

# Energy Procurement Strategy (“EPS”) and Action Plan

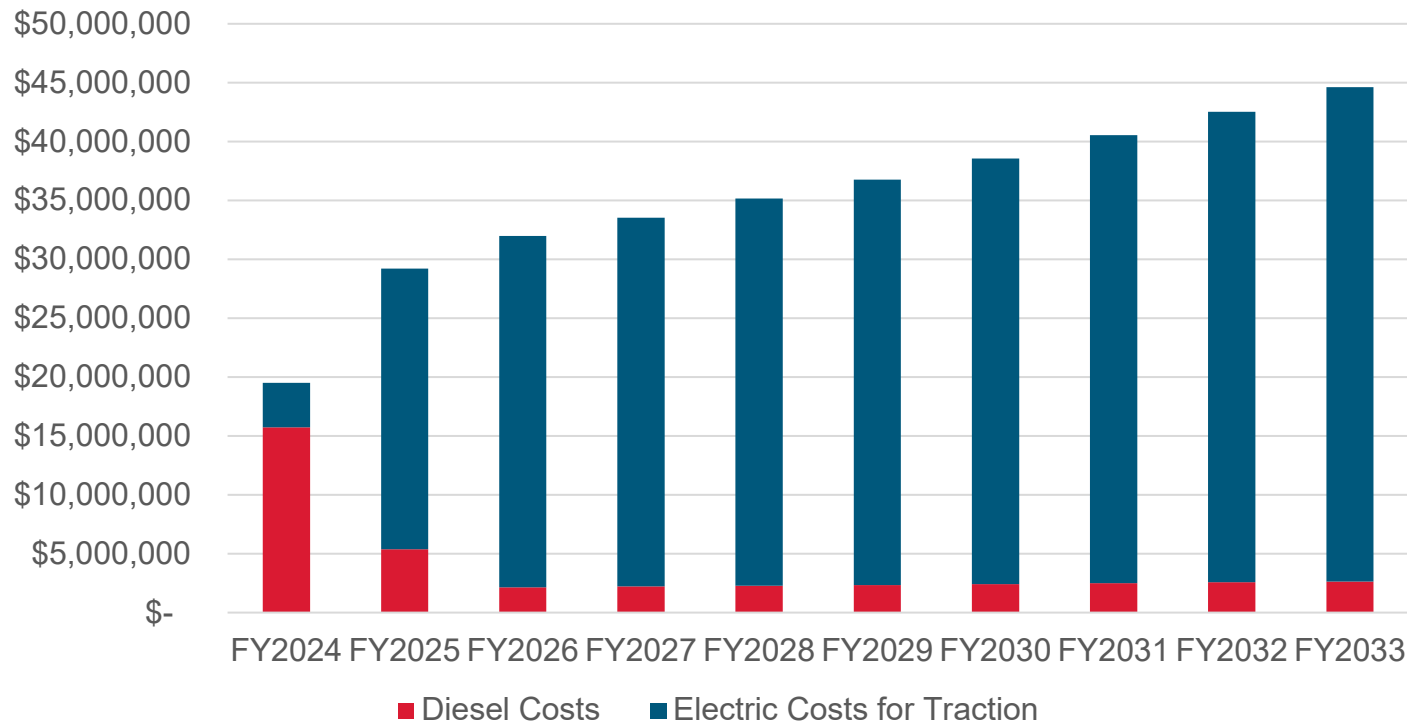
JPB Finance Committee Meeting  
July 24, 2023



# SFP 10-Year Forecast - Fuel and Electricity

- **While electrification will produce significant policy and financial benefits as an environmental and sustainability matter, it does come with operating costs.**
  - Even assuming only 5% annual increases, electric costs are projected to eclipse Caltrain’s annual cost for wages and benefits within the next two years.

Projected Annual Diesel and Electric Costs

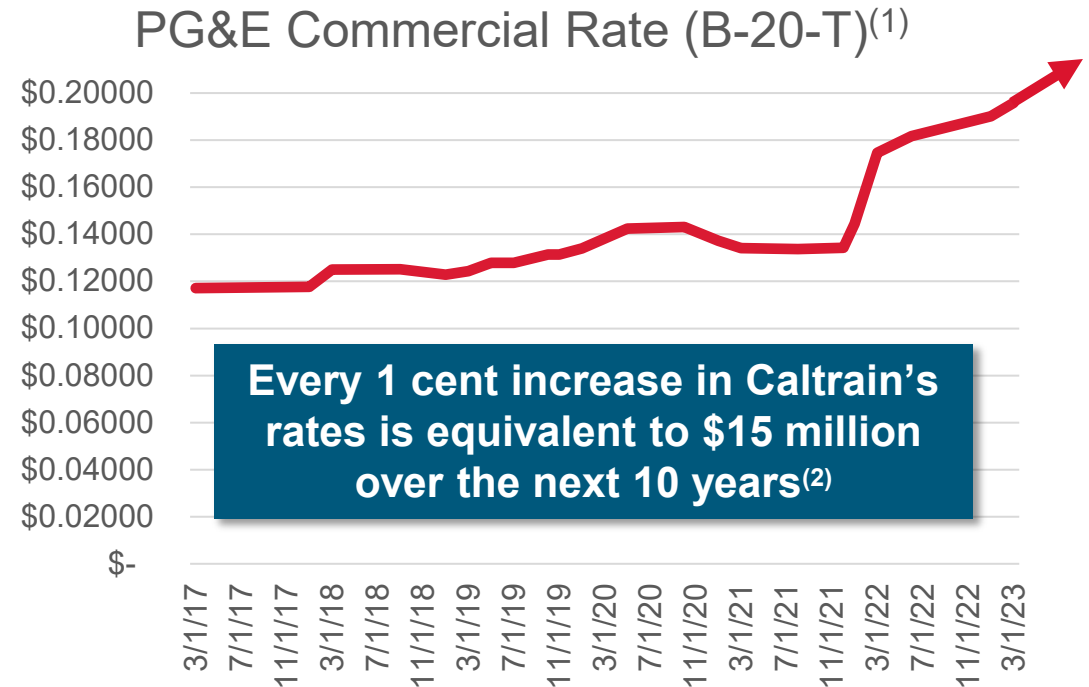


Fiscal Year	Rate Projection (per kWh) <sup>(1)</sup>
2024	\$0.20
2025	\$0.21
2026	\$0.22
2027	\$0.23
2028	\$0.24

(1) Assumes PG&E 2023 rate B-20-T equal to \$0.19589 as of March 1, 2023.

# SFP - Electric Rates are Highly Volatile

- **Caltrain will have significant exposure to the power market, and past volatility in electric rates creates substantial financial risk for Caltrain moving forward.**
  - Caltrain received the FFGA award on May 23, 2017, and from March 1, 2017, to March 1, 2023, PG&E rates for Caltrain's expected rate class have increased nearly 8 cents or approx. 67%<sup>(1)</sup>.
  - It is likely that Caltrain will not know the full extent of projected electric costs until the trains are running.
- **Policy, and corresponding strategies, for energy procurement should be priority.**
  - Net metering, which could impact usage by 30% to 40%, and Low Carbon Fuel Standards (LCFS) revenues, worth \$7M to \$10M annually, will also need to be carefully considered.



(1) Based on E-20-T rate class as of March 1, 2017 and B-20-T rate class as of March 1, 2023. Source: <https://www.pge.com/tariffs/electric.shtml#INDUSTRIAL>

(2) Assumes 128 TPD and rates increase at 5% per year.

# Where we are today

**Since the presentation of the Strategic Financial Plan in April, BB&A has taken several steps to advance the Energy Procurement Strategy (EPS).**

- Established contacts and held meetings with:
  - **Community Choice Aggregators (CCAs)**
    - Peninsula Clean Energy (PCE)
    - San Jose Clean Energy (SJCE)
  - **Northern California Power Agency (NCPA)**
    - BART is member of NCPA
    - NCPA provides scheduling and other energy services to BART
  - **Bay Area Rapid Transit District (BART)**
  - **California Air Resources Board (CARB)**

**Based on these meetings, the objective today is to outline the next steps over the short, intermediate and long-term.**

# Energy Procurement Strategy Approach

**The approach is to identify the required work streams to advance the EPS into an actionable plan for Caltrain, including:**

- Implementing energy procurement for electric train service
- Capturing value from regenerative braking
- Establishing Low Carbon Fuel Standard Credits (LCFS) program
- Evaluating long-term wholesale market access

**There are three inter-related components of the action plan:**

- Entering into negotiations with the CCA providers to determine what flexibility and opportunities may exist regarding pricing, products, net metering and/or storage (longer-term)
- Working with CARB to optimize and implement the LCFS program
- Ensuring that there is sufficient infrastructure and resources at Caltrain to support the EPS

# Summary Recommendations

## Recommendations and next steps include:

- Create expected and detailed energy load profiles by time of use
- Determine regeneration value
- Meet with additional stakeholders and potential partners
- Continue discussion/enter into negotiation with CCAs based on expected load profiles
- Work with CARB to determine Energy Efficiency Ratio (EER)
- Update value of LCFS
- Ensure sufficient staff and resources at Caltrain to support EPS moving forward



# EPS – Near-term Procurement

**Default energy procurement: Caltrain would be a retail customer of two CCA programs with PG&E delivery unless it opts to receive power from PG&E.**

- **SJCE - San Jose traction station**
  - Standard delivery rate based on PG&E B-20T
  - Zero Carbon Intensity (Green) product is certified by CARB
  - SJCE willing to discuss supply options and rates
- **PCE - South San Francisco Traction Station**
  - Standard delivery rate based on PG&E B-20T
  - Zero carbon intensity product is not currently certified by CARB
  - PCE willing to discuss supply options and rates
- **A key step is to begin formal discussions with both CCA suppliers, including:**
  - Supply options, including Green energy, and standard offering or negotiated contract
  - Possibility of longer-term contracts with discount on price
  - Net metering and storage opportunities
  - Metering data for LCFS reporting

# EPS – Near-term Load Profiles

**In order to advance conversations with the CCA providers meaningfully, Caltrain will need to complete a load profile for both traction stations.**

- Need to determine detailed load profiles based on projected time of use
- May not fully understand usage until in service

**These load profiles are necessary to:**

- Show aggregated demand and energy profiles at meters (to and from the grid)
  - Determine reactive energy requirements
- Prepare rate breakdowns for use in comparing alternatives
  - Delivery, generation, customer, demand, and energy
- Determine financial tradeoffs in energy cost vs LCFS credit value

**Quantifying and capturing the amount and benefit of regenerative braking is a key component of the load profiles.**



# EPS – Near-term Net Metering

## **Net metering (or sale back to the provider) and/or use of energy storage (longer-term) can recover a portion of the regeneration benefit**

- Net metering may be possible without the need for legislative change
  - Potential sale back to the CCA provider should be included in the proposed discussions
- Energy storage required is short duration at both traction stations and potential savings may or may not justify an energy storage project. Need to quantify:
  - Max charge/discharge rates
  - Energy and duration stored
- Explore alternatives for longer-term storage project, depending on the scale and size of storage requirement:
  - Caltrain builds storage at traction stations
  - Tolling agreement with third party developer/operator
  - Partner with developer on larger storage project

# EPS – Near Term LCFS

**Monetizing Low Carbon Fuel Standards (LCFS) tax credits is an integral component of the action plan.**

- Receive credits based on use of electricity vs diesel
  - Opt-in to program
  - Report quarterly electric usage
  - Receive LCFS credits based on electrical usage
  - Sell credits to market to derive value

**Energy Efficiency Ratio (EER) is a larger driver of LCFS value.**

- Currently assuming LCFS value of \$10M annually
- Will not be the exact same as BART
- Some flexibility in deriving calculation
- Value of credits can change based on market over time (supply and demand)

# EPS – Near Term LCFS

## **LCFS will have meaningful compliance considerations.**

- Quarterly fuel transaction data and reconciliation
- Quarterly fuel transaction report
- Annual Compliance Report
- Annual Fuel Pathway Report
- Verification Statements
- Compliance Plan and Annual Compliance Plan Implementation Reports

## **Next steps include:**

- Set up LCFS Reporting mechanism
- Complete EER Analysis
- Work with CARB to complete determination of EER
- Identify supply options and impact on LCFS
- Quantify cost/benefit of Green energy within program
- Develop and implement compliance infrastructure

# EPS – Mid to Long-term Wholesale Market

**In addition to storage, key question will be if Caltrain can/should get access to wholesale energy markets, and if so, how risk can be managed.**

- **Benefits**
  - Access to potentially lower cost resources
  - Ability to dictate Green content of procured resources
  - Potential ability to stabilize prices through longer term contracts
- **Options include:**
  - Directly or indirectly through CCAs
  - Pursuing legislative authority similar to BART
- **Key considerations include:**
  - Likelihood of success of any legislative strategy
  - Ability and strategy to manage significant risk: market/price, counterparty, operational, etc.
  - Regulatory oversight and jurisdictional agreements

# EPS – Mid to Long-term Wholesale Market

**If Caltrain seeks legislative approval to purchase directly from wholesale markets, there are significant operational and administrative considerations.**

- **Procurement strategy**
  - Forecasted and evolving demand profile
  - Portfolio makeup
- **Terms of agreement(s)**
  - Duration and number of contracts
  - Pricing strategy (fixed vs indexed)
  - Counterparty and risk management
- **Delivery of energy**
  - Transmission interconnection agreements
  - Scheduling coordination
  - Metering and reporting
- **Regulatory requirements and compliance**
  - North American Electric Reliability Corporation (NERC)
- **Administration and possible partners (NCPA, BART, CCAs)**

# EPS - Organizational Resources

## **EPS will require additional organizational resources within Caltrain.**

- Dedicated Caltrain staffing augmented through third-party services
- Budget includes 2 full time positions who are responsible for:
  - Tracking energy procurement costs and strategy
  - Evaluating alternatives
  - LCFS tracking and reporting
  - Coordinating with CCAs and CARB
  - Leading and supervising interaction with third-party vendors for LCFS, compliance and regulatory support, and energy procurement, scheduling and delivery
- **As a point of reference, BART has two full-time positions in Sustainability Division**
  - Manager of Energy and Principal Energy Analyst
  - BART is also a member of NCPA – who provides scheduling coordination and other services

# Recommendations and Next Steps

## **Recommendation #1: Create detailed and updated energy load profiles.**

- Sufficient and updated detail on demand, energy, and time of use by meter
- Identify energy flow from regeneration to grid or storage (amount, time, frequency)
- Next Steps:
  - Evaluate existing load profile information to determine if it contains necessary detail
  - Determine strategy and update existing information as necessary

# Recommendations and Next Steps

## **Recommendation #2: Meet with potential partners and begin formal discussions with CCA's.**

- Energy procurement, products, and delivery based on detailed load profiles
- Availability and cost of Green energy
- CARB certification and reporting
- Regeneration value and capture
  - Integrate net metering, storage, and/or buyback
- Next steps:
  - Identify and meet with any other potential strategic partners
  - Transmit load profiles to CCAs
  - Meet with CCAs to identify alternatives, costs, and opportunities
  - Analyze alternatives and response from CCAs
  - Make recommendations to Caltrain Board for approval
  - Negotiate term sheet for agreements, as appropriate



# Recommendations and Next Steps

## **Recommendation #3: Begin formal discussions with CARB.**

- Compare diesel vs electric train energy efficiency
- Determine Energy Efficiency Ratio (EER)
- Meet with CARB to review
- Obtain CARB approval of EER
- Update projected value of LCFS
- Next Steps:
  - Develop draft EER analysis
  - Submit preferred analysis to CARB staff
  - Determine whether or not to participate in CARB rulemaking or create stand alone pathway
  - Continue process to implement selected approach

# Schedule and Milestones

## Next steps include:

- Meet with CCAs and CARB – August
- Analyze Energy Procurement alternatives and strategy - August
- Recommendations for Board Approval – September/October
- Enter into formal negotiations with CCAs and CARB – October
- Term sheet with CCAs finalized - November
- EER approved in CARB rule making - December
- EER pathway approved – July, 2024
- Caltrain LCFS program setup and registration completed – July, 2024

FOR MORE INFORMATION

[WWW.CALTRAIN.COM](http://WWW.CALTRAIN.COM)

