



Staff Report Item 15

To:	Ava Community Energy Authority
From:	Howard Chang, Chief Executive Officer
Subject:	PG&E Nuclear Allocation Decision (Action Item)
Date:	September 18, 2024

Summary/Recommendation

Staff is seeking Board guidance in consideration of the nuclear greenhouse gas free (“GHG-free”) attributes being offered as a result of extended operations at Diablo Canyon Nuclear Power Plant (“DCPP”). If the Board desires to accept the nuclear attributes, staff recommends the adoption of the attached Resolution. Opting to decline the nuclear attributes requires no formal action by the Board.

Financial Impact

Fiscal impacts of this item are specific to energy procurement cost savings for the Bright Choice product and are realized beginning in 2025, when nuclear could offset large hydro procurement needs. There are no costs associated with acceptance of the allocation.

Analysis and Context

In 2020, load serving entities (“LSEs”) within PG&E service territory were offered GHG-free attributes from large hydro and nuclear power proportional to the LSE’s load. Ava, then EBCE, brought forth multiple informational and action items to the Board regarding the allocations. At the April 2020 Board meeting, the Board voted to accept the large hydro allocation and reject the nuclear allocation.

While Ava has received an allocation of GHG-free energy from PG&E's portfolio of large hydro resources from 2020 through 2024, there is uncertainty around what allocation structure will be in place for future years, or whether there will be an allocation to customers with a cost responsibility. Weather variability also plays an important factor in annual availability of large hydro generation.

When the Board acted in 2020, it was anticipated that DCPD would shut down in 2024-2025. On December 14, 2023, however, the California Public Utilities Commission ("CPUC") conducted a formal review process and adopted a final Decision¹ that extended operations at DCPD until October 31, 2029 for Unit 1 and October 31, 2030 for Unit 2 due to concerns related to grid capacity and reliability. This Decision requires PG&E to continue to offer LSEs the ability to use their share of DCPD's GHG-free attributes for their power content label using the existing process for voluntary offering as a model. This allocation process for the GHG attributes from extended operations at DCPD was formalized in an Advice Letter filed by PG&E on June 12, 2024²

There is no obligation to accept an allocation of nuclear energy, and acceptance or rejection of the nuclear allocation will have no impact on the extension of DCPD, which has already been approved. All customers pay for, and will continue to pay for, PG&E nuclear generation costs through the Power Charge Indifference Adjustment ("PCIA"). Whether or not Ava accepts the nuclear allocation has no impact on PCIA charges as the PCIA is a non-by-passable charge set annually by the CPUC.

The volume of nuclear power to be offered is still being determined and will be made to all LSEs across California, not just those within PG&E territory. Staff estimates that the allocation PG&E offers to Ava may contain ~610,000 mega-watt hour ("MWh") of nuclear power. Resource Adequacy is also included across all LSEs, as part of the allocation.

Scenarios for Board Consideration:

Scenario 0 – Do not accept nuclear. This would continue the status quo.

Scenario 1 – Ava accepts nuclear allocation up to Ava's load share percentage and uses it to offset large hydro procurement starting in 2025.

Scenario 2 – Ava accepts nuclear allocation and uses it to offset our carbon intensity, reducing unspecified power to 9% in 2025

Scenario 3 – Ava accepts nuclear allocation and further reduces our carbon intensity with additional large hydro or nuclear purchases.

Depending on the Board's action, the nuclear allocation could offset from 0% up to 100% of the unspecified emissions listed in the Bright Choice Power Content label in year one.

Should the Board opt to accept the nuclear allocation, the Board will need to specify which scenario Ava would follow as provided above. A Resolution is provided to formalize that action with the different scenarios provided in brackets, which would be selected as directed by the Board.

No formal action is required to decline the nuclear allocation as that is Ava's current status quo.

¹ D.23-12-036.

² Advice Letter 7295-E

Committee Recommendation

This item was presented to the Community Advisory Committee (“CAC”) on May 13, 2024. The CAC recommended delaying approval and expressed opposition to accepting the nuclear allocation.

Attachments

- A. Scenario 1: A Resolution of the Board of Directors of Ava Community Energy Authority to Accept Ava’s Allocation of GHG-Free Attributes from Extended Operations at DCPD through 2030, using the allocation to offset large hydro procurement with immediate savings starting in 2025
- B. Scenario 2: A Resolution of the Board of Directors of Ava Community Energy Authority to Accept Ava’s Allocation of GHG-Free Attributes from Extended Operations at DCPD through 2030, reducing unspecified power in direct proportion to the allocation amount year one, then offsetting large hydro procurement
- C. Scenario 3: A Resolution of the Board of Directors of Ava Community Energy Authority to Accept Ava’s Allocation of GHG-Free Attributes from Extended Operations at DCPD through 2030, and additional procurement of large hydro or nuclear to reduce unspecified to 0% in 2025
- D. Nuclear Allocation Decision Presentation

RESOLUTION NO. R-2024-xx

A RESOLUTION OF THE BOARD OF DIRECTORS

OF AVA COMMUNITY ENERGY AUTHORITY APPROVING AVA'S ACCEPTANCE OF THEIR ALLOCATION OF GHG-FREE ATTRIBUTES FROM EXTENDED OPERATIONS AT DIABLO CANYON NUCLEAR POWER PLANT (DCPP)

WHEREAS Ava Community Energy Authority ("Ava") was formed as a community choice aggregation agency ("CCA") on December 1, 2016, under the Joint Exercise of Powers Act, California Government Code sections 6500 *et seq.*, among the County of Alameda, and the Cities of Albany, Berkeley, Dublin, Emeryville, Fremont, Hayward, Livermore, Piedmont, Oakland, San Leandro, and Union City to study, promote, develop, conduct, operate, and manage energy-related climate change programs in all of the member jurisdictions. The cities of Newark and Pleasanton, located in Alameda County, along with the City of Tracy, located in San Joaquin County, were added as members of Ava and parties to the Joint Powers Agreement ("JPA") in March of 2020. The city of Stockton was added as a member to Ava in September of 2022. The city of Lathrop was added as a member to Ava in October of 2023. San Joaquin County was added as a member to Ava in July 2024. On October 24, 2023, Ava legally adopted the name Ava Community Energy Authority, where it had previously used the name East Bay Community Energy Authority since its inception.

WHEREAS the California Public Utilities Commission's ("CPUC") December 14, 2023 final decision D.23-12-036 ("Decision") extended operations at Diablo Canyon Nuclear Power Plant ("DCPP") until October 31, 2029 (Unit 1) and October 31, 2030 (Unit 2) due to insufficient CAISO grid capacity and reliability concerns;

WHEREAS the Decision requires PG&E to offer load serving entities the ability to use their share of DCPP's Greenhouse Gas-free ("GHG-free") attributes for their power content label; and

WHEREAS Ava is eligible to receive their share of GHG-free attributes from extended operations at DCPP.

NOW, THEREFORE, THE BOARD OF DIRECTORS OF AVA COMMUNITY ENERGY AUTHORITY DOES HEREBY RESOLVE AS FOLLOWS:

Section 1. The Board of Directors approves Ava's acceptance of their allocation of GHG-free attributes from extended operations at DCPP through 2030, using the allocation to offset large hydro procurement with immediate savings starting in 2025.

ADOPTED AND APPROVED this 18th day of September, 2024.

Jack Balch, Chair

ATTEST:

Adrian Bankhead, Clerk of the Board

RESOLUTION NO. R-2024-xx

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NOW, THEREFORE, THE BOARD OF DIRECTORS OF AVA COMMUNITY ENERGY AUTHORITY DOES HEREBY RESOLVE AS FOLLOWS:

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WHEREAS Ava is eligible to receive their share of GHG-free attributes from extended operations at DCPP.

NOW, THEREFORE, THE BOARD OF DIRECTORS OF AVA COMMUNITY ENERGY AUTHORITY DOES HEREBY RESOLVE AS FOLLOWS:

Section 1. The Board of Directors approves Ava's acceptance of their allocation of GHG-free attributes from extended operations at DCPP through 2030, and additional procurement of large hydro or nuclear to reduce unspecified to 0% in 2025.

ADOPTED AND APPROVED this 18th day of September, 2024.

Jack Balch, Chair

ATTEST:

Adrian Bankhead, Clerk of the Board

Nuclear Allocation Decision

September 18, 2024



1. Introduction
2. Background
3. Baseline Facts
4. Scenarios for Board consideration
5. Appendix



Introduction

- In light of the extension of Diablo Canyon Nuclear Power Plant (DCPP) to 2029/2030 timeframe, staff is seeking direction from the board on future acceptance or rejection of the GHG-free energy attributes
- CA State Legislature & Governor's office voted to extend DCPP operations in 2022 for system reliability and GHG emissions reductions purposes while requiring further development of a Clean Energy Reliability Investment Plan
 - CPUC subsequently formalized the extension in 2023
- PG&E will offer an allocation this fall, likely in the October/November timeframe, with delivery beginning Jan 2025
- PG&E 2023 power content is anticipated to be ~53% nuclear, 34% renewables, 13% large hydro
 - PG&E elects not to disclose significant natural gas emissions due to excess generation
- Ava Bright Choice 2023 power content is ~55% renewables, 34% large hydro, and ~11% unspecified system power



Summary

- Ava's decision to accept or reject the allocation of nuclear GHG-free attributes will not impact the operational extension of DCPD and will not impact CA's energy mix
 - Resource adequacy benefits are shared across all load serving entities regardless of this decision
- Energy resource diversification is critical to attaining Ava's and CA's clean energy goals. DCPD will continue to operate through 2030 regardless of Ava's decision and therefore is not additive to system diversification
- The benefits of accepting nuclear are cost savings, GHG emissions reductions, and more transparent GHG emissions disclosures from PG&E, which should be considered along with our customer & community preferences on power mix
- Accept/Reject Scenarios:
 - Scenario 0: Do not accept nuclear
 - Scenario 1: Accept nuclear, procure less large hydro = ~\$20MM savings in 2025 relative to budget
 - Scenario 2: Accept nuclear, procure less system power = \$0 impact in 2025 with future savings
 - Scenario 3: Accept nuclear, procure more GHG-free energy to eliminate system power = ~\$10-16MM cost in 2025



Background



Information on Pending GHG-free Nuclear Offer

- The pending nuclear offer will be made to all load serving entities across California, not just those within PG&E's service area.
- PG&E filed Advice Letter 7295-E on June 12th outlining the allocation process. They will offer both nuclear and hydroelectric power which we could select together or separately
- PG&E will offer the nuclear power based on load share through 2030 on an annual basis. Offers will need to be accepted annually.
 - Historically, there has not been flexibility to accept a partial allocation – it has been acceptance or rejection only
- PG&E is expected to make the allocation offer in fall 2024. Deliveries would begin in January 2025.
 - Historically PG&E has issued a notice with a draft confirm in early November of each year followed by approximately two weeks to review the agreement, a PG&E review period, and another approximately three weeks for execution to arrive at a fully executed agreement in December.
- Staff is seeking board feedback in consideration of these anticipated nuclear GHG-free attributes being offered.
- Note that acceptance or rejection of these nuclear attributes will have no impact on the extension of Diablo Canyon, which has already been approved.



Overview:

- SB 846 (Dodd) authorizes the extension of the DCPD beyond the previous expiration dates (2024 for Unit 1 and 2025 for Unit 2), to up to five additional years (no later than 2029 and 2030, respectively)
- Signed by Governor Newsom in September of 2022

Further Details:

- Requires the CPUC to set new retirement dates for DCPD
- Authorizes \$1.4B loan (appropriated \$600M in 2022 and \$400M in 2024) to PG&E to facilitate the extension of the plant
- Provides expedited permitting to facilitate relicensing of DCPD
- Authorizes collections of non-bypassable charges from electric ratepayers from all LSEs (including Ava) for ongoing DCPD costs
- Requires CEC to develop a Clean Energy Reliability Investment Plan to accelerate clean energy resources and reliability

Voting Process:

- SB 846 passed by a wide, bipartisan margin: 69-3 in the CA Assembly and 31-1 in the CA Senate

Bill Rationale:

- SB 846: extending the DCPD "may be necessary to improve statewide energy system reliability and to reduce the emissions of greenhouse gases while additional renewable energy and zero-carbon resources come online, until those new renewable energy and zero-carbon resources are adequate to meet demand." The Legislature finds "...a renewed license term is prudent, cost effective, and in the best interests of all California electricity customers."



Regulatory Background

- **On December 14, 2023, the CPUC adopted a final Decision that extended operations at Diablo Canyon Nuclear Power Plant (DCPP) until October 31, 2029 (Unit 1) and October 31, 2030 (Unit 2) due to insufficient CAISO grid capacity and reliability concerns.**
 - The Decision requires PG&E to offer LSEs the ability to use their share of DCPP's GHG-free attributes for their power content label using the existing process for voluntary offering as a model.
 - Ava has used estimates of the GHG free attributes in the included scenarios in this ppt as final allocation ratios will not be released until summer 2024.
 - Note: Resource Adequacy is not a voluntary allocation and is included across all LSEs
- **While Ava has received an allocation of carbon free energy from PG&E's portfolio of large hydro resources from 2020 through 2024, there is uncertainty around what structure will be in place for future years and whether a new market price benchmark will be incorporated, or if there will be an allocation to customers with a cost responsibility.**
 - Note that large hydro allocations may be reduced going forward as PG&E may have discretion over allocation offerings and large hydro market purchases are increasingly scarce and variable year to year.
- **The current emissions accounting methodology is tracked on an annual basis and the enclosed emissions estimates in this presentation reflect the current rules. Hourly emissions accounting rules are being contemplated for the Power Source Disclosure (PSD) program beginning in 2028. This could meaningfully change Ava's emissions levels.**



Safety Committee (DCISC)

- Requires continuation of the Independent Safety Committee for DCP, and requires the PUC to fund the committee
 - PUC under existing authority, has already established the Diablo Canyon Independent Safety Committee (DCISC) to make recommendations to review and enhance safety of operations at DCP
 - DCISC holds regular public meetings, with the last meeting held February 21-22, 2024.
 - Presentations and fact-finding reports (on risk assessment, maintenance, seismic assessments, training etc.) are posted publicly to their website
 - Fact-finding reports include Nuclear Regulatory Commission inspection findings (summarized through over 5600 Inspection hours at DCP in 2023)
- Required that an updated seismic and risk assessment be done prior to August of 2024 when the (current operating license expires)
- An updated seismic assessment was conducted from 6/2023 to 1/2024 in response to SB 846 (no updates recommended)
- Ava staff is reliant on DCISC determinations on safe operations and does not have deep expertise on nuclear operations and safety. DCISC findings and reports are provided at <https://www.dcisc.org/annual-reports/>



Baseline Facts

- Current 2030 Bright Choice Procurement Schedule
- Ava and PG&E 2023 Power Content
- CCA Nuclear Allocations



2030 Goal for 100% Clean Bright Choice Service

- The board approved the following Renewable Energy and Carbon Free Procurement schedule in April 2022
 - *Indicates subsequent board approved changes to the procurement schedule

	Bright Choice				CA-RPS %
Year	Renewable %	Carbon Free %	Unspecified %	Estimated PSDR Emission Factor	Renewable %
2018	41%	62%	38%	n/a	29%
2019	60%	87%	13%	n/a	31%
2020	40%	55%	45%	591	33%
2021	42%	60%	40%	564	36%
2022	49%*	72%*	28%*	496	39%
2023	54%*	76%*	24%*	503*	41%
2024	52%	81%*	19%*	403*	44%
2025	56%	81%*	19%*	371*	47%
2026	60%	81%	19%	315	49%
2027	64%	85%	15%	241	52%
2028	67%	90%	10%	163	55%
2029	71%	95%	5%	83	57%
2030	75%	100%	0%	-	60%

Source: Board Item from October 18, 2023 plus subsequent changes indicated by *



2023 Draft Power Content

(most recent reporting year)

	Bright Choice	Renewable 100	PG&E
	Percent of Total Retail Sales	Percent of Total Retail Sales	Percent of Total Retail Sales
Renewable Procurements	54.6%	100.0%	34.0%
Biomass & Biowaste	13.0%	0.0%	
Geothermal	2.2%	0.0%	
Eligible Hydroelectric	2.5%	0.0%	34.0%
Solar	5.6%	67.5%	
Wind	31.3%	32.5%	
Coal	0.0%	0.0%	0.0%
Large Hydroelectric	34.1%	0.0%	13.0%
Natural gas	0.0%	0.0%	0.0%
Nuclear	0.0%	0.0%	53.0%
Other	0.0%	0.0%	0.0%
Unspecified Power	11.4%	0.0%	0.0%
Total	100.0%	100.0%	100.0%

GHG Emissions Intensity (converted to lbs CO₂e/MWh)

374

-

PG&E claims 0 emissions in 2023

Source: <https://investor.pgecorp.com/news-events/press-releases/press-release-details/2024/PGE-Customers-Electricity-100-Greenhouse-Gas-Free-in-2023/default.aspx>



PG&E Historical Power Mix

	2020	2021	2022	2023
Renewables	31%	48%	38%	34%
Large Hydroelectric	10%	4%	8%	13%
Natural Gas	16%	9%	5%	0%
Nuclear	43%	39%	49%	53%

- Based on today's Power Content Regulations, if generation exceeds load a load serving has discretion for what it discloses.
- PG&E has considerable natural gas generation that it elects not to disclose
- Ava has sought to adjust the Power Content Label rules to require gas emissions unsuccessfully



CCA Background

- Approximately half of all CCAs statewide have accepted nuclear historically (see slide 15), while half have rejected
- The majority of PG&E-territory CCAs have historically rejected nuclear (see table below)
- Several CCAs are currently revisiting the decision on accepting/rejecting nuclear:
 - MCE brought this topic to their Technical Committee and Executive Committee with unanimous approval to accept nuclear; plan to bring to their full board in September
 - Sonoma Clean Power, Peninsula Clean Energy, and other CCAs are currently evaluating based on affordability concerns

Retail Suppliers	Retail Sales (MWh)	GHG Intensity (lbs CO ₂ e/MWh)	Eligible Renewables (TOTAL)	Large Hydro	Natural Gas	Unspecified Power	Nuclear
Pacific Gas and Electric Company - Base Plan	30,291,314	56	38.3%	7.6%	4.8%	0.0%	49.3%
Pioneer Community Energy - Base Service	1,633,901	343	44.1%	1.3%	0.0%	27.0%	27.6%
San José Clean Energy - GreenSource	3,476,520	116	59.2%	7.4%	0.0%	8.6%	24.8%
Silicon Valley Clean Energy - Green Start	3,605,920	72	44.9%	30.8%	0.0%	0.0%	24.3%
Sonoma Clean Power Authority - CleanStart	2,081,597	112	50.3%	40.0%	0.0%	8.7%	0.9%
MCE - 2022 MCE Light Green Power Mix	5,307,105	44	59.6%	39.5%	0.0%	0.5%	0.4%
East Bay Community Energy - Bright Choice	5,076,143	496	49.4%	21.9%	0.0%	28.4%	0.2%
Central Coast Community Energy - 3Cchoice	5,020,658	637	35.8%	5.9%	0.0%	58.3%	0.0%
CleanPowerSF - Green	2,621,385	47	59.9%	37.2%	0.0%	2.9%	0.0%
Peninsula Clean Energy Authority - ECOplus	3,089,082	9	51.8%	48.2%	0.0%	0.0%	0.0%
Redwood Coast Energy Authority - REpower	591,992	49	50.0%	45.0%	0.0%	5.0%	0.0%
Valley Clean Energy Alliance - Standard Green	732,719	709	17.5%	7.4%	0.0%	75.1%	0.0%



2022 Power Content Labels for CCAs with nuclear content >5%

Attachment Staff Report Item 15D

Retail Suppliers	Retail Sales (MWh)	GHG Intensity (lbs. CO2e/MWh)	Eligible Renewables (TOTAL)	Large Hydro	Natural Gas	Unspecified Power	Nuclear
San José Clean Energy - GreenValue	202,231	210	40.2%	9.2%	0.0%	19.8%	30.9%
Pioneer Community Energy - 2022 Pioneer Community Energy Base Service	1,633,901	343	44.1%	1.3%	0.0%	27.0%	27.6%
Orange County Power Authority - 2022 OCPA Basic Choice	177,052	503	62.3%	12.4%	0.0%	0.0%	25.3%
San José Clean Energy - GreenSource	3,476,520	116	59.2%	7.4%	0.0%	8.6%	24.8%
Silicon Valley Clean Energy - Green Start	3,605,920	72	44.9%	30.8%	0.0%	0.0%	24.3%
Energy for Palmdale's Independent Choice - 2022 EPIC Power	52,416	458	34.3%	0.0%	0.0%	42.8%	22.9%
Lancaster Choice Energy - 2022 Clear Choice	611,814	588	33.6%	0.4%	0.0%	56.4%	9.7%
San Jacinto Power - 2022 SJP PrimePower Power Mix	172,810	633	30.8%	3.3%	0.0%	60.1%	5.8%
Rancho Mirage Energy Authority - 2022 Base Choice	282,288	612	32.3%	3.0%	0.0%	59.0%	5.7%
Pomona Choice Energy - 2022 Pomona Choice	423,784	611	32.9%	3.2%	0.0%	58.3%	5.7%
Apple Valley Choice Energy - 2022 AVCE Core Choice	254,247	693	23.6%	3.2%	0.0%	67.6%	5.6%
Pico Rivera Innovative Municipal Energy - 2022 Prime Power	211,547	538	40.8%	3.3%	0.0%	50.5%	5.4%
Pacific Gas and Electric Company - Base Plan	30,291,314	56	38.3%	7.6%	4.8%	0.0%	49.3%
Pacific Gas and Electric Company - 50% Solar Choice	31,563	46	67.2%	3.8%	4.3%	0.0%	24.6%
Ava/East Bay Community Energy - Bright Choice	5,076,143	496	49.4%	21.9%	0.0%	28.4%	0.2%
2022 CA Utility Average and Total Retail Sales	243,240,118	430	35.8%	9.2%	36.4%	7.1%	9.2%



Source: https://www.energy.ca.gov/sites/default/files/2024-02/2022_Power_Content_Labels_Sortable_Table_ada.xlsx

Scenarios for Board Consideration



Scenarios for Board Consideration

Scenario 0 – Do Not Accept Nuclear

- Continue towards 2030 Renewable Energy (RE) and Carbon Free (CF) targets

Scenario 1 – Accept Nuclear + reduce large hydro

- No change to 2030 RE or CF targets
- Use nuclear to offset hydro with immediate cost savings in 2025
- ~\$20MM savings in 2025

Scenario 2 – Accept Nuclear + reduce unspecified

- No change to 2030 RE or CF targets
- Reduce unspecified to 9% year one, then offset hydro needs

Scenario 3 – Accept Nuclear + eliminate system power

- No change to 2030 RE or CF targets
- Buy additional large hydro/nuclear to reduce unspecified to 0%
- ~\$10-16MM cost in 2025



Details: Scenario 0 – Do Not Accept Nuclear Allocation

- No financial impact given this is the base case
 - Note that based on energy market volatility and increased demand for renewables staff is evaluating whether an upward rate adjustment of R100 is needed
- Power content follows plan for 2030
- * Indicates board approved procurement changes based on annual budgeting process

	Bright Choice				CA-RPS %
Year	Renewable %	Carbon Free %	Unspecified %	PSDR Emission Factor Estimate	Renewable %
2018	41%	62%	38%	n/a	29%
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2029	71%	95%	5%	83	57%
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Details: Scenario 1 – Accept Nuclear Allocation

General

- No change to Renewable Energy (RE) or Carbon-Free (CF) targets
- Procure less large hydro resulting in cost savings year one

Financial

	2025	2026	2027	2028	2029	2030
Potential savings on hydro	\$ 19,560,851	\$20,661,212	\$21,706,103	\$ 21,438,734	\$21,976,609	\$20,484,860

Power Content

Bright Choice Power Content (estimated)	2025	2026	2027	2028	2029	2030
Renewable Energy	56%	60%	64%	67%	71%	75%
Large Hydro	15%	10%	10%	12%	14%	15%
Nuclear	10%	11%	11%	11%	10%	10%
Unspecified	19%	19%	15%	10%	5%	0%
GHG Emissions	371	371	284	191	97	0
<i>Reference: Current Plan Unspecified</i>	<i>19%</i>	<i>19%</i>	<i>15%</i>	<i>10%</i>	<i>5%</i>	<i>0%</i>



Details: Scenario 2 – Accept Nuclear Allocation + Reduce Unspecified to 9%

Attachment Staff Report Item 15D

General

- No change to RE or CF targets; Reduce unspecified to 9% year one, then offsets hydro needs
- Reduced emissions starting in 2025 and savings starting in 2027

Financial

	2025	2026	2027	2028	2029	2030
Potential savings on hydro	-	-	\$5,751,975	\$15,399,916	\$10,920,175	\$20,484,860

Power Content

Bright Choice Power Content (estimated)	2025	2026	2027	2028	2029	2030
Renewable Energy	56%	60%	64%	67%	71%	75%
Large Hydro	25%	21%	18%	15%	19%	15%
Nuclear	10%	11%	11%	11%	10%	10%
Unspecified	9%	8%	7%	7%	0%	0%
GHG Emissions	273	262	207	162	97	0
<i>Reference: Current Plan Unspecified</i>	19%	19%	15%	10%	5%	0%



Details: Scenario 3 – Accept Nuclear Allocation + Additional large hydro or nuclear

General

- No change to RE or CF targets; Reduce unspecified and buy additional large hydro or nuclear to eliminate unspecified in 2025 (emissions would be from PCC2s only)
- Then offsets hydro needs starting in 2028

Financial

	2025	2026	2027	2028	2029	2030
Potential savings on hydro	-	-	-	\$1,309,341	\$10,920,175	\$20,484,860
Cost for add'l nuclear (\$20)	\$9,647,593	\$8,162,906	\$2,083,163			
Cost of add'l large hydro (\$34)	\$16,400,908	13,876,940	\$6,249,488			

Power Content

Bright Choice Power Content (estimated)	2025	2026	2027	2028	2029	2030
Renewable Energy	56%	60%	64%	67%	71%	75%
Large Hydro	25%	21%	21%	22%	19%	15%
Nuclear	10%	11%	11%	11%	10%	10%
Add'l Hydro or Nuclear	9%	8%	4%	0%	0%	0%
Unspecified	0%	0%	0%	0%	0%	0%
GHG Emissions	191	190	141	96	50	0
<i>Reference: Current Plan Unspecified</i>	<i>19%</i>	<i>19%</i>	<i>15%</i>	<i>10%</i>	<i>5%</i>	<i>0%</i>



2025 Bright Choice Estimated Power Content by Scenario

2025 Bright Choice Power Content (estimated)	Scenario 0*	Scenario 1	Scenario 2	Scenario 3
Renewable Energy	56%	56%	56%	56%
Large Hydro	25%	15%	25%	25%
Nuclear	0%	10%	10%	10%
Additional Hydro or Nuclear	0%	0%	0%	9%
Unspecified	19%	19%	9%	0%
GHG Emissions	371	371	230	191
Estimated (Savings)/Cost	\$0	(\$20MM)	\$0	\$10-16MM

*Based on board adopted 2030 Carbon-Free Goal plus subsequent budget approvals



Conclusion

- Staff is seeking board direction at this time in preparation for the pending nuclear allocation from PG&E in Fall 2024
- Ava's decision to accept or reject the allocation of nuclear GHG-free attributes will not impact the operational extension of DCPD and will not impact CA's energy mix
- The benefits of accepting nuclear are cost savings, GHG emissions reductions, and more transparent GHG emissions disclosures from PG&E, which must be considered along with our customer & community preferences on power mix
- Accept/Reject Scenarios:
 - Scenario 0: Do not accept nuclear
 - Scenario 1: Accept nuclear, procure less large hydro = ~\$20MM savings in 2025 relative to budget
 - Scenario 2: Accept nuclear, procure less system power = \$0 impact in 2025 with future savings
 - Scenario 3: Accept nuclear, procure more GHG-free energy to eliminate system power = ~\$10-16MM cost in 2025
- Recommendation to the board to consider a phased voting:
 - Phase A: Vote on Reject or Accept Nuclear GHG Free attributes from Diablo Canyon through 2030
 - Phase B: If accepted, then vote on Scenarios 1, 2, or 3



Appendix



Ava Background

- Ava brought forth multiple informational and action items to the Board regarding Nuclear allocations in 2019 and 2020.
- In the **April 2020** Board meeting, a decision was passed to accept the large hydro allocation and reject the nuclear allocation.
 - Decision passed with a vote of 10 yes and 5 no; No's were in favor of accepting the nuclear allocation
 - No votes: Hayward, Newark, Pleasanton, Piedmont, Livermore
 - 80+ public comments in opposition to accepting Nuclear
- In the **December 2020** Board meeting, a decision was passed to accept the nuclear allocation to resell the attributes at equal to or >\$0.
 - This decision was in part passed because PG&E is able to disclose a lower GHG emissions level due to high nuclear content. It is able to elect not to disclose its natural gas procurement in favor of carbon-free nuclear.
 - Decision passed with 10 yes and 2 No; No's were in favor of accepting and retaining the nuclear
 - No votes: Hayward, Albany
 - 10+ public comments in opposition to this structure
- Following the formal extension of Diablo Canyon, the 2024 allocation decision was brought forward as an informational item to the Ava board for consideration in April 2024



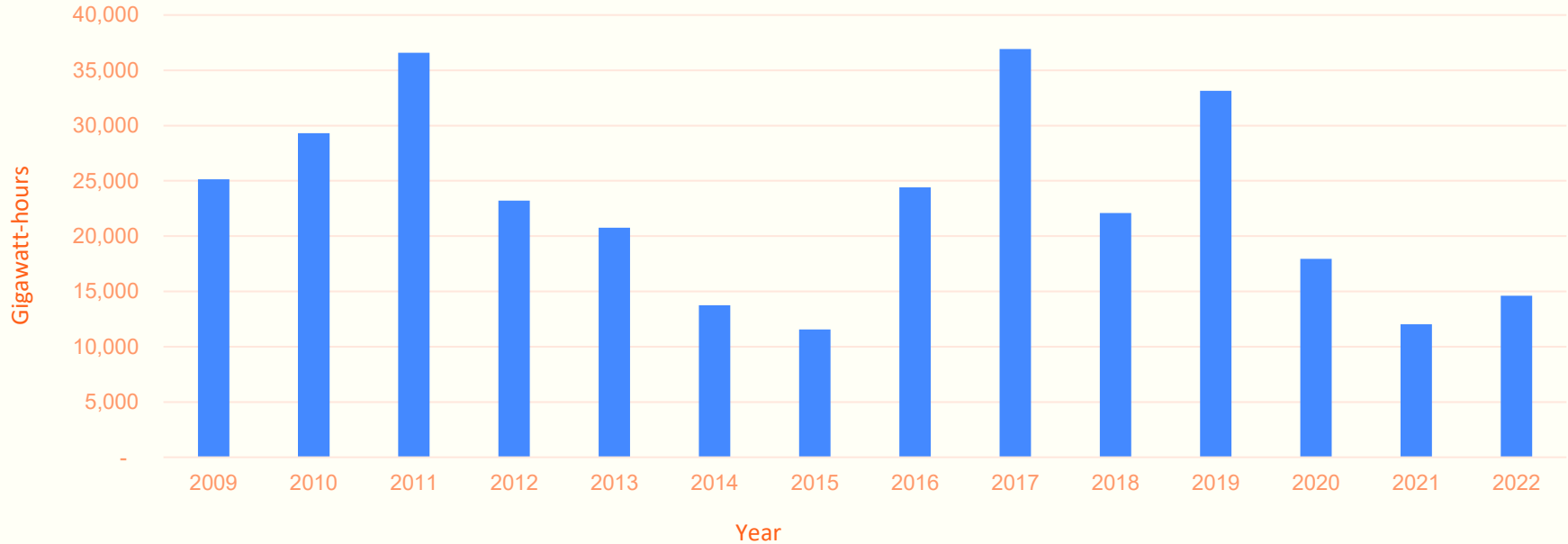
Energy Market Background

- **Energy Market Pricing Dynamics**

- Historically PCC1 Renewable Energy Credits (RECs) have generally priced in the \$10 to \$15/MWh range and are currently pricing in the \$80 to \$90/MWh range.
- Historically Large Hydro GHG-free attributes have generally priced in the \$3 to \$6/MWh range and are currently pricing in the \$25 to \$35/MWh range.
- Historically nuclear GHG-free attributes have not been transacted and CCAs have shown varying interest with low interest in procuring it outside of accepting the PG&E allocation. There appears to be increasing interest from CCAs to accept and potentially procure additional nuclear currently.
- The **sharp increase in pricing** is driven by several factors, including limited generating capacity in CAISO, significant increased clean energy demand in California by CCAs and Corporates accelerating beyond SB100, increased clean energy demand outside of California impacting imports, and increased weather variability impacting supply. This weather variability has a particularly pronounced effect on large hydro resources inside and outside of CAISO.
- There continues to be upward pressure on pricing on the horizon and there are indications that there will likely be market demand for nuclear by other load serving entities.
- Pricing implications on the following slides are based on current market conditions and subject to increased volatility.



Large Hydro Production in California



Source: California Energy Commission "[Total System Electric Generation 2009-2022 with totals_ada.xlsx](#)"



Nuclear Power Production

- Nuclear plants operate at a steady state with small variations for maintenance
- Nuclear power covers about 2,000 MW of baseline load
- Nuclear power production represented by the grey strip in the charts below.

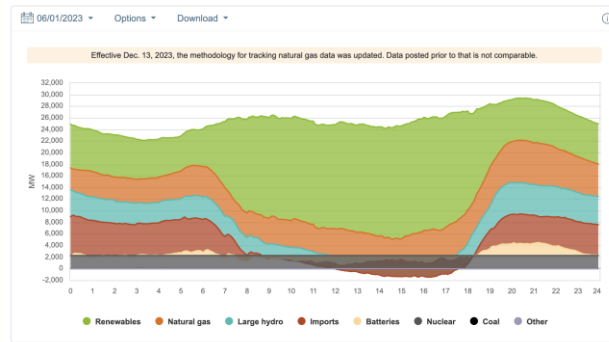
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3/01/24

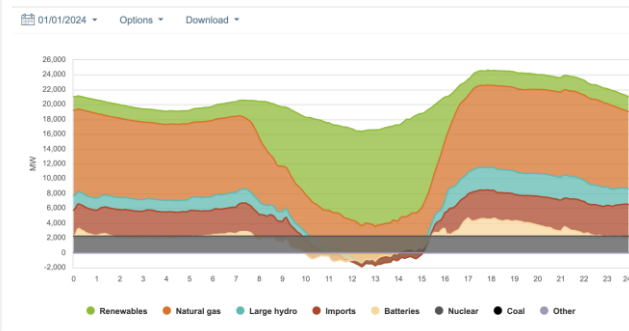
Supply trend

Energy in megawatts broken down by resource in 5-minute increments.



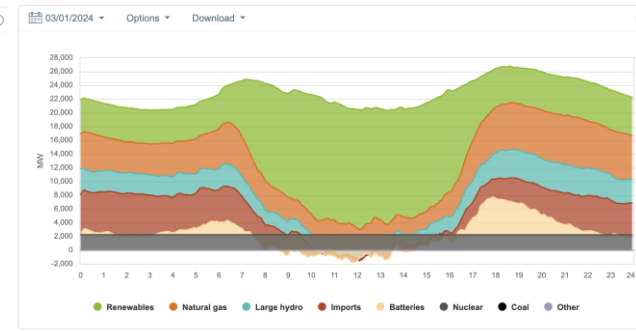
Supply trend

Energy in megawatts broken down by resource in 5-minute increments.



Supply trend

Energy in megawatts broken down by resource in 5-minute increments.



Questions?

Additional Resources:

1. <https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M521/K496/521496276.PDF>
2. https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=202120220SB846
3. <https://www.pge.com/assets/pge/docs/about/pge-systems/seismic-assessment.pdf>
4. <https://www.dccsc.org/>
5. <https://www.dccsc.org/annual-reports/>

