White Paper:
MBCP Microgrid SmartConnect Program Analysis

Synopsis

Monterey Bay Community Power (MBCP) has unveiled a new program in support of microgrid development for member agencies in the MBCP region. The new program, called the "Microgrid SmartConnect Program," has groundbreaking potential to catalyze a CCA-centric microgrid model, and there is work ahead to ensure the new program fully unlocks economic development opportunities in the region. If correctly structured, the program should provide opportunities that translate into revenue-generating opportunities for both MBCP and its member agencies. Each has legitimate and symbiotic roles to play in disseminating the public benefits that accrue when municipal assets are re-purposed to support microgrid development and local cities play host to renewable energy power plants.

Distributed Power/Distributed Benefit

Much of the impetus behind MBCP's Microgrid SmartConnect Program is that it would supplement PG&E's ongoing grid modernization efforts and support continued growth in the region's industrial parks. This is an important benefit but one that will quickly have diminishing returns as PG&E resolves its grid capacity issues in the region. Nonetheless, local distributed energy has an important role to play in grid modernization, and MBCP is to be applauded for its forward thinking. The programmatic benefits of MBCP's new program are not limited to grid modernization. The new program has the potential to improve MBCP's earnings on some of its largest commercial accounts, and these earnings can support higher levels of community-benefit programming at MBCP. This benefit of revenue enhancement may, in the long term, be as important (or even more so) than grid modernization.

Of course, none of this is possible without the partnership of MBCP's member agencies, who must be willing to host microgrids and re-purpose local resources to construct solar fields, wind turbines, battery energy storage systems, and other power generating assets necessary for a successful microgrid. It is the host community that must live with the changing landscape brought about by renewable energy development and who are best suited to ensure that such

changes remain compatible with the resource protection ethic that is guarded by local government in its role as steward of the local public interest.

Local jurisdictions can also serve as a useful conduit for a locally distributed benefit that brings geographic balance in MBCP's menu of programming options. Unlike an electric vehicle program, which tends to benefit higher-income areas more than the agricultural and farmworker communities in the region, the Microgrid SmartConnect Program is implementable in every local jurisdiction in the region, not favoring one demographic over another.

Two-Tiered Program Structure

While some MBCP member agencies have already been actively exploring the feasibility of microgrid development, not every local jurisdiction is interested in playing an active role in microgrid development and operations. Therefore, the Microgrid SmartConnect Program should be designed to accommodate both active and passive partners in a two-tiered program structure.

Tier 1 Projects

Tier 1 projects are those instances where MBCP sees microgrid potential but where the host jurisdiction is interested in playing a passive role in the development and operation of a microgrid in their community. MBCP would be responsible for all aspects of project development and ongoing operations. Revenues potential for the Tier 1 partner would be commensurate with its level of participation and risk and would, therefore, probably be limited to modest earnings from land leases, rights-of-way, etc. For these Tier 1 projects, MBCP would have to shoulder the expense and risk of upfront feasibility work, as the cost of such work far exceeds the modest earnings to be gained by the passive partner from land leases. MBCP would stand to earn higher project revenues in exchange for assuming this upfront risk, but if the project proves to be infeasible, it would also shoulder the loss.

Tier 2 Projects

Tier 2 projects, on the other hand, are those instances where the host jurisdiction is willing to play an active role in the development and operation of the microgrid. MBCP and the Tier 2 partner would work together in project development and share the responsibility for ongoing operations.[1] Under this arrangement, the Tier 2 partner would bear the expense and risk

[1] For projects involving an active Tier 2 partner, development and operations would be seamlessly managed through a joint procurement process. MBCP and the Tier 2 partner would prepare a single solicitation for EPC services and for operating lease services. Under the unified contract (or contracts) that result, MBCP project revenues would cover the cost of developing and operating power generation assets, while revenues earned by the Tier 2 partner would cover the cost of developing and operating the microgrid power delivery system. The cost of early feasibility work would be shared proportionately.

of upfront feasibility work and, provided a viable project emerges, fold this cost into the project's engineering, procurement, and construction (EPC) budget.

This "active role" for the Tier 2 partner would be limited to owning and operating the system's "Poles and Wires," which is a logical role for the active Tier 2 partner (as the local jurisdiction already owns the rights-of-way needed for power distribution) and respectful of MBCP's established core business (which is power procurement—not power transmission and delivery).[2] Revenues for the Tier 2 partner would be commensurate with the increased level of expense and risk and therefore include earnings (beyond land leases) for the development and operation of "Poles and Wires," as well as some "margin" to maintain reserve accounts and fund localized program benefits.

New Revenue Structure

So, what do the numbers say? What is the revenue generating potential of a CCA-centric microgrid model, and is it enough to justify project development risks and shared project revenues? The answer to that question, at least in the case of a project designed to serve large industrial customers, is: yes.

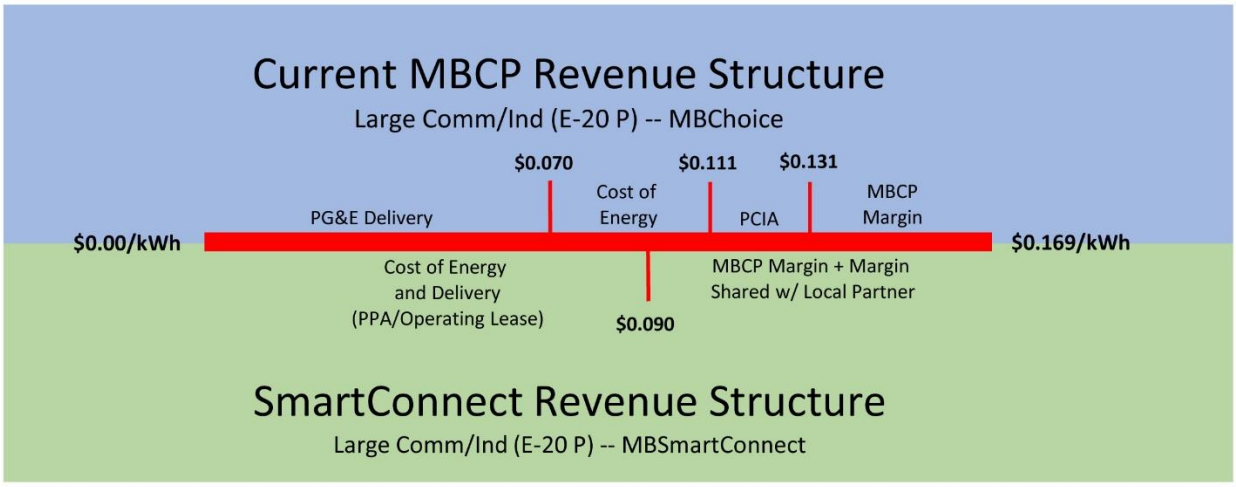
The current levelized cost of energy experienced by the large commercial/industrial customer (customer class E-20 P) is approximately $0.17 per kWh.[3] The cost structure for this tariff includes component costs for power generation, power delivery, and the PCIA. When compared alongside the cost structure for the CCA-Centric microgrid model, we see increased revenue potential for the CCA. Figure 1 presents a graphical representation of expected cost and revenues for the large commercial/industrial customer under the Microgrid SmartConnect Program.

As shown by Figure 1, even after factoring in revenue for the active Tier 2 partner, the proposed microgrid partnership between MBCP and its member agencies has the potential to improve MBCP's earnings from participating large commercial/industrial customers in the region.

[2] Power transmission and delivery remains PG&E's established business in Northern California's CCA territories. It's also worth noting that local municipal authorities are not governed by the California Public Utilities Commission (CPUC), so it's possible that assigning the role of power delivery to the local municipal partner may even provide some level of insulation from CPUC rule making that may be expected to result when CCA-centric microgrids are used to avoid the Power Charge Indifference Adjustment.

[3] This is for Customer Class E-20 P. Source: PG&E - MBCP Joint Rate Comparison, March 2018 See https://www.pge.com/pge_global/common/pdfs/customer-service/other-services/alternative-energy-providers/community-choice-aggregation/mbcp_rateclasscomparison.pdf

Figure 1: Microgrid SmartConnect Program Revenue Analysis



Source: ZeroCity LLC, February 2019; PG&E -- MBCP Joint Rate Comparison, March 2018; MBCP December 2018 Financial Dashboard

Summary

- **Distributed Energy/Distributed Benefits.** MBCP's "Microgrid SmartConnect Program," if correctly structured, should provide revenue-generating opportunities for both MBCP and participating member agencies. Each has a legitimate and symbiotic role to play in disseminating the public benefits that accrue when municipal assets are re-purposed to support microgrid development and local cities play host to renewable energy power plants.

- **Two-Tier Program Structure.** The Microgrid SmartConnect Program should be designed to accommodate both passive and active partners in a two-tiered program structure. "Poles and Wires" is a logical role for the active partner and one that respects MBCP's established role as the region's energy procurer. Active partners, who have shouldered the risk of completing feasibility assessments with no guarantee of success, must recoup upfront feasibility costs as part of any resulting capital investment.

- **New Revenue Structure.** Programs revenues must flow to both MBCP and the active partner, and these revenues must correspond to the cost and risks borne by each in their respective roles. The re-vamped revenue structure enabled by the program is sufficient to provide both of these benefits.

Respectfully,
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