

CHAPTER 6 - Load Forecast & Resource Plan

Introduction

This Chapter describes the electric resource portfolio that may be acquired to meet the energy requirements of MBCP customers. The following overarching policies will govern power supply resource planning and acquisition.

- MBCP will seek to source nearly all of its electric energy requirements from carbon free and eligible renewable resources and will implement programs to reduce reliance on fossil fuel combustion within the electric utility and transportation sectors of its Members.
- MBCP will manage a diverse resource portfolio to increase control over energy costs and maintain competitive and stable electric rates.
- MBCP will diversify the use of generating technologies in an effort to positively influence grid reliability and electric system stability within California.
- MBCP may apply for the administration of energy efficiency program funding to help customers reduce energy costs through administration of enhanced customer energy efficiency, distributed generation, and other demand reducing programs.
- MBCP will benefit the area's economy through investment in local infrastructure, projects and energy programs.

MBCP's initial resource mix will include a proportion of eligible renewable energy that meet or exceed California's prevailing RPS procurement mandate. MBCP's carbon free resources will proportionately exceed the resource mix currently being provided by the incumbent utility. As the MBCP Program moves forward, incremental renewable supply additions will be made based on resource availability as well as economic goals of the MBCP Program to achieve increased carbon free content over time. MBCP's aggressive commitment to renewable generation adoption may involve both direct investment in new renewable generating resources, partnerships with experienced public power developers/operators and purchases of renewable energy from third party suppliers.

The plan described in this section would accomplish the following:

- Procure energy through one or more contracts with experienced, financially stable energy suppliers sufficient to offer two distinct generation rate tariffs: 1) 100 percent California carbon free energy, offered to MBCP customer on a voluntary basis; and 2) a default MBCP service option that includes a proportion of renewable energy exceeding California's prevailing renewable energy procurement mandate.
- Continue increasing eligible renewable and carbon free energy supplies over time, subject to resource availability, economic viability and applicable compliance mandates.

- To the extent that MBCP decides to apply for and is successful in securing public funding to support locally administered efficiency programs, it will attempt to reduce net electricity purchases within the region.
- Encourage distributed renewable generation in the local area through the offering of a net energy metering tariff; a standardized power purchase agreement or “Feed-In Tariff”; and other creative, customer-focused programs targeting increased access to local renewable energy sources.

MBCP will comply with regulatory rules applicable to California load serving entities. MBCP will arrange for the scheduling of sufficient electric supplies to meet the demands of its customers. MBCP will adhere to capacity reserve requirements established by the CPUC and the CAISO designed to address uncertainty in load forecasts and potential supply disruptions caused by generator outages and/or transmission contingencies. These rules also ensure that physical generation capacity is in place to serve MBCP’s customers, even if there were a need for the MBCP program to cease operations and return customers to PG&E. In addition, MBCP will be responsible for ensuring that its resource mix contains sufficient production from renewable energy resources needed to comply with the statewide RPS (33 percent renewable energy by 2020, increasing to 50 percent by 2030) as well as energy storage procurement mandates applicable to CCA entities.

Resource Plan Overview

To meet these objectives and satisfy the applicable regulatory requirements pertaining to MBCP’s status as a California load serving entity, MBCP’s resource plan will include a diverse mix of power purchases, renewable energy, new energy efficiency programs, demand response, and distributed generation. A diversified resource plan minimizes risk and volatility that can occur from over-reliance on a single resource type or fuel source, and thus increases the likelihood of rate stability. The key goal guiding MBCP’s resource plan is to reduce electric sector GHG emissions while offering competitive generation rates to participating customers. The planned power supply is initially comprised of power purchases from third party electric suppliers and, in the longer-term, may also include renewable generation assets owned and/or controlled by MBCP.

Once the MBCP program demonstrates it can operate successfully, MBCP may begin evaluating opportunities for investment in renewable generating assets, subject to then-current market conditions, statutory requirements and regulatory considerations. Any renewable generation owned by MBCP or controlled under long-term power purchase agreement with a proven public power developer, could provide a portion of MBCP’s electricity requirements on a cost-of-service basis. Depending upon market conditions and, importantly, the applicability of tax incentives for renewable energy development, electricity purchased under a cost-of service arrangement can be more cost-effective than purchasing renewable energy from third party developers, which will allow the MBCP program to pass on cost savings to its customers through competitive generation rates.

As an alternative to direct investment, MBCP may consider partnering with experienced developers and may enter into long-term (10-to-30 year) power purchase agreements that would support the development of new renewable generating capacity. Such an arrangement could be structured to reduce the MBCP Program’s operational risk associated with capacity ownership while providing its customers with all renewable energy generated by the facility under contract. This option may be preferable to MBCP as it works to achieve increasing levels of renewable energy supply to its customers.

MBCP’s resource plan will integrate supply-side resources with programs that will help customers reduce their energy costs through improved energy efficiency and other demand side measures. As part of its integrated resource plan, MBCP will actively pursue, promote and ultimately administer a variety of customer energy efficiency programs that can, cost effectively displace supply-side resources.

MBCP’s indicative resource plan for the years 2018 through 2027 is summarized in the following table. Note that MBCP’s projections reflect a portfolio mix of sufficient eligible renewable resources to meet pertinent RPS mandates, which will be supplemented with carbon-free resources to achieve a near-100 percent carbon-free portfolio during the noted planning period.

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
MBCP Demand (GWh)										
Retail Demand	-2,422	-3,585	-3,603	-3,621	-3,639	-3,657	-3,676	-3,694	-3,712	-3,731
Distributed Generation	0	11	21	32	42	53	63	74	84	95
Energy Efficiency	0	0	0	4	7	11	15	18	22	26
Losses and UFE	-145	-214	-215	-215	-215	-216	-216	-216	-216	-217
Total Demand	-2,567	-3,789	-3,797	-3,801	-3,805	-3,809	-3,814	-3,818	-3,822	-3,827
MBCP Supply (GWh)										
<u>Renewable Resources</u>										
Total Renewable Resources	702	1,108	1,182	1,244	1,307	1,369	1,432	1,495	1,558	1,621
<u>Low-Carbon Resources</u>										
Total Low-Carbon Resources	1,865	2,681	2,615	2,557	2,498	2,440	2,382	2,323	2,265	2,206
Total Supply	2,567	3,789	3,797	3,801	3,805	3,809	3,814	3,818	3,822	3,827
Energy Open Position (GWh)	0	0	0	0	0	0	0	0	0	0

Supply Requirements

The starting point for MBCP’s resource plan is a projection of participating customers and associated electric consumption. Projected electric consumption is evaluated on an hourly basis, and matched with resources best suited to serving the aggregate of hourly demands or the program’s “load profile”. The electric sales forecast and load profile will be affected by MBCP’s plan to introduce the MBCP Program to customers in phases and the degree to which customers choose to remain with PG&E during the customer enrollment and opt-out periods. MBCP’s

phased roll-out plan and assumptions regarding customer participation rates are discussed below.

Customer Participation Rates

Customers will be automatically enrolled in the MBCP Program unless they opt-out during the customer notification process conducted during the 60-day period prior to enrollment and continuing through the 60-day period following commencement of service. MBCP anticipates an overall customer participation rate of approximately 95 percent of PG&E bundled service customers, based on reported opt-out rates for the Peninsula and Silicon Valley Clean Energy CCA programs. It is assumed that customers taking direct access service from a competitive electricity provider will continue to remain with their current supplier.

The participation rate is not expected to vary significantly among customer classes considering that MBCP plans on offering rates that are very similar, if not identical, to that of the incumbent utility with 2 major distinctions that all customers regard favorably; 1) MBCP plans to source significantly more carbon-free supply than the incumbent utility; and 2) MBCP plans to return a portion of annual financial surpluses to participating customers. Participation rates will be refined as MBCP’s public outreach and market research efforts continue to develop.

Customer Forecast

Once customers enroll in each phase, they will be switched over to service by MBCP on their regularly scheduled meter read date over an approximately thirty-day period. Approximately 1,250 service accounts per day will be switched over during the first month of service. For Phase 2, the number of accounts switched over to MBCP service will increase to about 7,580 accounts per day. The number of accounts served by MBCP at the end of each phase is shown in the table below.

**Monterey Bay Community Power
Enrolled Retail Service Accounts
Phase-In Period (End of Month)**

	<u>Mar-18</u>	<u>Jul-18</u>
MBCP Customers		
Residential	-	235,070
Small Commercial	27,442	27,442
Medium Commercial	2,258	2,258
Large Commercial	1,046	1,046
Industrial	40	40
Street Lighting & Traffic	1,957	1,957
Agricultural & Pumping	4,771	4,771
Total	37,514	272,584

MBCP Implementation Plan, August 2017

MBCP assumes that customer growth will generally offset customer attrition (opt-outs) over time, resulting in a relatively stable customer base (0.5% annual growth) over the noted planning horizon. While the successful operating track record of California CCA programs continues to grow, there is a relatively short history with regard to CCA operations, which makes it fairly difficult to anticipate the actual levels of customer participation within the MBCP Program. MBCP believes that its assumptions regarding the offsetting effects of growth and attrition are reasonable in consideration of the historical customer growth within the founding member communities and the potential for continuing customer opt-outs following mandatory customer notification periods. The forecast of service accounts (customers) served by MBCP for each of the next ten years is shown in the following table:

Monterey Bay Community Power Retail Service Accounts (End of Year) 2018 to 2027										
	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
MBCP Customers										
Residential	235,070	236,245	237,427	238,614	239,807	241,006	242,211	243,422	244,639	245,862
Small Commercial	27,442	27,579	27,717	27,856	27,995	28,135	28,276	28,417	28,559	28,702
Medium Commercial	2,258	2,269	2,281	2,292	2,303	2,315	2,327	2,338	2,350	2,362
Large Commercial	1,046	1,051	1,056	1,062	1,067	1,072	1,078	1,083	1,089	1,094
Industrial	40	40	40	40	40	40	40	40	40	40
Street Lighting & Traffic	1,957	1,967	1,977	1,987	1,996	2,006	2,016	2,027	2,037	2,047
Agricultural & Pumping	4,771	4,795	4,819	4,843	4,867	4,891	4,916	4,941	4,965	4,990
Total	272,584	273,947	275,316	276,693	278,076	279,466	280,863	282,267	283,678	285,097

Sales Forecast

MBCP's forecasted electricity sales reflect the phase-in and customer enrollment schedules shown above. Annual energy requirements of the MBCP program are shown below.

Monterey Bay Community Power Energy Requirements (GWH) 2018 to 2027										
	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
MBCP Energy Requirements (GWh)										
Retail Demand	2,422	3,585	3,603	3,621	3,639	3,657	3,676	3,694	3,712	3,731
Distributed Generation	0	-11	-21	-32	-42	-53	-63	-74	-84	-95
Energy Efficiency	0	0	0	-4	-7	-11	-15	-18	-22	-26
Losses and UFE	145	214	215	215	215	216	216	216	216	217
Total Load Requirement	2,567	3,789	3,797	3,801	3,805	3,809	3,814	3,818	3,822	3,827

Capacity Requirements

The CPUC's resource adequacy standards applicable to the MBCP Program require a demonstration one year in advance that MBCP has secured physical capacity for 90 percent of its projected peak loads for each of the five months April to August, plus a minimum 15 percent reserve margin. On a month-ahead basis, MBCP must demonstrate 100 percent of the peak load plus a minimum 15 percent reserve margin.

A portion of MBCP's capacity requirements must be procured locally, from the Greater Bay area as defined by the CAISO and another portion must be procured from local reliability areas outside the Greater Bay Area. MBCP would be required to demonstrate its local capacity requirement for each month of the following calendar year. The local capacity requirement is a percentage of the total (PG&E service area) local capacity requirements adopted by the CPUC based on MBCP's forecasted peak load. MBCP must demonstrate compliance or request a waiver from the CPUC requirement as provided for in cases where local capacity is not available.

MBCP is also required to demonstrate that a specified portion of its capacity meets certain operational flexibility requirements under the CPUC and CAISO's flexible resource adequacy framework.

The estimated forward resource adequacy requirements for 2018 through 2020 are shown in the following tables³:

³ The figures shown above are estimates. MBCP's resource adequacy requirements will be subject to modification due to application of certain coincidence adjustments and resource allocations relating to utility demand response and energy efficiency programs, as well as generation capacity allocated through the Cost Allocation Mechanism. These adjustments are addressed through the CPUC's resource adequacy compliance process.

**Monterey Bay Community Power
Forward Capacity and Reserve Requirements
(MW)
2018 to 2020**

Month	2018	2019	2020
January	-	581	584
February	-	607	611
March	367	522	525
April	427	608	611
May	442	611	614
June	459	675	678
July	693	693	697
August	695	695	698
September	713	713	716
October	615	615	618
November	597	597	600
December	578	578	581

MBCP’s plan ensures that sufficient reserves will be procured to meet its peak load at all times. MBCP’s projected annual capacity requirements are shown in the following table:

Monterey Bay Community Power Capacity Requirements (MW) 2018 to 2027										
	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Demand (MW)										
Retail Demand	585	585	587	590	593	596	599	602	605	608
Distributed Generation	-	(6)	(12)	(18)	(24)	(30)	(36)	(42)	(48)	(54)
Energy Efficiency	-	-	-	(1)	(2)	(2)	(3)	(4)	(5)	(6)
Losses and UFE	35	35	35	34	34	34	34	33	33	33
Total Net Peak Demand	620	613	610	606	602	598	594	590	586	582
Reserve Requirement (%)	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%
Capacity Reserve Requirement	93	92	91	91	90	90	89	88	88	87
Capacity Requirement Including Reserve	713	705	701	697	692	688	683	678	674	669

Local capacity requirements are a function of the PG&E area resource adequacy requirements and MBCP’s projected peak demand. MBCP will need to work with the CPUC’s Energy Division and staff at the California Energy Commission to obtain the data necessary to calculate its monthly local capacity requirement. A preliminary estimate of MBCP’s annual local capacity requirement for the ten-year planning period ranges from approximately 221 to 235 MW as shown in the following table:

MBCP Implementation Plan, August 2017

Monterey Bay Community Power Local Capacity Requirements (MW) 2018 to 2027

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
MBCP Peak (MW)	620	613	610	606	602	598	594	590	586	582
Local Capacity Requirement (% of Peak)	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%
Greater Bay Area Share of Local Capacity Requirement (%)	42%	42%	42%	42%	42%	42%	42%	42%	42%	42%
Other PG&E Areas Share of Local Capacity Requirement (%)	58%	58%	58%	58%	58%	58%	58%	58%	58%	58%
MBCP Local Capacity Requirement Greater Bay (MW)	99	98	97	97	96	95	95	94	93	93
MBCP Local Capacity Requirement Other PG&E (MW)	137	135	134	134	133	132	131	130	129	128
MBCP Local Capacity Requirement, Total (MW)	235	233	232	230	229	227	226	224	223	221

The CPUC assigns local capacity requirements during the year prior to the compliance period; thereafter, the CPUC provides local capacity requirement true-ups for the second half of each compliance year.

MBCP will coordinate with PG&E and appropriate state agencies to manage the transition of responsibility for resource adequacy from PG&E to MBCP during CCA program phase-in. For system resource adequacy requirements, MBCP will make month-ahead showings for each month that MBCP plans to serve load, and load migration issues would be addressed through the CPUC's approved procedures. MBCP will work with the California Energy Commission and CPUC prior to commencing service to customers to ensure it meets its local and system resource adequacy obligations through its agreement(s) with its chosen electric supplier(s).

Renewables Portfolio Standards Energy Requirements

Basic RPS Requirements

As a CCA, MBCP will be required by law and ensuing CPUC regulations to procure a certain minimum percentage of its retail electricity sales from eligible renewable energy resources. For purposes of determining MBCP's renewable energy requirements, the same standards for RPS compliance that are applicable to the distribution utilities are assumed to apply to MBCP.

California's RPS program is currently undergoing reform. On October 7, 2015, Governor Brown signed Senate Bill 350 ("SB 350"; De Leon and Leno), the Clean Energy and Pollution Reduction Act of 2015, which increased California's RPS procurement target from 33 percent by 2020 to 50 percent by 2030 amongst other clean-energy initiatives. Many details related to SB 350 implementation will be developed over time with oversight by designated regulatory agencies. CPUC Decision 16-12-040 established three additional compliance periods for calendar years 2021 through 2030 – these periods have been established in the following manner: 2021-2024; 2025-2027; and 2028-2030. With regard to these periods, retail sellers must procure no less than 40 percent of their retail sales from eligible renewable resources by December 31, 2024; retail sellers must procure no less than 45 percent of their retail sales from eligible renewable resources by December 31, 2027; and retail sellers must procure no less than 50 percent of their retail sales from eligible renewable resources by December 31, 2030. During the intervening

years between 2021 and 2030, a straight line methodology will be used to measure progress in achieving applicable RPS mandates, consistent with CPUC Decision 11-12-020. For the 2030 calendar year and beyond, current legislation requires that all retail sellers continue procuring a minimum 50 percent of all retail sales from eligible renewable energy resources.

MBCP will also adopt an integrated resource plan in compliance with SB 350 – MBCP understands that various details related to this planning requirement have yet to be developed, and MBCP intends to monitor and participate, as appropriate, in pertinent proceedings to promote the preparation and submittal of a responsive planning document. Furthermore, MBCP will ensure that all long-term renewable energy contracting requirements, as imposed by SB 350, will be satisfied through appropriate transactions with qualified suppliers and will also reflect this intent in ongoing resource planning and procurement efforts.

MBCP’s Renewables Portfolio Standards Requirement

MBCP’s annual RPS procurement requirements, as specified under California’s RPS program, are shown in the table below. When reviewing this table, it is important to note that MBCP projects increases in energy efficiency savings as well as increases in locally situated distributed generation capacity, resulting in only a slight upward trend in projected retail electricity sales.

	Monterey Bay Community Power RPS Requirements (MWH) 2018 to 2027									
	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Net Retail Sales	2,421,935	3,574,542	3,581,955	3,585,837	3,589,773	3,593,763	3,597,807	3,601,905	3,606,058	3,610,266
Annual Procurement Target	702,361	1,108,108	1,182,045	1,244,285	1,306,677	1,369,224	1,431,927	1,494,791	1,557,817	1,621,009
% of Current Year Retail Sales*	29%	31%	33%	35%	36%	38%	40%	42%	43%	45%

*Note: Consistent with applicable CPUC Decisions, MBCP applied a straight-line increase from California’s 33 percent RPS procurement mandate in 2020 to California’s new, 50 percent RPS procurement mandate in 2030.

Purchased Power

Power purchased from power marketers, public agencies, generators, and/or utilities will be a significant source of supply during the first several years of MBCP Program operation. MBCP will initially contract to obtain all of its electricity from one or more third party electric providers under one or more power supply agreements, and the supplier(s) will be responsible for procuring the specified resource mix, including MBCP’s desired quantities of renewable energy, to provide a stable and cost-effective resource portfolio for the Program.

Renewable Resources

MBCP will initially secure necessary renewable power supply from its third party electric supplier(s). MBCP may supplement the renewable energy provided under the initial power supply contract(s) with direct purchases of renewable energy from renewable energy facilities or from renewable generation developed and owned by MBCP. At this point in time, it is not possible to predict what projects might be proposed in response to future renewable energy solicitations administered by MBCP, unsolicited proposals or discussions with other agencies. Renewable projects that are located virtually anywhere in the Western Interconnection may be considered as long as electricity is deliverable to the CAISO control area, as required to meet the Commission's RPS rules and any additional guidelines ultimately adopted by MBCP. The costs of transmission access and the risk of transmission congestion costs will be considered when evaluating offers made by suppliers and developers.

Energy Efficiency

MBCP's energy efficiency goals will reflect a strong commitment to increasing energy efficiency within the tri-county area, expanding beyond the savings achieved by PG&E's programs. To promote the achievement of this goal, MBCP plans to complete the CPUC application process for third party administration of energy efficiency programs and use of funds collected through the existing public benefits surcharges paid by MBCP customers. To the extent that MBCP is successful in this application process, receiving funding to administer additional energy efficiency programs within the region, it will seek to maximize end-use customer energy efficiency by facilitating customer participation in existing utility programs as well as by forming new programs that will displace MBCP's need for traditional electric procurement activities. Additional details related to MBCP's energy efficiency plan will be developed once MBCP Program phase-in is concluded.

MBCP forecast that energy efficiency savings related to the demand-side portion of the MBCP resource plan will be 0.5 percent of MBCP's projected energy sales by 2024. These savings would be in addition to the savings achieved by PG&E administered programs. Achieving this goal would mean at least a doubling of energy savings relative to the status quo. It is assumed that energy efficiency programs of MBCP will focus on closing the gap between the vast economic potential of energy efficiency within the member communities and what is typically achieved.

Demand Response

Demand response programs provide incentives to customers to reduce demand upon request by the load serving entity (i.e., MBCP), reducing the amount of generation capacity that must be maintained as infrequently used reserves. Demand response programs can be cost effective alternatives to procured capacity that would otherwise be needed to comply with California's resource adequacy requirements. The programs also provide rate benefits to customers who have the flexibility to reduce or shift consumption for relatively short periods of time when generation capacity is most scarce. Like energy efficiency, demand response can be a win/win

proposition, providing economic benefits to the electric supplier as well as customer service benefits.

In its ruling on local resource adequacy, the CPUC found that dispatchable demand response resources as well as distributed generation resources should be counted for local capacity requirements. This resource plan anticipates that MBCP's demand response programs would partially offset its local capacity requirements beginning in 2021.

PG&E offers several demand response programs to its customers, and MBCP intends to recruit those customers that have shown a willingness to participate in utility programs into similar programs offered by MBCP. MBCP may also adopt a demand response program that enables it to request customer demand reductions during times when capacity is in short supply or spot market energy costs are exceptionally high.

Appropriate limits on number and duration of power curtailments that can be called will be included in MBCP's demand response program design. Measurement protocols for customer performance of its curtailment obligations shall be established. Performance measurement should include establishing a customer specific baseline of usage prior to the curtailment request from which demand reductions can be measured. MBCP may utilize experienced third party contractors to design, implement and administer its demand response programs.

Distributed Generation

MBCP will work to promote deployment of photovoltaic distributed generation systems within its service territory, with the goal of optimizing the use of the available incentives that are funded through current utility distribution rates and public benefits surcharges. MBCP also plans to implement a net energy metering program and a feed-in-tariff and other programs similar to those being offered by the incumbent utility to promote local investment in distributed generation.