Staff Report C6

TO: East Bay Community Energy Community Advisory Committee

FROM: Nick Chaset, Chief Executive Officer

SUBJECT: **Carbon-Free Allocation (Informational)**

DATE: January 21, 2020

Recommendation

Receive an update on the questions asked in the December 18, 2019 Board Meeting to guide the policy direction relative to the potential pathways.

Background and Discussion

After initial discussions with the EBCE Board, Executive Committee, and Community Advisory Committee at the November and December 2019 Public Meetings, specific follow-up questions were posed for direct response from staff. The purpose of this memorandum is to respond to those questions.

1. CAC Questions on Risks and Liabilities

1. Reputation and Customer Retention: We are discussing replacing our power mix, marketed as "clean power" with a high level of renewables (which 80-90% support in the general population) with nuclear power (that faces about 50% opposition in the general population, potentially more in California). Whatever the debate about nuclear and carbon free, it is not "clean".
    a. **How would EBCE address the reputation risk if a nuclear allocation is accepted?**
        i. EBCE continues to build brand awareness and customer loyalty in just our second year of operations. We have consistently focused on cleaner power, competitive rates, and reinvestment in the community as the key messages in our customer communications. We would continue to do so by highlighting the amount of carbon-free and renewable energy content in our products, as well as the cost-saving value proposition and advancements of local programs. When evaluating EBCE's reputation risk with regard to a carbon-free allocation, we must also consider the risks of higher rates and/or lower carbon-free supply if the nuclear allocation is not accepted. While avoiding the word 'nuclear' on EBCE's Power Content Label (PCL) may be a high priority for some advocates and community groups, avoiding rate increases may be a higher priority to a

larger number of community members and customers. Previous market research has found EBCE's top customer concern is cost.

b. **What is the anticipated cost of addressing that risk via marketing for our agency? For CCAs in general?**
   i. EBCE can leverage our social media accounts and website to provide information to customers about our power mix and the value of being an EBCE customer.

      EBCE staff would also work with its member jurisdictions and community partners to clarify questions and address concerns through newsletter articles and/or social media posts, in-person Q&A sessions (similar to our previous coffee shop tour for "Understanding Your Bill"), engage with our volunteer "Friends of EBCE" to provide talking points to share with friends and neighbors, and other direct outreach opportunities customized to address feedback from the community.

      In addition, the following are potential channels and associated costs that EBCE could employ in communicating the value of EBCE to customers. These more traditional marketing channels would focus on highlighting the values offered by EBCE and provide direction on how to get more information:

      1. Direct mail:~$180,000 for format similar to PCL
      2. On-line Advertising: $15,000 for 1.5M impressions with digital banners
      3. Streaming video ads: $20,000 for ~400,000 views
      4. Social ads: $20,000
      5. Print Advertising: $15,000 for variety of sizes in main media outlets and in-language
      6. Radio Advertising: $20,000, in-language
      7. Cable Advertising: $20,000 for 900 spots
      8. Town Halls/Public Workshops: $15,000

      EBCE may elect to do outreach or marketing to different groups through different channels. For example, customers who voluntarily opted up to Brilliant 100 or Renewable 100, customers that have installed solar, or customers with electric vehicles may be more likely to have concerns about nuclear energy - we could focus direct mailers to this population and offer a special hotline to address their concerns.

c. **What is the expected opt-out rates and how does that affect our future revenue?**
   i. Market research has found that the top customer concern is cost. As such, we anticipate minimal opt-outs if accepting the nuclear allocation allows EBCE to maintain the current value proposition.

   ii. There may be some opt-outs experienced by customers interested in expressing their disapproval for a decision that includes accepting nuclear. However, staff looks forward to coordinating with community organizations and members that are most likely to be concerned with the acceptance of a nuclear allocation to educate customers on the fact that opting out means a return to PG&E, which will have a projected

minimum of 16% nuclear and 22% natural gas in their power mix (if all eligible LSEs accept all of the allocations), and up to a projected 41% nuclear (if no allocations are accepted). As such, staff does not anticipate a significant impact to future revenue.

iii. Previous analysis suggests that every 1% of opted out load results in approximately 1% loss of revenue. If the opt-outs are primarily from residential accounts, then the % opt-out by load will be less than % opt-out by accounts. However, for the sake of simplicity, assuming the percentage of opt-outs by account is equivalent to opt-out by load, then approximately 5,500 customer opt-outs would result in a 1% loss of revenue.

2. Liability: In the recently settled case of San Onofre, we see ratepayers bearing a large amount of the billions of dollars in costs caused by the closure, including replacement energy. While we are not free from all risk, as we use PG&E lines and they own Diablo, our customer liability may be significantly increased by being a direct customer of nuclear power as opposed to have explicitly refused it.

   a. **What is the potential liability to EBCE?**

      i. PG&E recovers Diablo's costs through multiple CPUC-approved rate mechanisms. O&M and A&G costs, for example, are approved in a general rate case at the CPUC, then flowed through into the Portfolio Allocation Balancing Account (PABA) in annual Energy Resource Recovery Account (ERRA) proceedings, then flowed into the Power Cost Indifference Adjustment (PCIA) rate. Decommissioning costs for another example, are set in a decommissioning proceeding and passed to customers through a non-bypassable surcharge. These rate mechanisms predate any allocation mechanism. Employee retention and pension cost increases were established in CPUC proceedings on the accelerated closure of Diablo. The allocation proposal here has no impact on Diablo cost recovery mechanisms.

      ii. With respect to replacement energy, in any resource-specific transaction there is outage risk. This risk is addressed in the transaction documents. For the allocation transactions under consideration here, that means an Edison Electric Institute Master Agreement (EEI Master), and associated transaction confirmation (Confirm). The EEI Master Agreement EBCE has with PG&E is used for transactions of various products, so specific Product and Delivery Obligations terms are defined and set forth in each transaction Confirm. The Confirm for the allocation is yet to be negotiated.

   b. **What is being done to hedge against these risks?**

      i. To address and mitigate potential outage risk, EBCE could require an early outage indication from PG&E in the Confirm for known outages, and could define the Product and Delivery Obligations to require replacement carbon-free energy in the event of under-delivery, otherwise EBCE would receive compensation from PG&E, as stated in the EEI Master Agreement. Regardless, EBCE would also be prepared to buy replacement product on the short-term market as a last resort mechanism to hedge against these risks.

c. **What others are anticipated?**
    i. No other liabilities are anticipated. If, upon review of the Confirm, EBCE identifies incremental risks, those would be identified and reviewed with the Board prior to execution of the Confirm.

d. **As this is being set up as a power purchase, could this impact customer liability, due to the cost causation principle of rate making?**
    i. EBCE customers have always paid Diablo costs through the PCIA and other non-bypassable charges (e.g., decommissioning) on the premise that EBCE customers caused PG&E to incur those costs. Accepting the allocation does not increase Diablo costs, which, as noted above, are set in other proceedings whether we take an allocation or not.

3. Seismic Risk: With PG&E bankruptcy, investors may be risk averse. With the known potential liability, they could move to dump this risk (i.e., of a Diablo Canyon disaster) that could result in another bankruptcy.
    a. **What is the potential risk of Diablo being built to the Probabilistic Earthquake Model (PEM) as opposed to Maximum Credible Earthquake (MCE), the use of the PEM, being a less stringent standard?**
        i. While there is no way to quantify this risk, the facility currently meets Nuclear Regulatory Commission operations standards and is under regular seismic safety performance assessments and hazard analysis, making specific improvements if and when they are required, relative to current standards. The Nuclear Regulatory Commission published the latest Seismic Probabilistic Risk Assessment for Diablo Canyon and it can be found at this link, and the Mitigating Strategies Assessment at this link. Most significantly, these potential risks - and any associated liabilities - are not expected to be borne by any recipient of the allocation.

        ii. It is important to note that the Diablo Canyon facility is already built and operational. Therefore, it is a very unlikely scenario that PG&E or the CPUC would take action at this stage to terminate or sell the facility ahead of the planned closure of the facility in 2024-2025.

    b. If we had to replace the energy from a disruption, 1.4 TW is a substantial fraction of EBCE's electricity (about 20%). **What are the anticipated financial costs and how could that impact our carbon risk?**
        i. The current proposal is structured as a carbon-free attribute plus energy index construct and does not impact EBCE's electricity hedges. If this allocation were to fall through the cost would be to replace only the carbon-free related attribute component. This replacement cost is estimated to range between $5,000,000 to $15,000,000 and represents less than 5% of EBCE's overall energy costs. Within financial reason and direction of the Board, we would procure replacement carbon-free product in the short-term market to make up the difference and ensure our carbon-free content commitments.

4. Nuclear Market: We heard from staff that accepting a nuclear allocation has no effect on whether or how long Diablo Canyon may remain in operation. However, we also have heard that there are parties that wish to close the generation plant earlier or

later. As such, there may be unintended consequences around the length of time that Diablo Canyon operates if EBCE chooses to accept a nuclear allocation.

a. **What is the risk that accepting a nuclear allocation enables Diablo Canyon to remain open longer than expected?**
    i. There is no associated risk for accepting a nuclear allocation as it pertains to enabling Diablo Canyon to remain open longer than the decommissioning date (2025). There are two main principles at play that eliminate this risk: (1) the facility will generate the same amount regardless of whether or not EBCE accepts a portion of the carbon-free attributes, and (2) the allocation would only be for the remainder of Calendar Year 2020 from the time of decision, after which point EBCE would no longer receive attributes from Diablo Canyon.

    The former principle (1) occurs as a result of the daily demand for cost-effective baseload generation in the CAISO market, calling for the 24/7 utilization of the Diablo Canyon units in the loading order. The aggregated ISO-wide demand is what is considered in determining the resources called upon to generate; it is the baseload nature of the facility paired with the need of the balancing authority that drives the facility's generation.

5. PCIA: EBCE's estimated share of the stranded cost that PG&E has put forward for Diablo Canyon is $83 million for 2019 and $90 million for 2020, showing up in the PCIA. That's something like 1.5 cents/ kWh; which is a large fraction of the PCIA going up to 4 cents/kWh.
    a. **Is there a potential effect of accepting the allotment on the PCIA?**
        i. See prior response 1.2.a.i regarding the flow of costs through CPUC ratemaking mechanisms. Whether EBCE accepts or declines an allocation has no impact on these mechanisms.

2. CAC Questions around Costs

1. Cost Saving Mechanisms:
    a. If the primary driver of this proposal is the purported cost savings of $11 million or $16 million dollars, money that could be used in other places, **are you considering other ways to save money as opposed to accepting the nuclear or nuclear/hydro allotment? Are other options, like changing the percentage of carbon-free, rebalancing the portfolio, or the use of other cheaper fuels we don't specifically have a prohibition on being considered?**
        i. EBCE always strives to procure the lowest cost resources to meet our existing carbon-free portfolio commitment (≥85%, or at least "lower greenhouse gas intensity than PG&E"). There are levers that can be pulled which could result in a lower portfolio procurement cost, but not without sacrificing either our renewables or carbon-free content.

        Currently pricing for renewable power is higher than carbon-free power (ACS and large hydro) and rebalancing our portfolio with less carbon-free power and more renewable power would lead to higher procurement costs. There is the potential to reduce our renewable power purchases and replace the difference with more carbon-free power than our current product design; this could provide cost savings,

but we are constrained by the finite amount of carbon-free power available for purchase. Unlike renewable power generation, there is not likely to be more new large hydroelectric carbon-free generation coming online in the state. There is also the option to reduce our carbon-free power purchases, but that would of course come with an increase in the portfolio carbon intensity.

ii. EBCE is also driving forward two strategic initiatives that will result in better pricing for long-term contracts, namely (1) working towards achieving an investment-grade credit rating and (2) exploring the prepayment structure to utilize our tax-exempt status to achieve lower net cost electricity, as discussed in the November 22, 2019 Executive Committee meeting (presentation here).

2. Use of Cost Savings:
    a. **If EBCE accepts the nuclear allocation, what could EBCE do with that savings that is beneficial?** For example, directly fund the advocacy of groups working to close down Diablo Canyon (e.g., Alliance for Nuclear Responsibility)
        i. There are a number of options in the way of using the savings to drive value and benefit for EBCE customers. Some options include: using those dollars to procure more renewables, dedicating the funds to the local development budget, and/or putting the savings toward the maintenance of the rate discount relative to PG&E in light of the PCIA changes and the financial ramifications that will be felt.

        If the Board elects to use these dollars in another fashion, that decision is theirs to consider and make.

3. Calculation of Cost Savings: According to the presentation given to the board, staff reports $16 million in savings if we take the nuclear plus hydro allotment, and $5 million in savings if we only take the hydro, but no formula was given for how that number was arrived at, or a cost comparison. There are a variety of ways to calculate "savings" and clarification would be helpful. For comparison, what is the average rate per MWh for the Asset Controlling Supplier, the large hydro, renewable, and the market wholesale power we currently buy? (total costs of the year / total MWh, as annual averages for each of these sources)
    a. **How did staff arrive at the dollar value savings that would occur if EBCE chose to take the nuclear or hydro allocation and how does that compare to market costs?**
        i. As a general disclaimer EBCE is prohibited from sharing the exact market costs that we are transacting on due to the confidentiality of our procurement agreements. The dollar value savings estimates were calculated by multiplying the projected full year 2020 allocation amounts by an average carbon-free power procurement cost estimate of $8/MWh. $8/MWh is reflective of recent market conditions where supply of carbon-free energy in the form of large hydro and ACS has been constrained. Furthermore, in such a constrained market there may be a need to procure additional renewable energy resources, which generally trades at higher costs based on limited availability of large hydro.

        To reach the production estimates, staff used the latest available PG&E Retail Sales Actuals data (2013-2018) and PG&E forecasted 2020

production volumes for their large hydro assets and nuclear assets, which, when summed (together, the 'Resource Pool'), calculates to 30% of the Resource Pool from large hydro and 70% of the Resource Pool from nuclear. We then multiplied those volumes by 9% to represent EBCE's average proportional share of forecasted monthly load set forth in PG&E's ERRA Forecast, the proportion calculation methodology proposed in the allocation mechanism cited in the PG&E Advice Letter. This resulted in the estimated EBCE allocation volumes of 648 GWh from large hydro and 1,494 GWh from nuclear, for a total of just over 2 TWh of carbon-free energy. The hydro and nuclear resources projected for EBCE proportionally calculate to 30% and 70% of the total EBCE allocation volumes, respectively.

It is worth noting that these production estimates are for the entire year of 2020; given the timeline of the CPUC decision-making processes surrounding the allocations likely not concluding until late May/early June, we are more likely looking at roughly half of these volumes.

4. Contract Structure: In our presentation, staff reported it was "*virtually* free" and that "we have already paid for it *effectively*", then said there was "no cost" and that PG&E had set it up as a "sale" because a sale was required for specified energy sources. Please clarify if EBCE will pay for the allotment.
    a. **What is the cost or the rate per MWh for the large hydro and nuclear that PG&E would be charging the CCA?**
        i. The incremental cost per MWh that PG&E would charge EBCE would be $0.00. The "virtually" and "effectively" language reflects that EBCE would waive its right to argue at the CPUC that PG&E should have sold carbon-free resources rather than allocate them. That is, if we take an allocation of carbon-free power, we can't also argue that the CPUC should penalize PG&E for failing to sell us carbon-free power. This waiver is consideration (i.e. we are giving something up), but it is non-monetary, hence the qualifiers.

        Furthermore, EBCE is already paying for these attributes indirectly through the PCIA. If EBCE were to elect not to take this allocation, however, the PCIA would not decrease.

3. CAC Questions on Power Content

1. Impacts to EBCE and PG&E Power Mixes: In the hearing on the closure of Diablo Canyon, PG&E reported that one of its reasons for closure is the nature of nuclear load displacing renewables and not fossil fuels. The side by side comparison just went out, as reported by staff. PG&E is listed at 34% nuclear and 39% renewable. EBCE is listed as 0% nuclear and 41% renewable. The carbon risk associated with the potential allotment should be clarified.
    a. **How would the inclusion of a nuclear allotment affect EBCE's power mix?**
        i. EBCE would still target 85% carbon-free power for our power purchases for the calendar year. Of the 85%, typically 39% of this is from renewable sources and 48% is from large hydroelectric or Asset Controlling Supplier (ACS) power. ***Operating with the full calendar year allocation projections***, with the inclusion of the nuclear

allotment, approximately 17% of our total purchased power would come from nuclear; the aggregate would be represented on the 2020 Power Content Label, distributed, as the Board would determine, across Bright Choice, Brilliant 100, and/or a potential new product offering.

b. **What percentage of power sources, including renewable and hydropower energy, are you planning for EBCE and predicting for PG&E for 2020?**
   i. EBCE:

Source	EBCE accepts Hydro	EBCE accepts Hydro and Nuclear
Renewable	39 %	39 %
Hydro/ACS	49 %	32 %
Nuclear	0 %	17 %
Unspec/Other	13 %	13 %

   ii. PG&E:

Source	No Allocations Accepted	Only EBCE accepts:		All CCAs accept:	
		Hydro**	Hydro and Nuclear	Hydro	Hydro and Nuclear
Renewable*	38 %	38 %	38 %	38 %	38 %
Large Hydro	22 %	21 %	21 %	11 %	11 %
Nat Gas	0 %	0 %	4 %	3 %	22 %
Nuclear	41 %	42 %	38 %	48 %	16 %
Unspec/Other	0 %	0 %	0 %	0 %	13 %

** Reflects renewable generation from PG&E RPS plan and not historical renewable energy purchases.*
*** Unlikely scenario, given the understanding that all CCAs will accept at least the hydro allocations.*

c. **How would taking their nuclear load and adding it to our power mix affect those numbers?**
   i. See above tables.

d. **What is the risk that EBCE's renewables may be displaced if our energy mix includes nuclear? What steps would be taken to make sure we do not displace renewables on days with high solar or wind output, and nuclear cannot be curtailed?**
   i. There is no different risk if our energy mix includes nuclear than there is today without nuclear. Diablo Canyon's baseload supply to the grid does at times contribute to the curtailment of renewables, and the decisions pertaining to what resources are called upon to generate and which are curtailed are made by the CAISO, as detailed in the response to question 1.4.a.i.

e. **If EBCE takes PG&E's nuclear and hydro energy, how do we make sure we maintain a renewables mix higher than that of PG&E, which will likely increase in 2020?**
   i. With PG&E's relative share of renewables in their power mix increasing with departing load, EBCE could procure more renewables to maintain a higher relative mix, though that would come at a cost since renewables are more expensive, as outlined in 2.1.a.i.

f. **What would EBCE do to obtain replacement energy if there is a problem with Diablo Canyon?**
   i. EBCE currently purchases power product in the short-term market throughout the year and has the availability to do so if there was any reduction in the expected nuclear generation from the allocation. Given the structure of the transaction, EBCE is not directly exposed to Diablo Canyon generation, so there is no explicit replacement energy risk.

4. Board Member Additional Questions (from December 18, 2019 Board Meeting)

- Mayor Pilch:
  - **What is the implication of our decision on the nuclear market? What would the impact be of accepting of the nuclear attributes relative to the lifetime of the generating facility? On the market for nuclear in California?**
    - In response to the implication on the lifetime of the facility, please see 1.4.a.i. As the plant will generate as determined by the CAISO until its decommissioning (phased across 2024 and 2025), the decision on whether or not to accept the allocation also does not send market signals for the demand for nuclear power specifically. It is highly unlikely to see any new nuclear in California, particularly in light of Diablo - the only operational facility in the state - already slated to shut down by 2025.

- Mayor Arreguin:
  - **Is there a budget impact of decision or have we already budgeted for the procurement of the carbon-free energy volume in question?**
    - As we have already budgeted for carbon-free procurement for 2020, there is no new procurement cost associated with not taking the nuclear. However, there would be a budget impact if we do not take the nuclear allocation and are directed to maintain both the carbon intensity and current discount, in light of the increasing PCIA. Portfolio balancing options and associated cost implications are outlined in 2.1.a.i.

- Council Member Munro:
  - To ensure there is not an economic justice impact, **please confirm the ratepayer cost implications of the different options.**
    - For a detailed explanation of the cost and liability risk for ratepayers, please see the response in 1.2.a.i. In short, whether EBCE accepts or declines the allocations does not have an implication on either Diablo cost recovery mechanisms nor the PCIA.

        - Additionally, as we know the PCIA is going to increase (though occuring separately from the allocation process), so EBCE has the option to use the effective savings realized from accepting the allocation to mitigate the degree of cost implications the rising PCIA will have on ratepayers.

- Council Member Kalb:
    - **What is the possibility for EBCE to take the nuclear allocation and re-sell it to another party?**
        - Staff is exploring the possibility of this option, gathering market feedback for the appetite for the product by others. Contractually we would be allowed to do so.

- Council Member Mendall:
    - In considering this decision as being one that is a) short-term, and b) ultimately between nuclear and natural gas (the remaining 15% of the EBCE portfolio that is system power and therefore largely nat gas), **from an environmental/ emissions perspective, which is worse?**
        - From a generation-related emissions perspective, nuclear is a carbon-free resource (emission factor: 0 lbs CO_2e/MWh) while natural gas is a fossil fuel resource (emission factor: 390.3 lbs CO_2e/MWh); calculations courtesy of the California Air Resources Board Emission Factor Database. The qualification of this decision as being between nuclear and natural gas is only fully correct if the Board directs for the application of the allocated carbon-free resources to be incremental to planned procurements (to achieve a portfolio that is more than 85% carbon-free), rather than a no-cost fulfillment of a portion of our planned procurements (to achieve an 85% carbon-free portfolio). If the former direction is taken, all planned carbon-free procurements will still be made in the market, meaning the effective cost savings element of accepting the allocation no longer applies.
        - Additionally for consideration, as The Climate Mobilization cited in their Victory Plan (published 2016, revised 2019), policy should encourage the shut down of nuclear plants, "but should generally aim to maintain nuclear power generation until there is enough renewable energy capacity to replace current coal, gas, and nuclear power generation. If retiring nuclear power plants means adding additional greenhouse gases into the atmosphere, it should not be done." In 2020 California's grid still relies on a significant amount of natural gas and does not yet have the level of renewables and storage to displace the need for gas or nuclear baseload, so the production of carbon-free power from Diablo Canyon ultimately leads to a lower carbon-intensity of power on the California grid than using the alternative of natural gas.

- Council Member Martinez:
    - **Please provide a clarification on energy vs. attributes and what accepting the allocation contractually means (i.e. is there delivery associated with attributes)?**
        - The current proposal is structured as a carbon-free attribute plus energy index construct. While the Confirm would be for the rights to the energy and the carbon-free attributes (i.e. right to claim the generation

of that carbon-free energy on our Power Content Label), PG&E simply delivers the energy to the CAISO market and EBCE gets the accounting rights to that carbon-free energy. In other words, the structure is similar to other energy hedges in that we rely on the delivery of certain contracted products (which can include a combination of Renewable Energy Credits, Resource Adequacy, or in this just case carbon-free attributes) to meet respective regulatory obligations and/or policy commitments, but we do not rely on the delivery of associated electricity to physically serve load.

Financial Impacts

There is no financial impact associated with this update. The financial impact of potential Carbon-Free Allocation options will be provided as part of future board item(s).