Massachusetts Bay Transportation Authority

Electricity Procurement

Fiscal and Management Control Board

October 5, 2020

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Current MBTA Electricity Contract

- Contract with BP for the supply of 70% of the MBTA's current electricity load
- Fixed block procurement
- Five year contract from 1/1/2016 through 12/31/2020
- Contains no provisions for the purchase of renewable energy
- Contract structure (e.g., product, term and provisions) has been used by the MBTA for more than 20 years.

Product Options and Considerations

Possible Options

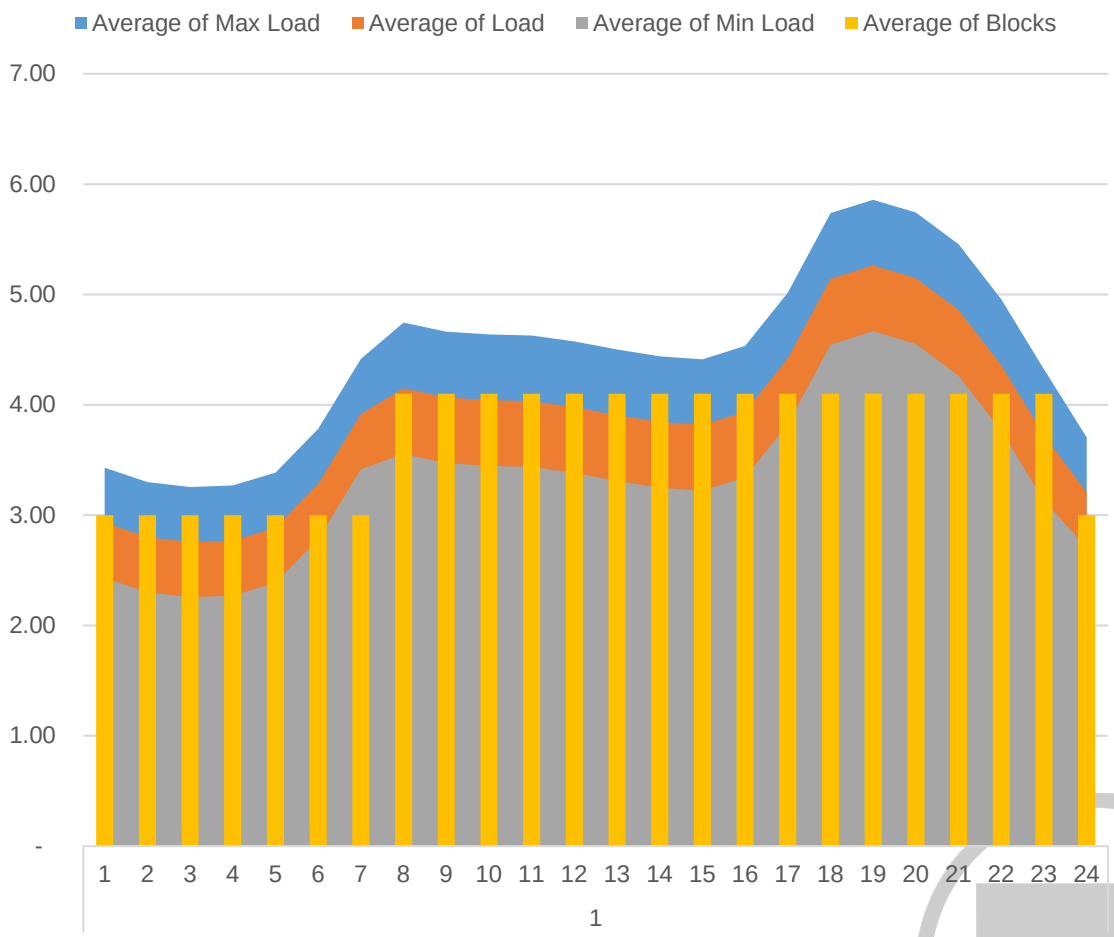
- Fixed Block
- Load Following
- Spot Market Power

Considerations

- Anticipated consumption
- Beneficial pricing and risk management
- Price volatility and budget certainty

Fixed Price Block Power

- MBTA buys a fixed volume of electricity at a specified price with delivery to a predetermined location.
- Fixed volumes and prices are constant throughout the term.
- Sizing calculated based on a predetermined hedge percentage (70% of annual load).



Fixed Block Considerations

Pros

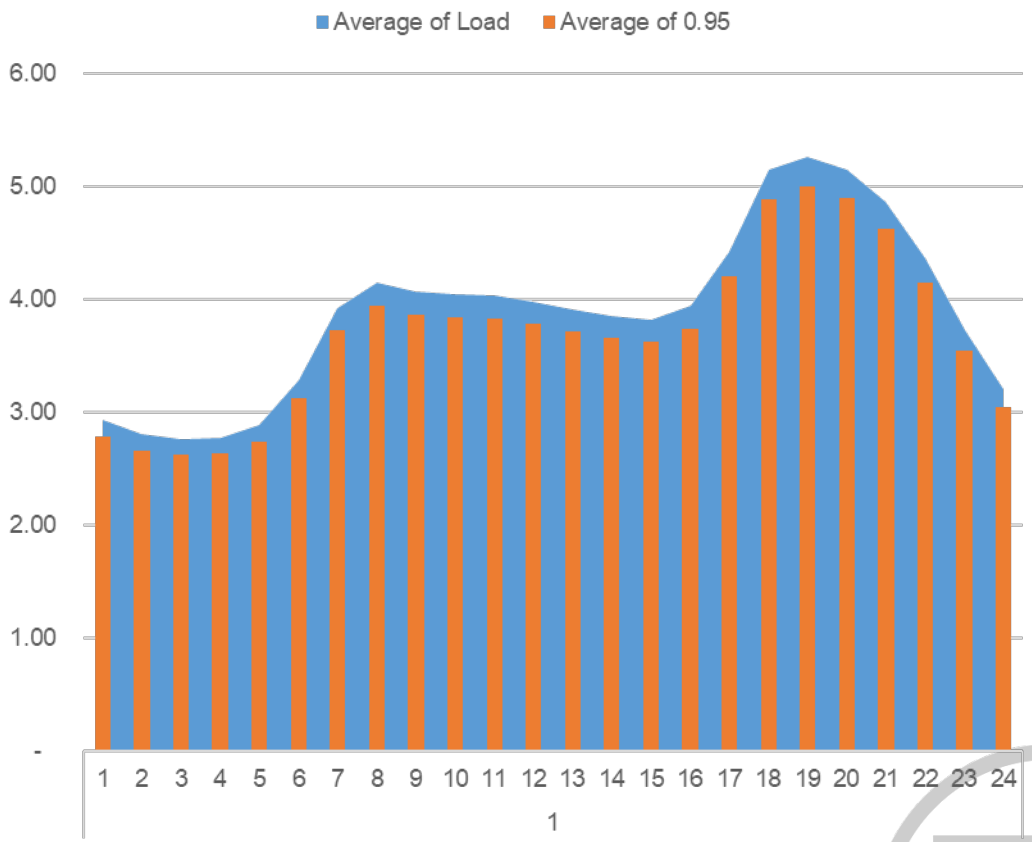
- In most cases, blocks are the cheapest hedging option.
- Deep liquidity and price visibility - Suppliers are willing to sell/buy blocks at a moments notice, and block prices can be easily derived off pricing on Intercontinental Exchange (ICE), and other brokerage firms.
- Supplier Diversity – most major suppliers will sell this product. Good competitive pricing.
- Provides price/budget certainty for volume hedged.

Cons

- **Load Variability Risk** – Block volumes are based on "forecasted average load," which may result in having too much power at times (long), or not enough power at times (short).
- When "long" MBTA sells power back to ISO, and when "short" MBTA must buy power from ISO at the "spot market price" or real time price.
- Can forecast, but a buyer of blocks ultimately doesn't know the revenue/cost of buying/selling back to ISO because its based-on real time pricing.
- Buying/Selling activity causes deviations between forecasted and actual budget.
- This is because winter load levels have dropped since 2016, when the purchase was sized and executed.

Load Following Power

- Calls for the seller to provide an agreed upon % of the total load for each hour. Both pricing and percentage of load are fixed for the term of the deal.
- After the fact, usually the following day, the buyer reports entire load for each hour to the seller who then schedules the appropriate amount of MWs for settlement.
- Based on percentage of actual load and not a fixed MW amount.



Load Following Considerations

Pros

- No sensitivity to hourly load shape or weather.
- If buyer purchased 100% load follow product, there would be no buying/selling back to ISO.
- Load follow guarantees budget certainty for the percentage of load it covers.

Cons

- Typically more expensive than blocks. (3-10%) due to uncertainty associated with load variability.
- Typically requires predictable loads. Premium paid when usage deviates from predicted loads.
- Load follow contracts often inhibit the buyer to install “behind the meter” projects such as peak shave generators, demand response or solar.

Spot Market Considerations

- In a falling commodity price environment, spot market power tends to be cheaper than hedges. In a rising commodity price environment, hedges are cheaper than spot market.

- In any commodity price environment, the spot market can be extremely volatile allowing for very little budget certainty. Having a portion of the portfolio in the spot market requires an entity to have significant cash on hand to withstand price shocks.

MBTA Electricity Procurement

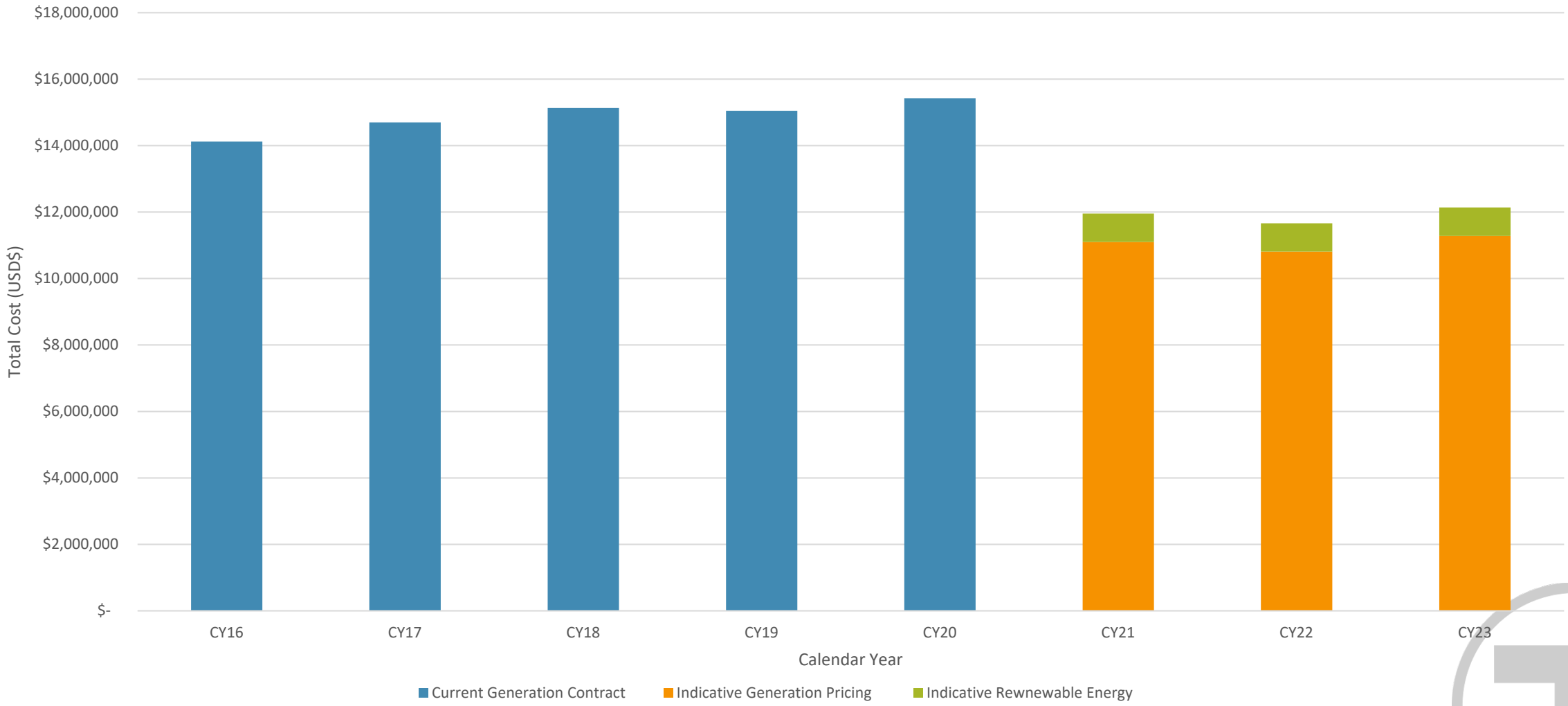
- Fixed price block power equal to 70% of the MBTA's electricity needs
- Three-year contract duration
- Includes provision for the purchase of certified Renewable Energy Credits (RECs)
- Bids being accepted on multiple scenarios:
  - Provide electricity blocks
  - Provide electricity blocks + Renewable Energy Credits
  - Provide Renewable Energy Credits only

Procurement Process and Timelines to Date

- Request for Qualifications Issued: 8/21/2020
- RFQ Responses & Indicative Pricing Provided: 9/11/2020

  - 3 Bidders submitted
  - Indicative Bids Submitted Range from $11.06 million per year to $11.79 million Per Year (on average over the 3 years)
    - Plus an additional $854,000 for renewable energy supply
  - Compares favorably to the $15.5 million under the current contract

MBTA Wholesale Electricity Costs 2016 through 2023 (projected)



Additional MBTA Renewable Energy Projects

Current/Underway

- Two Wind Turbines
  - Kingston & Bridgewater
- Small Scale Solar
  - Orient Heights, Braintree
- Geothermal
  - Hingham Ferry Terminal
- Solar Canopies (Underway)
  - 3 sites completed
  - Contractor is exploring 25 other locations with potential for 23 MW

New Projects to Develop

- Will launch a new solar power purchase agreement.
  - 3rd party will develop and sell power to the MBTA
  - Combination of both on and off property renewable generation
- Developing solar array on new MBTA construction – Quincy, Riverside, *etc*.
- Exploring how we can become an anchor customer for upcoming off-shore wind projects.

Next Steps

- Bidders Qualified: 10/09/2020
- Request Final Bid Prices: 10/13/2020
- Accept Final Bid Prices: 10/15/2020
- Accept Final Price: 10/16/2020

Upon selection of the best bid price, MBTA will execute a contract for its electricity needs for January 1, 2021 through December 31, 2023 with 100% of its supply coming from renewable energy sources.

Will result in a significant reduction in MBTA's carbon footprint. Currently, 36% of the MBTA's carbon emissions come from electricity usage. Those carbon emissions will be avoided as of January 1, 2021.

Request of the Fiscal and Management Control Board

That, after the completion of a competitive procurement, the General Manager be, and hereby is authorized to execute a formal contract, in a form approved by the General Counsel, with the designated low bidder, in accordance with the specifications laid out in the Request for Proposal, at a value not to exceed **$38,000,000** for a three-year term.