EAST BAY COMMUNITY ENERGY

Power Procurement Update

DATE: September 11, 2020

Agenda

- August Heat Wave Summary
- Energy Prepay Overview
- Fall Renewables and Storage RFO Update

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Prepay Introduction

- An energy prepayment is a long-term non-recourse financial transaction between a tax-exempt Load Serving Entity (LSE) and a taxable financial counterparty (bank, called “Prepay Supplier") utilizing the municipal bond market.
  - LSE commits total of ~$350MM-$850MM of energy supply contracts (combined contract notional values)
  - LSE utilizes prepay in order to lower customer energy costs
- Municipal utilities (and tax-exempt entities such as CCAs) in the US can prepay for a supply of electricity or natural gas from a taxable entity and fund that prepayment with tax-exempt municipal bonds. The LSE must sell the commodity to their retail end-users residing within their traditional service area.
  - This structure is well known and regularly used for gas and is now being applied towards renewables PPAs
  - Codified in US Tax Law. Since first prepayments of natural gas were done in the early 1990s, the IRS issued rules allowing tax-exempt prepayments and Congress enacted legislation specifically allowing the transactions (National Energy Policy Act of 2005; Section 1327)

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Prepay Introduction

Structure:

- Term: Typically 30-year term
- Transacting Parties:
  1. Tax-exempt Load Serving Entity (LSE, also called "Prepay Buyer")
  2. Taxable financial counterparty (bank, called "Prepay Supplier")
- Process:
  1. Prepay Supplier assigned into existing energy supply contract(s) held by LSE
  2. Municipal bonds issued by conduit, amounting to combined notional value of assigned contracts
  3. Prepay Supplier pays the contract price to PPA Seller, immediately transferring all electricity and attributes to LSE
  4. LSE pays the Prepay Supplier at discounted rate, achieving procurement cost savings
- Takeaway: Prepay Supplier holds and utilizes capital, creating taxable vs. tax-exempt arbitrage that enables discount

Benefits:

- **Lower energy procurement costs:** Savings over 30-year term targeting 8-12% per year on power quantities delivered under prepay

Risks:

- **Regulatory:** Addressing risks related to compliance with SB350 and Emissions Performance Standard (i.e. receipt of PCC1 RECs, no disruption to deliveries); Opportunity cost of committing to 30-year prepay transactions

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Key Elements of a Prepay Transaction

Power Contract Assignment:

- Existing renewable PPAs are assigned to the taxable Prepay Supplier. The LSE continues to ***take and pay*** for energy and attributes delivered through the contract.
- All other terms of the PPA are unchanged.
- If the prepay program terminates early, prepaid supplier fails to perform, or LSE fails to perform, the LSE forgoes the future savings and the assigned PPA contract is put back to the original LSE.

Debt:

- Non-Recourse: Prepays utilize non-recourse municipal bonds and are ***not*** secured or guaranteed by the referenced entity (i.e. the CCA). Rather the debt is recourse to the Prepay Supplier (i.e. the bank receiving the prepayment). This significantly protects the CCA and mitigates risk related to the payment of power contracts novated through the prepay.
- Off Balance sheet for LSE: Bonds are issued by a municipal bond conduit and arranged by the Prepay Supplier.

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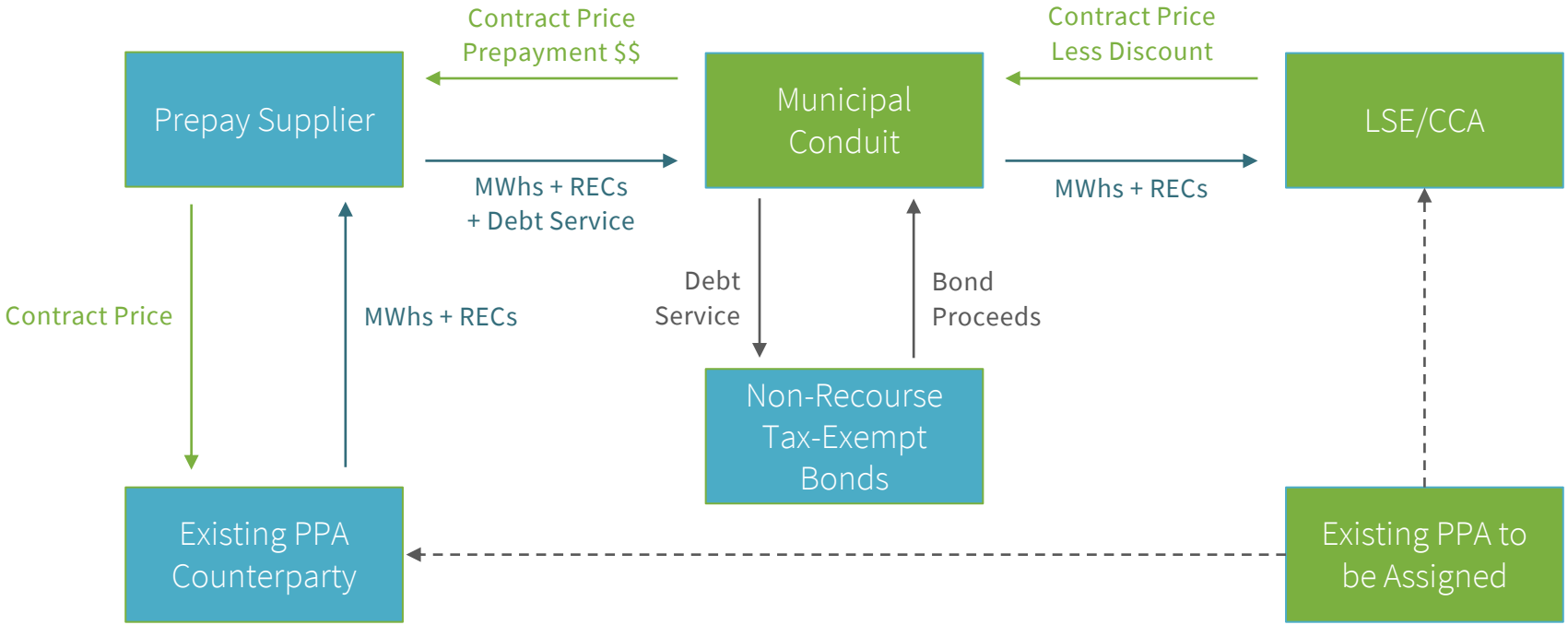
Prepayment Structure



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Market Statistics

- Nationwide: 90+ municipal transactions
  - $50+ Billion combined notional contract value
- California: 11 municipal transactions
  - $5.7 Billion combined notional contract value
- Active Suppliers: Goldman Sachs, Morgan Stanley, Royal Bank of Canada, Citi, Bank of America
  - All investment grade rated financial institutions
- Resource Types:
  - 95% of transactions to date have been exclusively for natural gas, remainder including an electricity 'switch' at a certain year.
  - The same tax law and similar transaction structure enables the program for electricity from renewables contracts, as well. The market is seeing activity and preparation for these transactions, particularly from CCAs.

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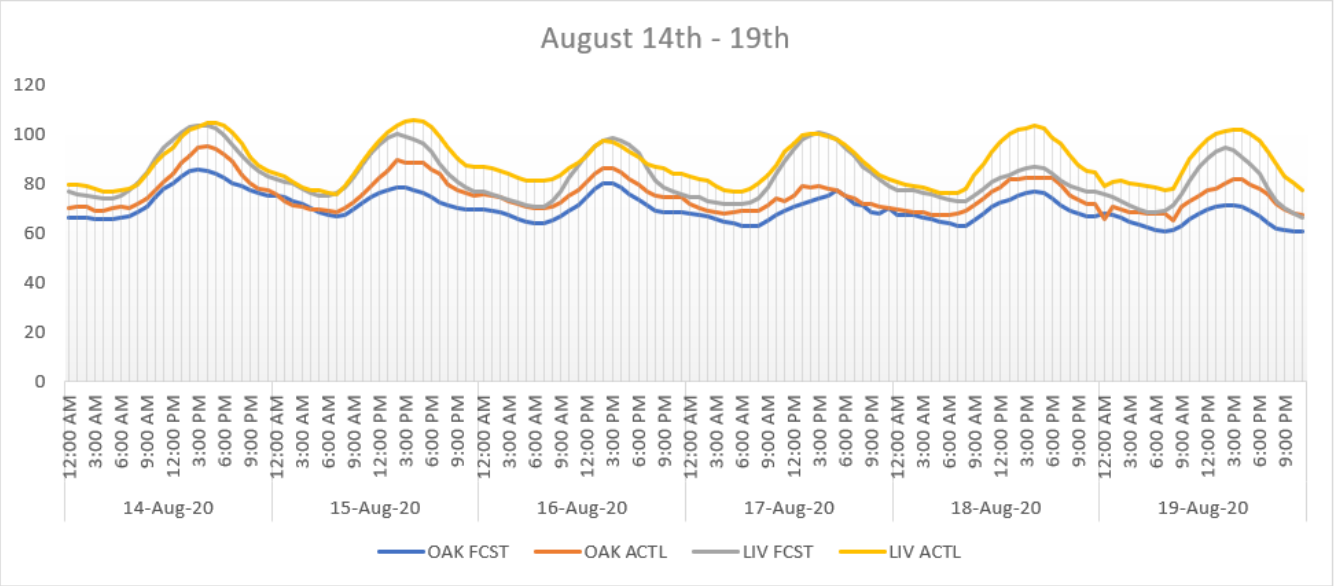
Aug Heat Wave Introduction

- California experienced rolling blackouts on August 14th and 15th across the state due to a combination of high system demand due to a record heat wave, an unanticipated loss of supply, and low net import availability due to hot temperatures throughout the West
- Up to 4 million customers experienced an outage
- CAISO anticipated increased loads and high temperatures and reacted with several orders and alerts, though has received criticism for not providing enough warning / outreach
- Confluence of Events
  - A historic heat storm across the entire West
  - Natural gas plants tripped offline
  - Material fluctuations in wind output
  - Critical shortages on imports (due to the heat wave and failed CAISO Flex Ramp Tests)
  - The grid could not support the demand in the evening ramp once solar generation fell off

Record persistent high temperatures



- August 2020 was the hottest August on record in California
- Death Valley reached 130° on Aug 16th, the highest temperature recorded worldwide since 1931
- The Bay Area broke numerous temperature records including 95° in Oakland, 95° in San Francisco, and 103° in San Jose.

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Outages

- CAISO did anticipate increased loads and high temperatures. CAISO issued orders restricting maintenance operations, issued alerts regarding potential system reserve deficiency, and issued a Flex Alert, a call for customers to voluntarily reduce their electricity use.
- **August 14th** – circumstances however worsened due to an unexpected natural gas plant tripping offline, a historic heat storm across the West and a failed CAISO Flex Ramp test, contributing to shortages on imports. The grid could not support the demand in the evening ramp once solar generation fell off. Utilities were ordered to cut power to customers.
- **August 15th** – similar conditions as the day prior, including a failed CAISO Flex Ramp test which stranded some imports, and further supply constraints due to material fluctuations in wind output during the evening ramp. This was further magnified from another day of unexpected losses in some gas generating resources. The grid could not support the demand in the evening ramp once solar generation fell off. Utilities were ordered to cut power to customers.
- **August 16th and 17th** – No rolling blackouts due to reduced peak demand and increased supply led by the Governor's office, CAISO, load serving entities, energy supply side and demand side organizations, and the people of California.

Call to Action across California

- Conservation Messaging
  - The CAISO, CEC and CPUC supported the Governor's Office and the California Governor's Office of Emergency Services to publicly request electricity customers lower energy use during the most critical time of the day, 3:00 pm to 10:00 pm
  - The CAISO Issued Flex Alerts and warnings
  - EBCE, along with the CPUC, CAISO, IOUs, and other CCAs actively pursued conservation messaging and advertising
- Demand Side
  - Demand Response and backup generators called upon. EBCE has contracted with DR suppliers and validated they performed during the heat wave
  - Data Center use of backup generation
  - US Navy and Marine Corp ship disconnections
  - Home battery charging adjustments
- Supply Side
  - CAISO executed significant event Capacity Procurement Mechanism to procure additional supply resources
  - Department of Water Resources (DWR) and Metropolitan Water District (MWD) adjusted water operations
  - CEC worked with the City and County of San Francisco to maximize power output at Hetch Hetchy
  - CEC worked with private power producers to contribute additional generation from IPP portfolios focused on CSPV
  - PG&E deployed temporary generation, that was procured for public safety power shutoff purposes
  - LADWP and SCE brought in additional general capacity

Financial Impacts

	Hedge Coverage	Load MWh	Energy & Capacity Costs	Hedge Perf.	Net Energy Costs
14-Aug	73%	22,768	$ (4,873,818)	$ 1,673,164	$ (3,200,654)
15-Aug	78%	21,462	$ (3,606,682)	$ 1,072,063	$ (2,534,619)
16-Aug	68%	21,066	$ (2,268,399)	$ 369,308	$ (1,899,091)
17-Aug	75%	22,344	$ (4,785,070)	$ 1,584,700	$ (3,200,370)
18-Aug	74%	22,631	$ (4,625,284)	$ 861,792	$ (3,763,492)
19-Aug	76%	21,836	$ (3,842,810)	$ 1,505,123	$ (2,337,687)

August Average, w/o 14th-19th	94%	17,479	$ (1,085,597)	$ (94,131)	$ (1,179,728)
August Average	90%	18,357	$ (1,649,742)	$ 152,029	$ (1,497,713)
July Average	98%	16,593	$ (747,929)	$ (228,121)	$ (976,050)

- Revenue reconciliation is in process. Increased revenues partially offsets increase in energy costs
- EBCE met all system RA obligations for 2020, including August RA requirements
- EBCE procured in compliance to our risk management guidelines and hedge targets

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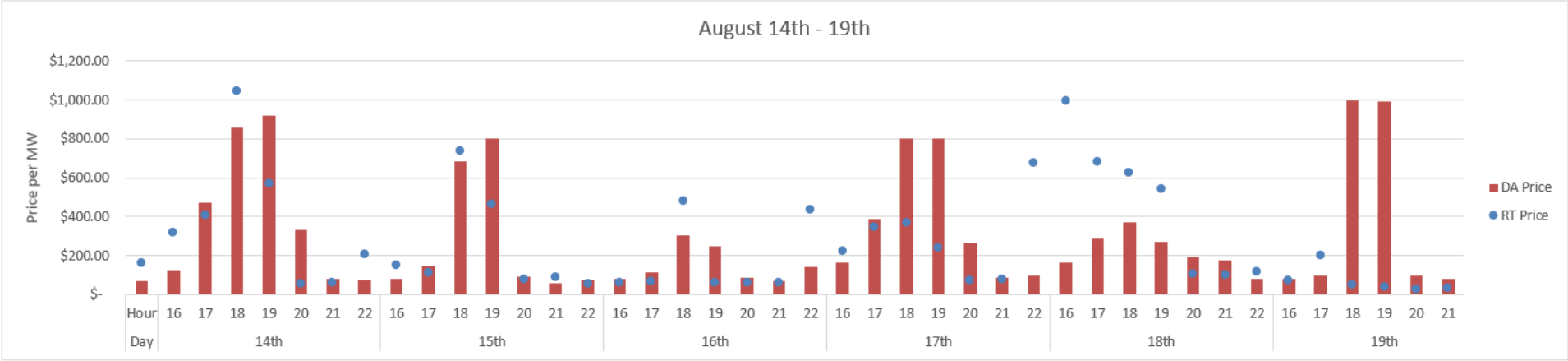
Day Ahead and Real Time Hourly Pricing



- Note: Hours shown here reflect peak hours in the late afternoon and evening ramp. Pricing in non-peak hours were $30 - $80/MWh

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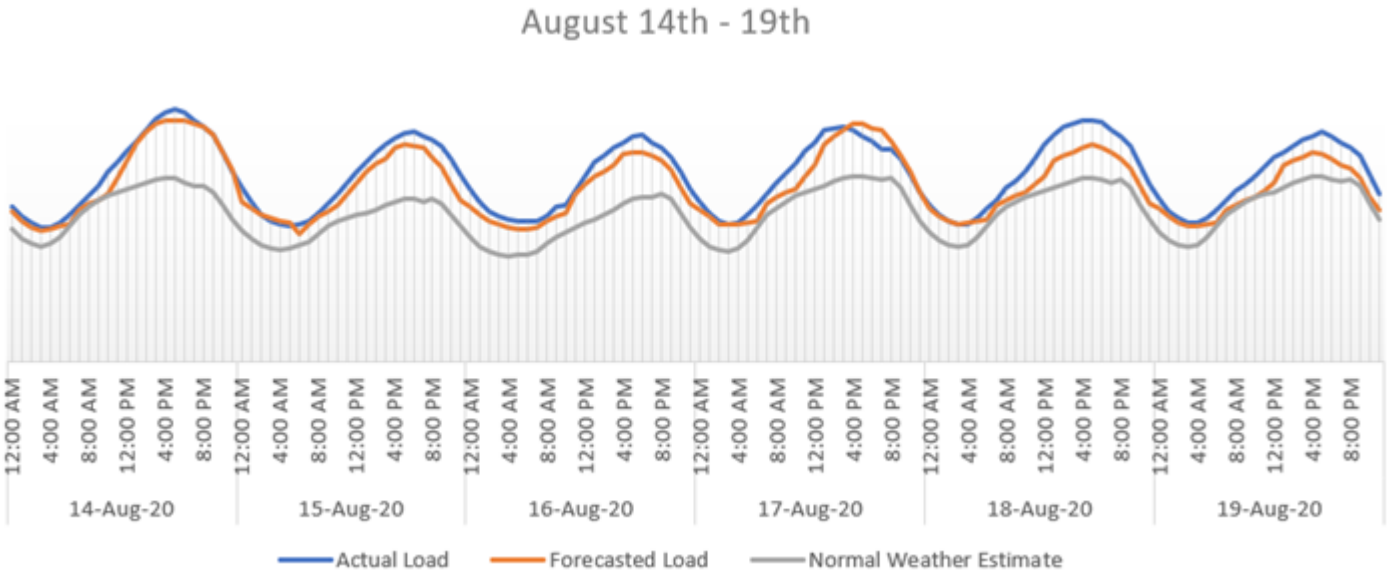
Actual Load vs. Day-Ahead Load Forecast



- During peak hours demand was up to 50% higher than normal
- Even with unusually high temperatures, our load forecast proved to be reasonably accurate

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System-wide actions for reliability improvement

- Improve peak demand forecast process
- Review resource adequacy obligations
- Enable more distributed energy resources and load flexibility
- Review available capacity of solar and wind resources
- CPUC ordered 3,300MW of new capacity online by 2023
- Expand demand response programs
- Increase battery storage procurement
- Gas generation extensions to support the transition

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Fall Renewables & Storage RFO Update

- IRP analysis completed and submitted leading to next phase of procurement
- Planned RFO launch in Oct/Nov 2020 focused on long-term renewable, storage, and large hydro procurement (in-state and out-of-state)
  - As-Available RPS-eligible resources
  - As-Available RPS-eligible resources plus Energy Storage
  - Stand-alone Energy Storage (tolling PPA)
  - Shaped RPS Energy Product
  - Indexed Energy plus RPS attributes
  - Shaped Clean Energy Hedge
- Eligible projects will be greater than 10MW in size and include both in-state and out-of-state projects

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