CAC Item C6
Staff Report Item 16

TO: East Bay Community Energy Board of Directors

FROM: **Marie Fontenot; Senior Director of Power Resources**

SUBJECT: **Update on 2020 Integrated Resource Plan (Informational Item)**

DATE: June 17, 2020

Recommendation

Receive the informational update on process and status of Integrated Resource Planning (IRP) analysis.

Background and Discussion

EBCE is currently engaged in its 2020 IRP study. This analysis is being undertaken with support from consultants from Siemens Energy Business Advisory and Ascend Analytics. Staff is undertaking analysis in two phases: phase one is focused on performing analysis and completing documentation as required to comply with the California Public Utility Commission's (CPUC) IRP filing requirements; phase two is focused on supplemental analysis that will inform a future Staff recommendation to the Board on a procurement strategy to reduce greenhouse gas (GHG) emissions as a greater rate than is required by the CPUC and State of California.

Results of phase one of the IRP Analysis will be presented to the Board in July. At that time, Staff will seek Board approval on the compliance filing as the filing must be completed by September 1, 2020. Staff will present the results of phase two and will request Board input and eventual approval of more aggressive GHG emissions reduction targets and associated procurement strategy at a later date.

In this June 17 Board meeting, Staff is providing an update to the Board and the public, for feedback and discussion as an informational item, on the analysis underway toward phase one, achieving compliance with the CPUC's IRP study and filing.

Fiscal Impact

This update has no fiscal impact on current operations.

Attachments

A. Presentation of initial results of phase one of IRP analysis

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Integrated Resource Plan Update

PRESENTED BY: Marie Fontenot

DATE: June 17, 2020

Deliverables

Phase 1: CPUC IRP Compliance Filing

- Analysis based on prescriptive assumptions
- Narrative – analysis, process, results, lessons learned
- Resource Data – conforming & “preferred” portfolios
- Clean System Power Calculator

Phase 2: Establish EBCE Organizational Goals

- Additional analysis
- Identify reliability needs
- Define trade-offs between organizational objectives
- Inform procurement recommendations
- Develop path to expedited GHG reduction

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Revised CPUC Requirements

- 46 MMT *and* 38 MMT scenarios

LSE	2030 Load (GWh)	Share of 2030 load in IOU territory	2030 GHG emissions benchmark – 46 MMT scenario	2030 GHG emissions benchmark – 38 MMT scenario
PG&E Bundled	26,777	35.2%	5.479	4.526
EBCE	6,910[1]	9.08%	1.23[2]	.984 [2]
SCE Bundled	54,393	63.49%	9.687	8.003
SDG&E Bundled	5,366	29.46	1.198	0.990

[1] Load represents CPUC approved load forecast as of 4/15/20; subject to revision in final IRP analyses and filing.
[2] Reflects requirement after behind the meter Combined Heat & Power emissions are removed from target.

- Specific Input Requirements
- Filing date: September 1, 2020

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Context / Comparison

2020 Load Forecast (GWh)	Estimated 2020 GHG emissions for 39.5% RPS[1]	Estimated 2030 GHG emissions for 60% RPS[2]	2030 Load (GWh)	2030 GHG emissions benchmark – 46 MMT scenario	2030 GHG emissions benchmark – 38 MMT scenario
Total: 5,900 Bright Choice: 4,889	Total: n/a Bright Choice: ~970,000 MT + CHP	Total: n/a Bright Choice: ~537,000 MT + CHP[3]	6,910	1.414 (or ~~~900,000MT~~ 1.23MMT)	1.168 (or ~~~668,000MT~~ .984 MMT)

[1] Assumption: use of April's Board-approved PCL methodology: PG&E hydro allocation and RPS+5%. 39.5% represents 5% above PG&E's 2019 renewable energy power content forecast (per 2019 Bundled RPS Energy Sale Solicitation Advice Letter filing).

[2] 60% is equal to RPS compliance for 2030.

[3] Estimate is high-level approximate ONLY based on Index+REC transactions. Does not represent expected outcomes associated with long-term RPS contracts (e.g. impacts of curtailment)

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Scenario Analysis Will Evaluate…

Key Evaluation Metrics	Scenario 1: 46 MMT / ~~i.e. 1.414 MMT~~ i.e. 1.23 MMT	Scenario 2: 38 MMT / ~~i.e. 1.168 MMT~~ i.e. .984 MMT	Scenario 3: EBCE aggressive 30 MMT i.e. .74 MMT
Carbon Free			
Affordability (Cost)			
Resource Mix (incl. New build vs existing)			
Risk Mgmt: Spot Market vs Short-Term vs Long-Term Contracts			
Reliability			

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Developing Conforming Portfolios

CPUC compliance portfolios developed based on the CPUC's "Reference System Plan".

Benefits:

- Consistent with CPUC view of reliability
- Defensible: Tied to CPUC-expectations of resource availability (defensible)
- Able to incorporate EBCE-views of availability & portfolio-fit

Limitations:

- Not directly tied to EBCE organizational goals
- Final results & comparison of the 3 scenarios will not be true "apples to apples"

	2020	2022	2026	2030
RSP CAISO Load (46 or 38 MMT)	205,907	204,065	205,132	206,953
EBCE Load	7,535	6,894	6,906	6,910
EBCE % of CAISO	3.66%	3.38%	3.37%	3.34%

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Draft Conforming Portfolios

46 MMT Scenario: EBCE = 1.23 MMT in 2030

	% of Pro-Rata	2022 Adjustment	max allowed	Overall EBCE Pro Rata Portfolio			
Resource				2020	2022	2026	2030
2-hr Battery Storage	125.0%	100%		0.0	0.0	80.0	280.8
4-hr Battery Storage	125.0%	100%		0.0	175.6	339.8	225.8
Pumped Storage (long-duration)	75.0%	0%		0.0	0.0	0.0	64.4
Large Hydro	70.0%	100%	100	0.0	167.2	166.6	100.0
Imported Hydro	70.0%	100%		0.0	67.4	67.2	66.7
Biogas	50.0%	0%		0.0	0.0	0.0	4.6
Biomass	50.0%	0%		0.0	0.0	0.0	10.4
Geothermal	100.0%	10%		0.0	12.2	75.2	74.5
Small Hydro	100.0%	100%	20	0.0	32.9	32.8	20.0
Shed DR	50.0%	100%		0.0	40.8	40.7	40.4
Candidate Wind Resources	112.0%						
Southern_CA_Desert_Southern_NV_		100%		0.0	119.4	130.7	130.7
Sacramento_River_Wind		100%		0.0	57.5	57.5	57.5
Tehachapi_Wind		100%		0.0	119.4	130.7	130.7
Generic_CA_Wind		100%		0.0	0.0	0.0	23.3
New_Mexico_Wind		100%		0.0	59.7	65.4	65.4
Candidate Solar Resources	112.5%						
Southern_PGE_Solar		100%		0.0	168.0	493.0	493.0
Southern_CA_Desert_Southern_NV_		100%		0.0	186.9	186.9	186.9
Tehachapi_Solar		100%		0.0	186.9	186.9	186.9
Generic_CA_Solar		100%		0.0	0.0	0.0	106.2

38 MMT Scenario: EBCE = .984 MMT in 2030

	% of Pro-Rata	2022 Adjustment	max allowed	Overall EBCE Pro Rata Portfolio			
Resource				2020	2022	2026	2030
2-hr Battery Storage	125%	100%		0.0	0.0	80.0	224.0
4-hr Battery Storage	125%	100%		0.0	175.6	293.9	317.7
Pumped Storage (long-duration)	75%	0%		0.0	0.0	0.0	80.2
Large Hydro	74%	100%	100	0.0	176.8	176.1	100.0
Imported Hydro	74%	100%		0.0	71.3	71.1	70.5
Biogas	50%	0%		0.0	0.0	0.0	4.6
Biomass	50%	0%		0.0	0.0	0.0	10.4
Geothermal	100%	0%		0.0	0.0	78.3	77.7
Small Hydro	100%	100%	20	0.0	32.9	32.8	20.0
Shed DR	50%	100%		0.0	40.8	40.7	40.4
Candidate Wind Resources	115.0%						
Southern_CA_Desert_Southern_NV_		90%		0.0	124.5	151.5	151.5
Sacramento_River_Wind		100%		0.0	57.5	57.5	57.5
Tehachapi_Wind		90%		0.0	124.5	151.5	151.5
Generic_CA_Wind		90%		0.0	0.0	0.0	168.0
New_Mexico_Wind		90%		0.0	62.2	75.7	75.7
Candidate Solar Resources	113.7%						
Southern_PGE_Solar		100%		0.0	168.0	493.0	493.0
Southern_CA_Desert_Southern_NV_		100%		0.0	204.6	204.6	204.6
Tehachapi_Solar		100%		0.0	204.6	204.6	204.6
Generic_CA_Solar		100%		0.0	0.0	0.0	118.3

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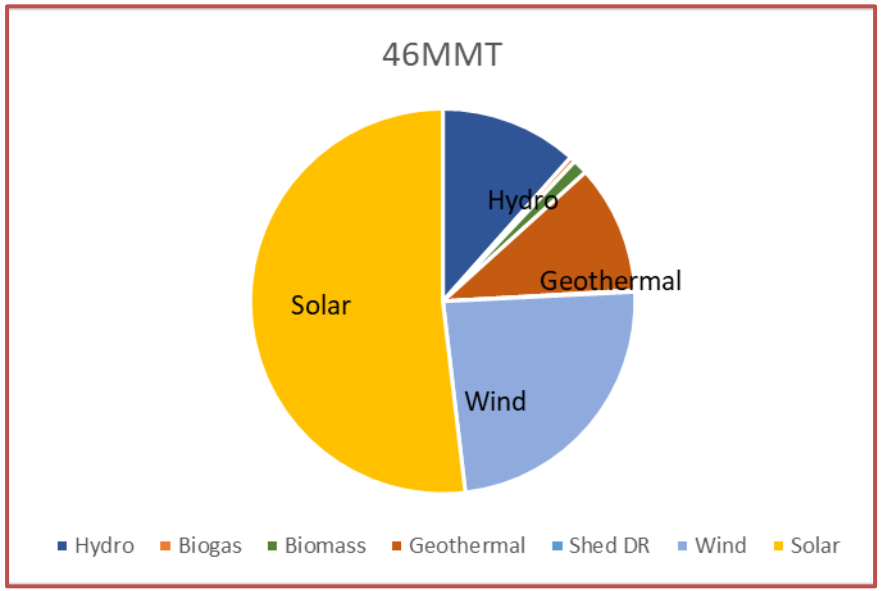
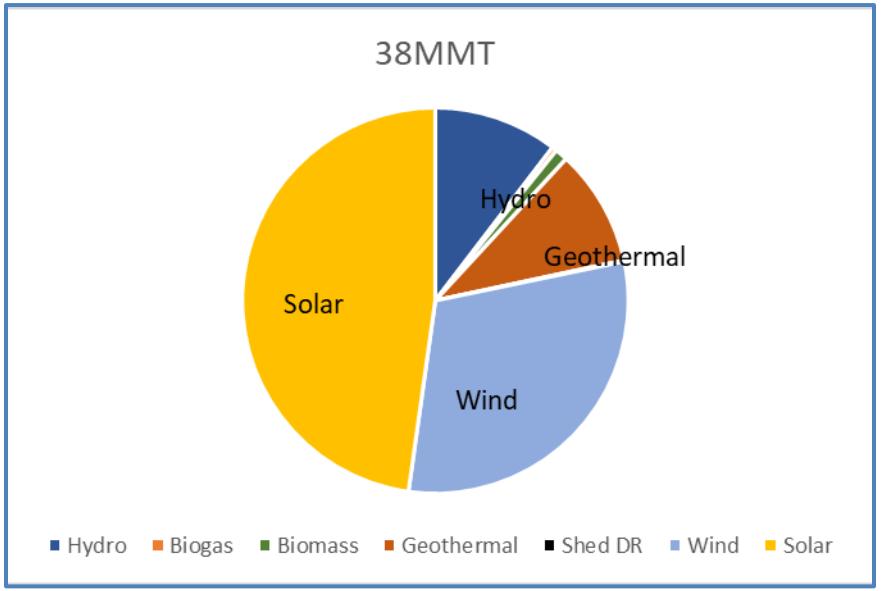
Draft Conforming Portfolios

46 MMT Scenario: EBCE = 1.23 MMT in 2030



38 MMT Scenario: EBCE = .984 MMT in 2030



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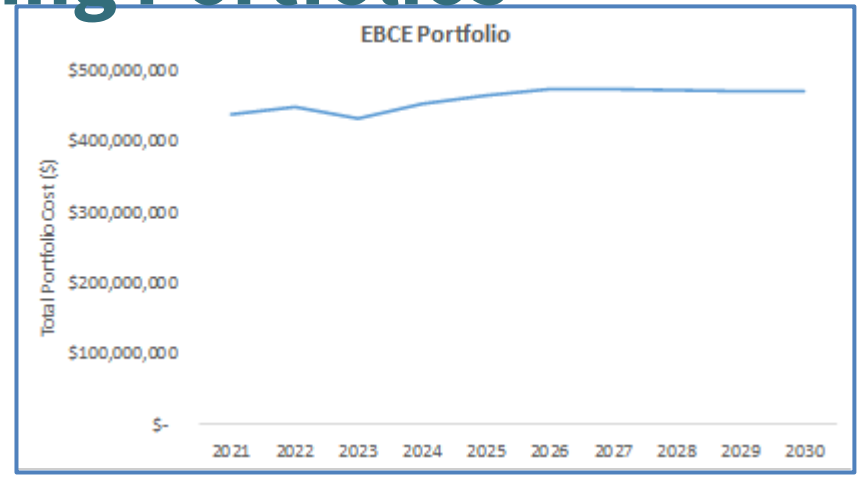
Initial Costs of Conforming Portfolios

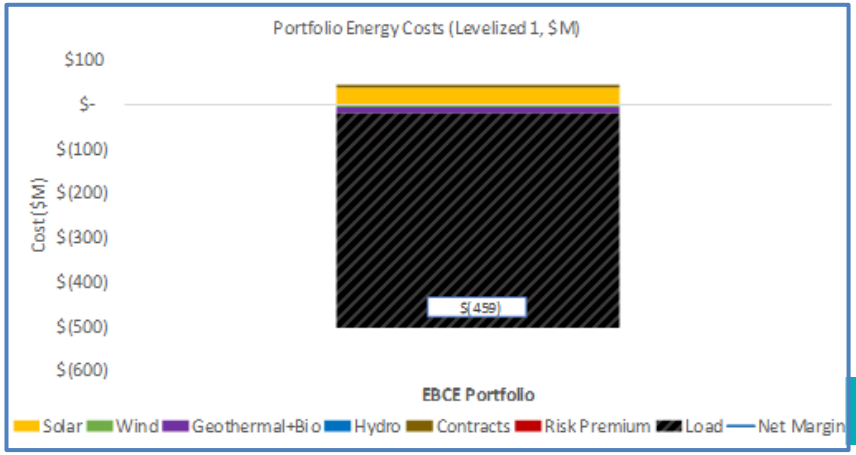
*Values represented on this slide are results of early, DRAFT model runs. Information is displayed to demonstrate the **types** of results we will provide. These values do not represent indicative estimates.*



46 MMT Scenario: EBCE = 1.23 MMT in 2030

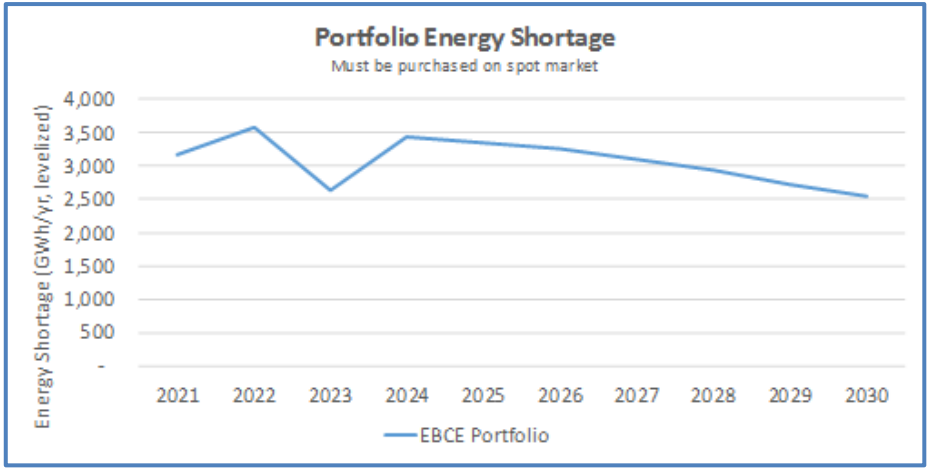
Place holder

38 MMT Scenario: EBCE = .984 MMT in 2030



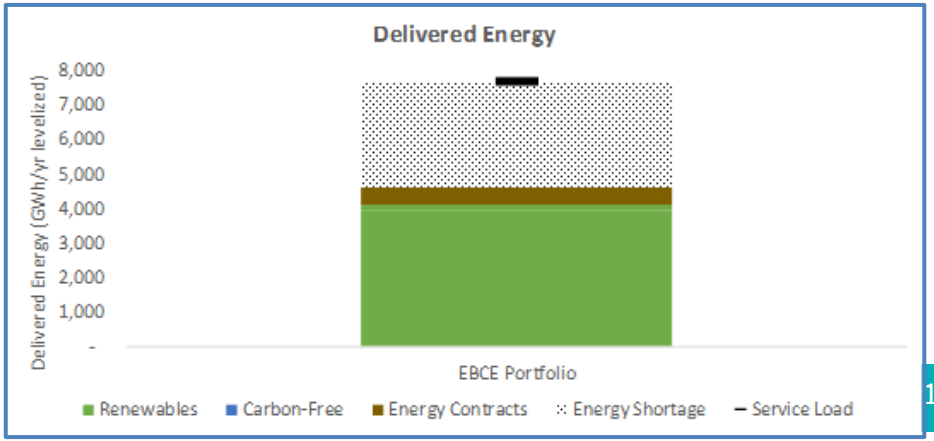
Portfolio Reliability

Preliminary results only



46 MMT Scenario: EBCE = 1.23 MMT in 2030

38 MMT Scenario: EBCE = .984 MMT in 2030



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Risk Mgmt: Transaction Tenors

46 MMT Scenario: EBCE = 1.23 MMT in 2030

Tenor	% or MWh
Spot Market	
Short Term	
Long Term	

38 MMT Scenario: EBCE = .984 MMT in 2030

Tenor	% or MWh
Spot Market	
Short Term	
Long Term	

Preliminary results pending

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Reliability of Portfolios

46 MMT Scenario: EBCE = 1.23 MMT in 2030

Susceptibility/Robustness in terms of:	
Weather Volatility in Power Prices	
Renewable Intermittency	

38 MMT Scenario: EBCE = .984 MMT in 2030

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Preliminary results pending

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