow renewable content each year using long-term contracts, and avoid buying significant amounts of expensive PCC1 RECs in the interim;
5. Maintain flexibility by not having prescriptive targets each year.

Recommendation

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Update of 100% Annual Renewable Energy Goal

Board of Directors Meeting
March 28, 2024

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- CY 2025-2026 Cost of Energy Analysis
- Considerations & Options
- Recommendation

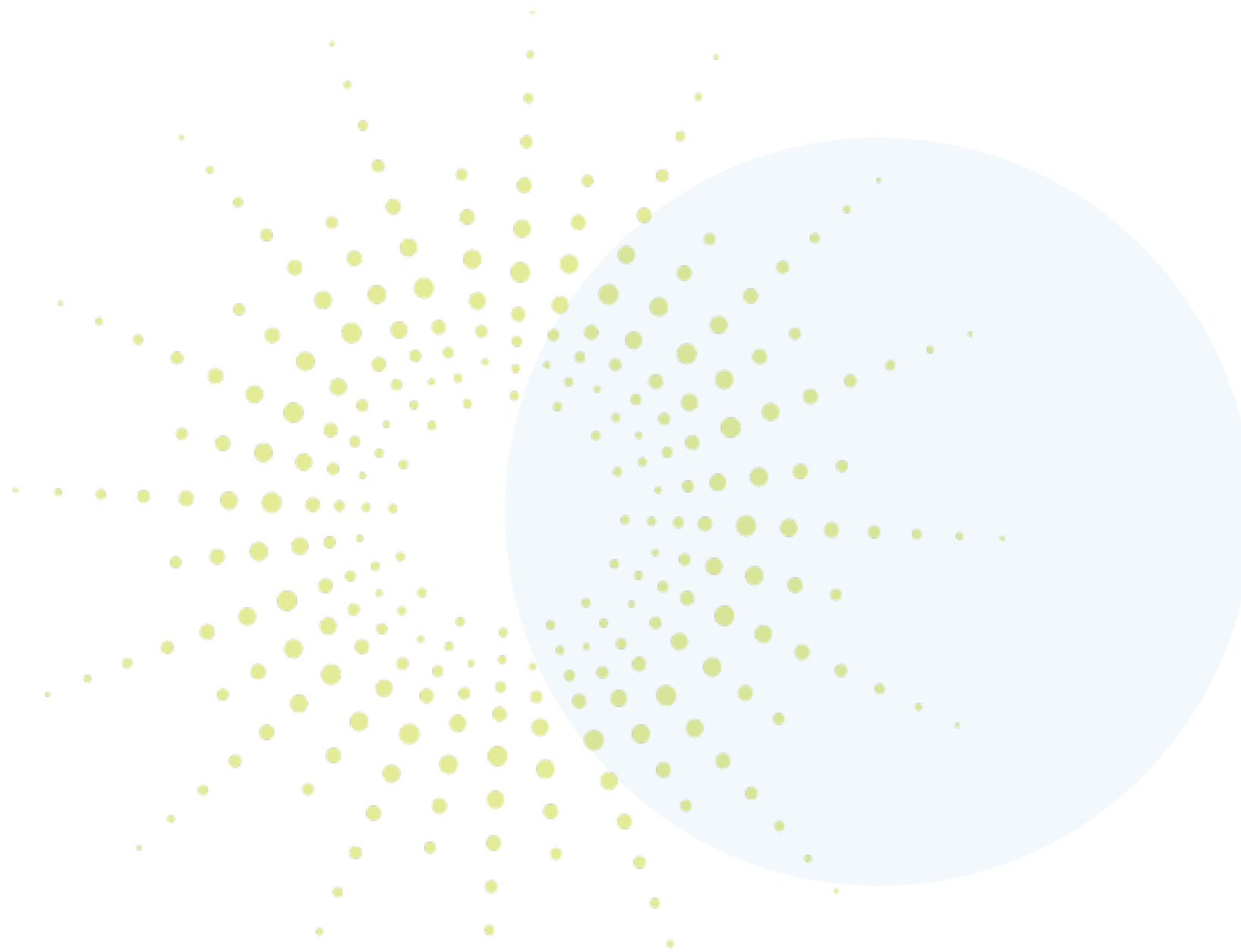
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- Balancing Priorities: Affordability v. High Renewable Content (in the near term)

Timeline

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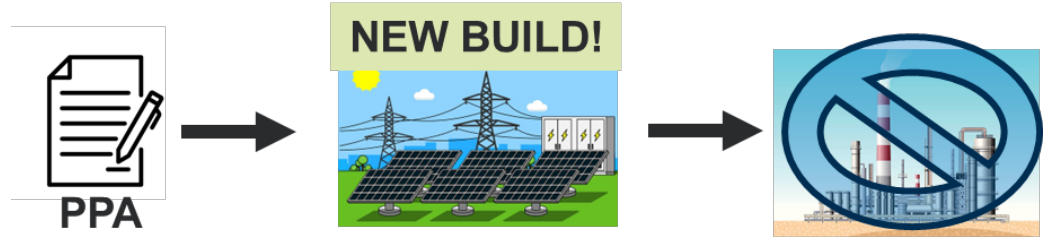
* Estimates based on existing Power Purchase Agreements (PPAs) in the portfolio

- Conservative Assumptions:
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- Annual renewable % may fluctuate in future years due to addition of new contracts, expiration of existing contracts, actual performance of resources, and load increases.

Challenges with the 2025 Target Year

- Achieving 100% renewable in 2025 will be very expensive due to:
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 - Project delays and terminations
 - Extremely high prices for PCC1 Renewable Energy Credits (RECs)
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Year	Projected Renewable % via PPAs	Short-term PCC1 REC Purchase Required
2025	68%	32%

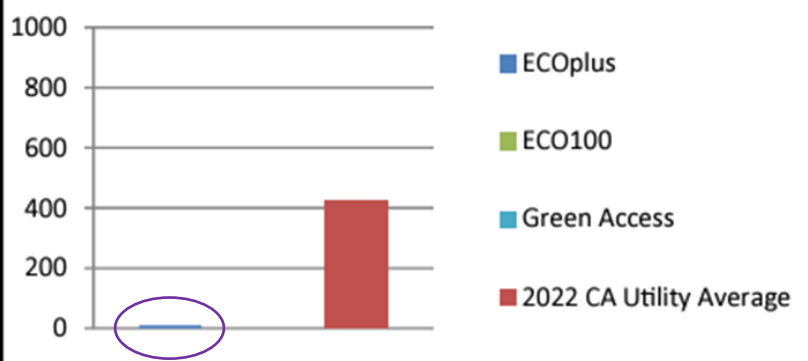


Terminology

- **"Eligible Renewable Energy Resources"** is defined by California's **Renewable Portfolio Standard (RPS)**-
 - Eligible resources include: wind, solar, geothermal, biomass and eligible small hydro
 - Regulatory requirement: Minimum % of retail sales must be renewable; % increases over time to 60% by 2030
- **"Renewable Energy Credit (REC)"** - 1 REC per 1MWh of generation from Eligible Renewable Energy Resources
- **"Portfolio Content Categories" (PCC)**
 - PCC-1: "Bundled Energy and REC"
 - In State or Interconnected to California or Dynamic Transfer
 - PCE Policy is to procure PCC-1 renewables only
 - PCC-2: "Out-of-state renewable bundled with substitute energy"
 - PCC-3: "Unbundled" REC only
- **"Greenhouse Gas (GHG) Free Resources"** typically refers to large hydro and nuclear resources

Product Content

2022 POWER CONTENT LABEL (PCL)

Greenhouse Gas Emissions Intensity (lbs CO ₂ e/MWh)				Energy Resources	ECOplus	ECO100	Green Access	2022 CA Power Mix
ECOplus	ECO100	Green Access	2022 CA Utility Average	Eligible Renewable ¹	51.8%	100.0%	100.0%	35.8%
9	0	0	422	Biomass & Biowaste	8.2%	0.0%	0.0%	2.1%
 <p>Percentage of Retail Sales Covered by Retired Unbundled RECs³:</p>				Geothermal	4.9%	0.0%	0.0%	4.7%
				Eligible Hydroelectric	0.8%	0.0%	0.0%	1.1%
				Solar	18.5%	50.0%	100.0%	17.0%
				Wind	19.3%	50.0%	0.0%	10.8%
				Coal	0.0%	0.0%	0.0%	2.1%
				Large Hydroelectric	48.2%	0.0%	0.0%	9.2%
				Natural Gas	0.0%	0.0%	0.0%	36.4%
				Nuclear	0.0%	0.0%	0.0%	9.2%
				Other	0.0%	0.0%	0.0%	0.1%
				Unspecified Power ²	0.0%	0.0%	0.0%	7.1%
				TOTAL	100.0%	100.0%	100.0%	100.0%
					0%	0%	0%	

ECO100:

- 100% Renewable
- 100% GHG Free
- 100% Clean

ECOplus:

- 100% Clean
- >50% Renewable

- **PCC1 REC:** Eligible Renewable on PCL, emissions factor of the renewable facility (no emissions for solar and wind)
- **PCC2 REC:** Eligible Renewable on PCL, emissions factor of unspecified power (looks like natural gas)
- **PCC3 REC:** Unspecified power on PCL, will also show under "unbundled REC" area on PCL, emissions factor of unspecified power (looks like natural gas)
- **Greenhouse Gas (GHG) Free:** Large Hydro on PCL, no emissions

CY 2025-2026 Cost of Energy Analysis

A decorative background featuring a large, light blue circle on the right side. To the left of the circle is a cluster of numerous small, yellow dots of varying sizes, some of which are scattered across the white background.

CY 2025 Assumptions

- Changes relative to the 5-yr forecast from June 2023:
 - 5% increase in load forecast and 16% reduction in forecasted renewable supply
 - 105% and 383% increase in price forecasts for REC and GHG-Free attributes

Variable	Difference
Load (GWh)	5%
Renewable Supply (GWh)	-16%
REC Price (\$/MWh)	105%
GHG-Free Price (\$/MWh)	383%

CY 2025 Summary of Costs

- Meeting the 100% renewable energy goal in CY 2025 could increase PCE's Cost of Energy by around ~\$17/MWh (\$85 million) relative to the 5-yr forecast.

Scenario	Difference relative to 5-yr Forecast (million \$)	Difference relative to 5-yr Forecast (\$/MWh)
5-yr Forecast for CY 2025 (100% Renewable)	NA	NA
100% Renewable	85	16.77
68% Renewable/ 32% GHG-Free	24	1.43
50% Renewable/ 50% GHG-Free	-1	-4.97

CY 2026 Assumptions

- Changes relative to the 5-yr forecast from June 2023:
 - 3% increase in load forecast and 25% decrease in forecasted renewable supply
 - 100% and 314% increase in price forecasts for REC and GHG-Free attributes

Variable	Difference
Load (GWh)	3%
Renewable Supply (GWh)	-25%
REC Price (\$/MWh)	100%
GHG-Free Price (\$/MWh)	314%

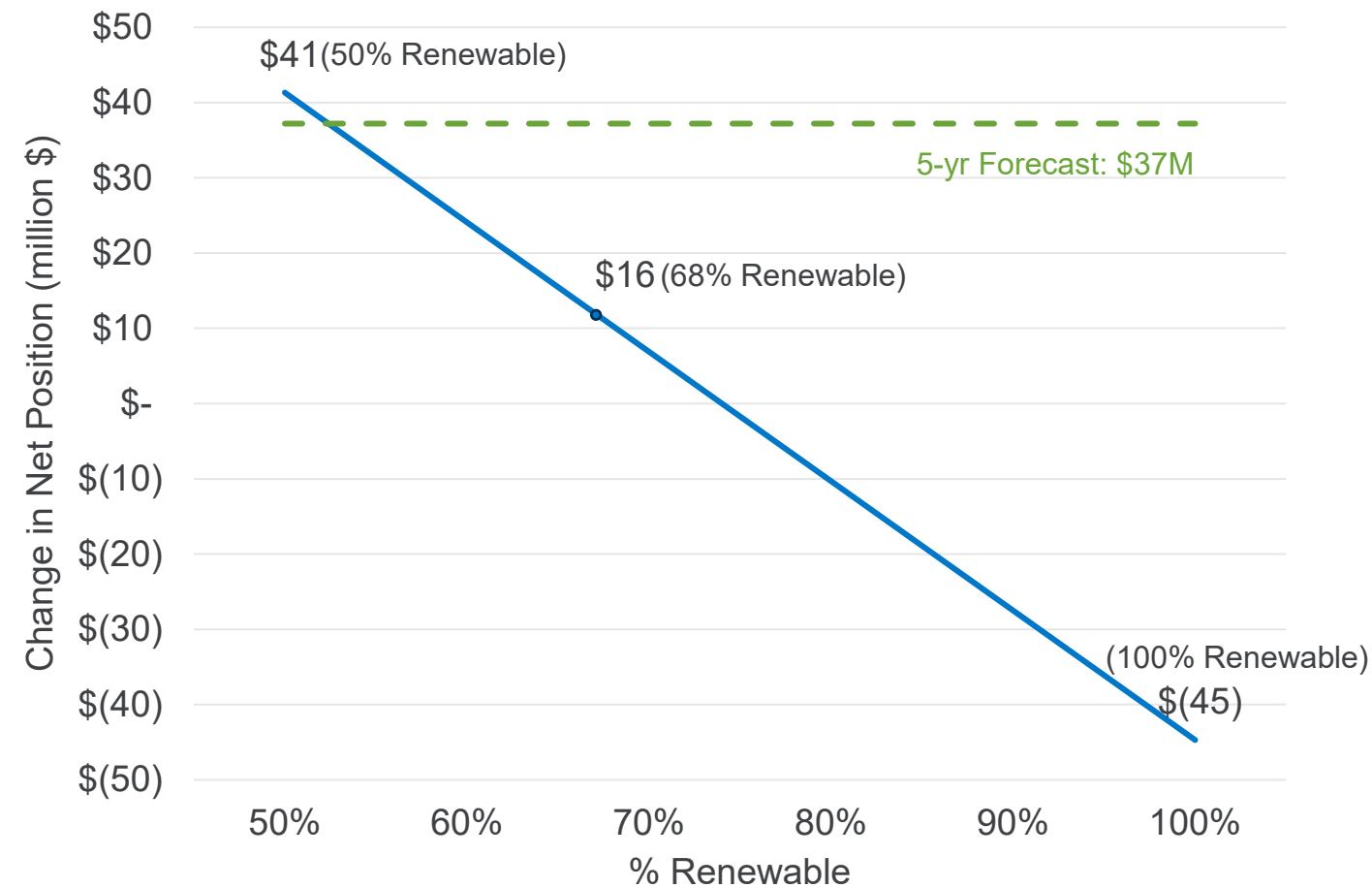
CY 2026 Summary of Costs

- Meeting the 100% renewable energy goal in CY 2026 could increase PCE's Cost of Energy by around ~\$27/MWh (\$122 million) relative to the 5-yr forecast

Scenario	Difference relative to 5-yr Forecast (million \$)	Difference relative to 5-yr Forecast (\$/MWh)
5-yr Forecast for CY 2026 (100% Renewable)	NA	NA
100% Renewable	122	26.92
78% Renewable/ 22% GHG-Free	76	15.74
50% Renewable/ 50% GHG-Free	28	3.75

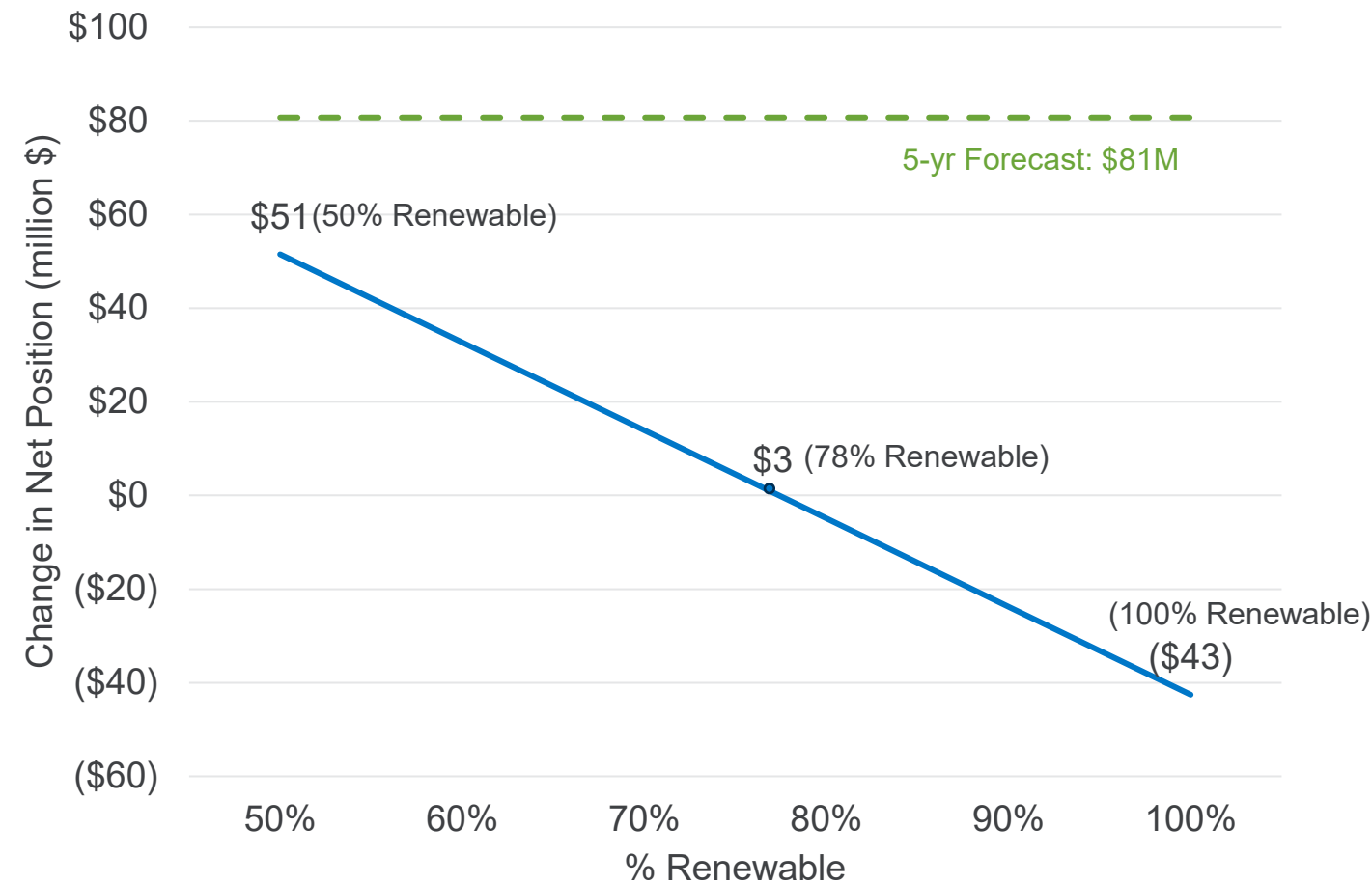
Change in Net Position - CY 2025

- For every 1% increase in our renewable goal, Change in Net Position will decrease by ~\$1.7 million in CY 2025



Change in Net Position - CY 2026

- For every 1% increase in our renewable goal, Change in Net Position will decrease by **~\$1.9 million** in CY 2026



Consideration & Options

An abstract background graphic featuring a large, light blue circle on the right side. To the left of the circle is a dense, irregular cluster of small yellow dots of varying sizes, some of which overlap the blue circle. The overall composition is minimalist and modern.

Decision Considerations

- Cost of Energy could be significantly reduced by adopting a more gradual approach to meeting the 100% annual renewable goal;
- Affordability and lower costs facilitate electrification efforts;
- Current strategy involves buying substantial amount of PCC1 RECs in the short term, but buying RECs doesn't provide additional emission reduction benefits to the grid;
- PCE's primary objective is to achieve a high time-coincident target, any new procurement should focus on best-fit resources for hourly matching;
- Maintain a 100% renewable product for interested customers.

Options

- Low Cost Option

- Higher of 50% annual renewable or Renewable Portfolio Standard (RPS) requirement, with the remainder fulfilled by carbon-free energy.

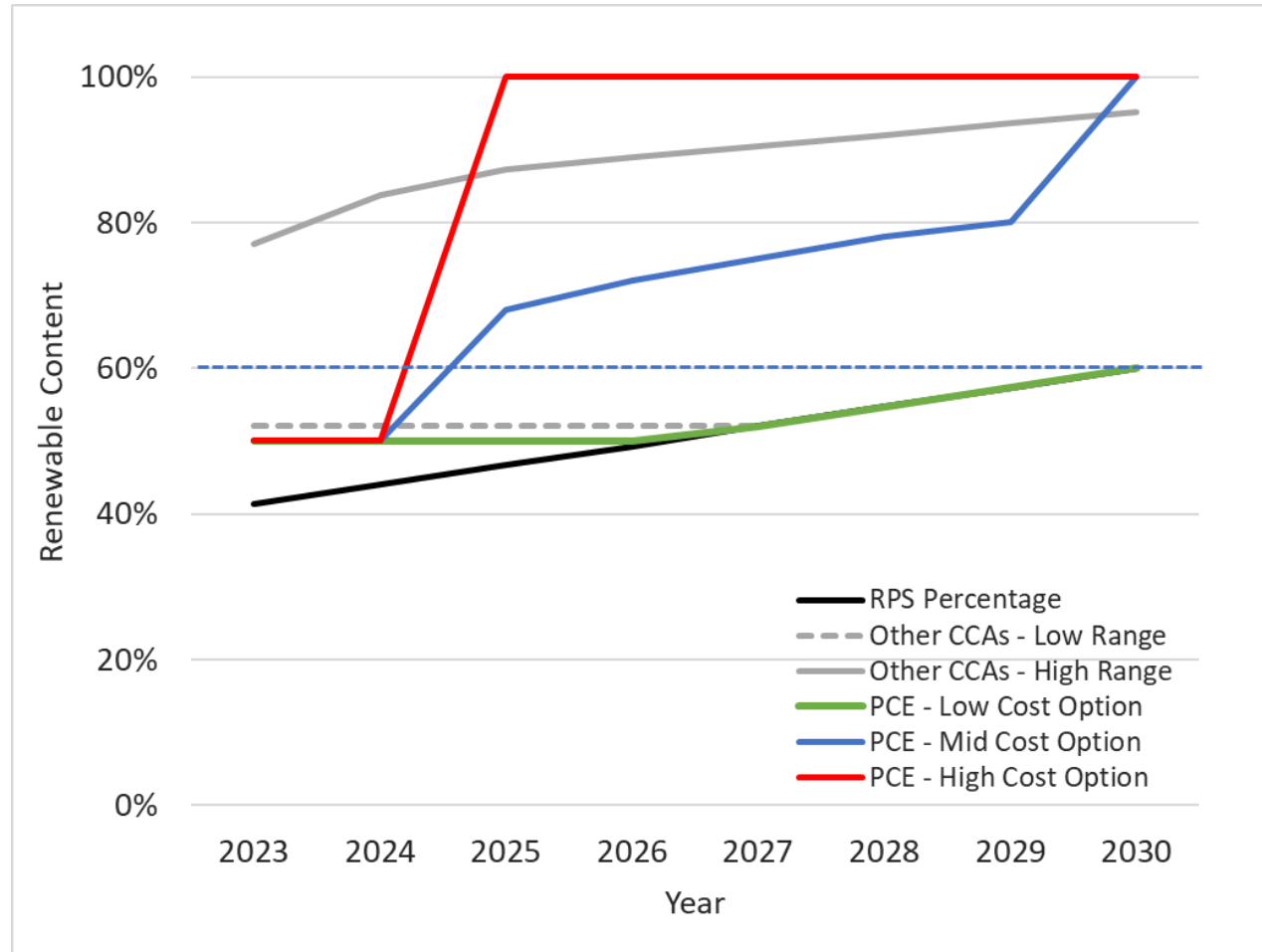
- Mid Cost Option

- Drive to 100% renewable portfolio in 2030 by procuring resources to maximize hourly renewable matching
 - Annual renewable percentage between CY 2025 and CY 2029 will continue on an upward trajectory with a minimum of **60%** but will remain flexible based on available renewable resources, ability to sign long-term PPAs that match our portfolio needs, and balance the need to keep customer costs in check;
 - Facilitate increase in renewable content through contracting new long-term resources based on best-fit to maximize PCE's 24/7 hourly renewable matching, and avoid procurement of short-term RECs;

- High Cost Option

- Achieve 100% Renewable by 2025 (i.e. the current target)

Benchmarking Against Other CCAs



Note: Renewable content data on other CCAs are based on research from available public sources, and may not reflect the most current status or projections.

Factors to Note:

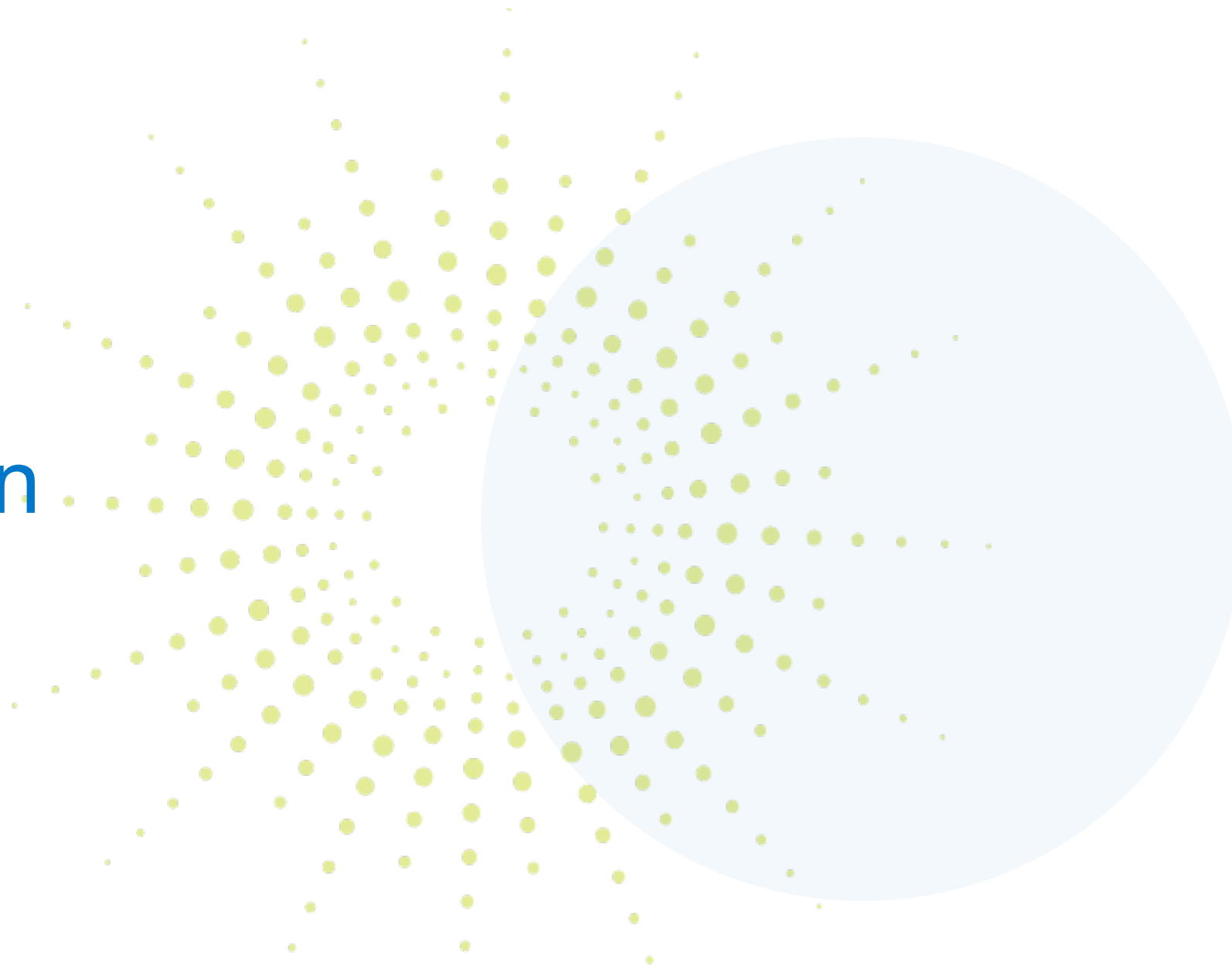
- PCE's portfolio and projections are optimized to minimize emissions and do not include:
 - PCC-2 RECs
 - PCC-3 RECs
 - Biomass
- 100% Renewable Product enrollment differs among CCAs

Estimated Cost Comparison

Year	LOW COST OPTION- Renewable Content	MID COST OPTION- Renewable Content (Illustrative)	HIGH COST OPTION- Renewable Content	MID COST OPTION Additional Cost (million \$) Relative to LOW COST OPTION*	HIGH COST OPTION Additional Cost (million \$) Relative to LOW COST OPTION
2025	50%	68%	100%	31	87
2026	50%	72%	100%	41	94
2027	52%	75%	100%	42	88
2028	54.7%	78%	100%	38	74
2029	57.3%	80%	100%	29	54
2030	60%	100%	100%	35	35
Total				216	432

*Estimates based on current analysis

Recommendation



Staff Recommendation

With input from the Procurement Subcommittee, Staff recommends pursuing the Mid Cost Option - Drive to 100% renewable portfolio in 2030 by procuring resources to maximize hourly matching.

Reasons:

1. Keep costs low for our customers; encourage electrification
2. Maintain a minimum of 60% renewable content for CY 2025-2029;
3. Continue to procure new renewable projects based on hourly matching;
4. Grow renewable content each year using long-term contracts, and avoid buying significant amounts of expensive PCC1 RECs in the interim;
5. Maintain flexibility by not having prescriptive targets each year.

Recommendation

Approval of Revisions to Peninsula Clean Energy's Organizational Priority Number 1 of the Strategic Plan from:

"Delivering 100% Renewable Energy Annually by 2025" to

"Delivering 100% Renewable Energy Annually by 2030 Through Strategic Procurement of Resources to Maximize Peninsula Clean Energy's 24/7 Hourly Renewable Matching"

Adjournment