ACT School Bus Advisory Services Program

QUARTERLY MEETING

MAY 30, 2023

MASSACHUSETTS CLEAN ENERGY CENTER®

Agenda

- Electric School Bus (ESB) Benefits
- Advisory Services Program Overview
- Meet the Team
- What to Expect
- Data Collection
- Site Assessment
- Analysis
- Final Plan and Presentation
- ESB Funding Opportunities
- Next Steps
- Q&A

Electric School Bus (ESB) Benefits

- Save $4,000 to $11,000 per bus in annual operational costs compared to a diesel bus.
- Improve local air quality by eliminating tailpipe emissions.
- Increase workplace satisfaction by providing a cleaner, quieter ride.
- Reduce greenhouse gas emissions by at least 50% compared to a diesel bus.
- Increase student achievement by eliminating exposure to harmful diesel exhaust

Significant State and Federal funding is available to achieve these benefits.

Advisory Services Program Overview

- **Opportunity**:
  - MassCEC-funded fleet electrification planning for up to 25 public school districts across the state, at no cost to the school.
- **Goal**:
  - Provide school districts with a clear path to school bus electrification
- **Objectives**:
  - Reduce barriers to electrifying school bus fleets
  - Provide public school districts and third-party school bus fleet operators with technical assistance and a comprehensive fleet analysis outlining suitability for electrification
  - Aid fleets in pursuing federal and state funding opportunities to electrify their fleet
- **Team**:
  - Selected districts will work with MassCEC's lead consultant (VEIC) and partners (PowerOptions and Energetics) to compile the necessary information and data to conduct a fleet analysis.

Advisory Services Program Overview (continued)

- MassCEC is offering this free program to **up to 25 public school bus fleets** in Massachusetts.
- Fleets will be considered for enrollment on a **rolling basis**.
- Eligible participants include Massachusetts **public school districts and third-party fleet operators** which serve Massachusetts public school districts.
- The Program will prioritize fleets based upon the following criteria:
  - Designation as an **EPA Prioritized School District**[1]
  - Proximity to **Environmental Justice (EJ)**[2] neighborhoods
  - Designation as a **Gateway City**[3], and
  - Establishing a pool of participants which is **representative of the state.**

1 – https://www.epa.gov/system/files/documents/2023-04/fy23-csb-prioritization-list-2023-04.pdf
2 – https://www.mass.gov/info-details/environmental-justice-populations-in-Massachusetts
3 – https://www.mass.gov/doc/gatewaycitiesdocx/download

Meet the Team

BRIAN PICARIELLO

Senior Consultant

VEIC

KATE CAHALANE

Project Manager

VEIC

ALEX PINE

Consultant

VEIC

BEN LAKE

Senior Consultant

VEIC

HOWARD HARRIS

Senior Consultant

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HEATHER TAKLE

President & CEO

PowerOptions

ANNA BRACKENHOFER

Energy Program Analyst

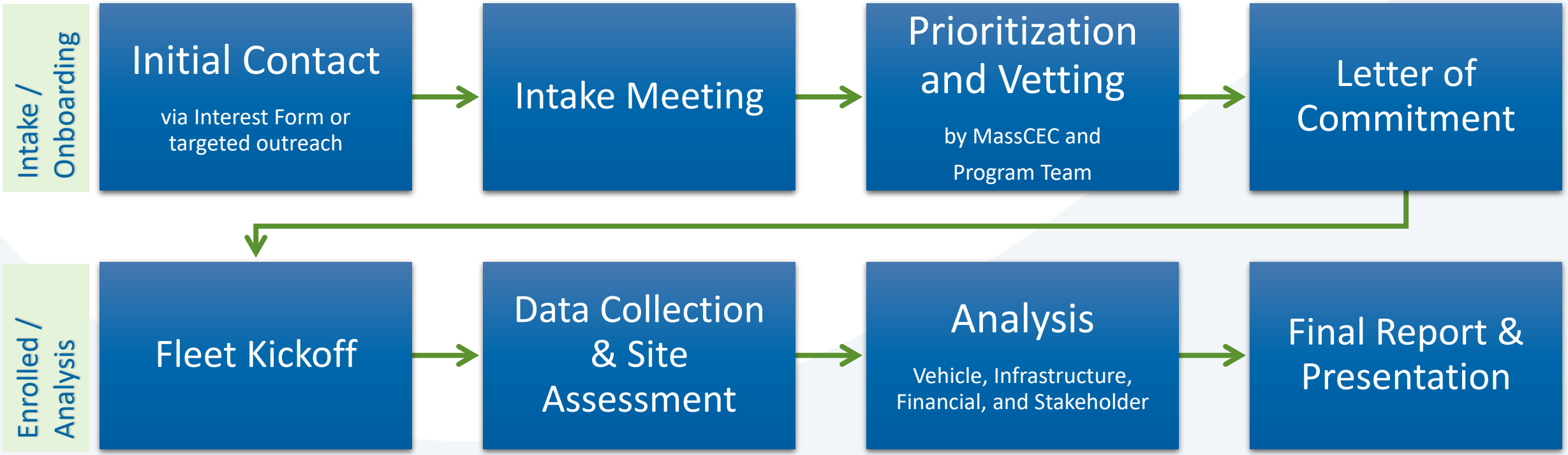
PowerOptions

EWAN PRITCHARD

Principal Consultant

Energetics

What to Expect

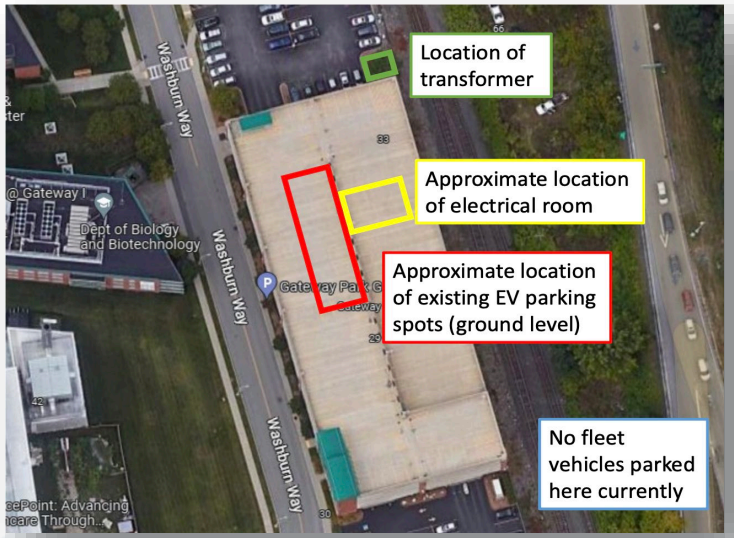


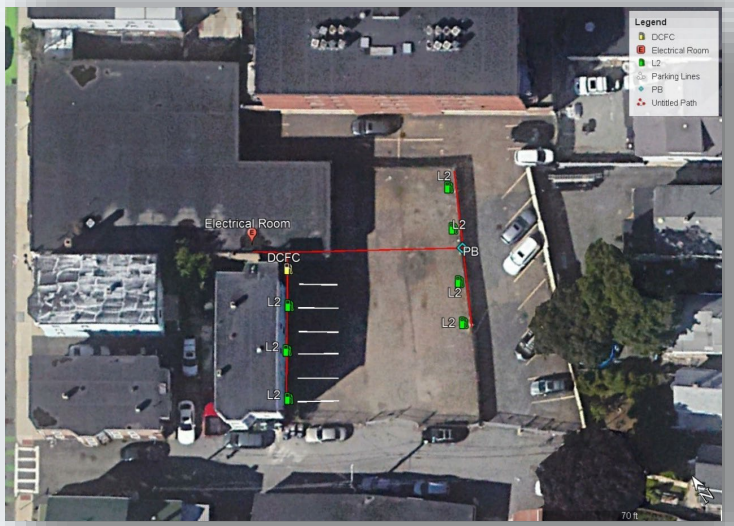
Data Collection

- The program team will work with each selected district (and third-party operator, if applicable) to gather existing fleet data
- Timeframe
  - Data collection will begin during the Intake Meeting, but most of the Data Collection work will take place after the Fleet Kickoff
- Approach
  - **Data Collection Template** – Excel workbook that the fleet will complete and submit
  - **Meetings, Interview and Conversations** – organized and led by the program team to gather and confirm key info
  - **Site Assessment** – details on next slide
- Data Categories include Vehicle, Travel, Utility, Incentive, Financial, and Stakeholder

Site Assessment

- The program team will conduct on-site assessments to evaluate locations for installing charging infrastructure for electric school buses.
- These assessments include analyzing factors such as
  - land ownership,
  - electrical service availability and capacity,
  - space constraints, and
  - parking limitations.
- The assessment also considers facility layout, communications network connectivity, and permitting requirements.
- Site assessments inform the analysis to ensure that locations are suitable for electric buses and contribute to a successful transition to zero-emission transportation.





Analysis

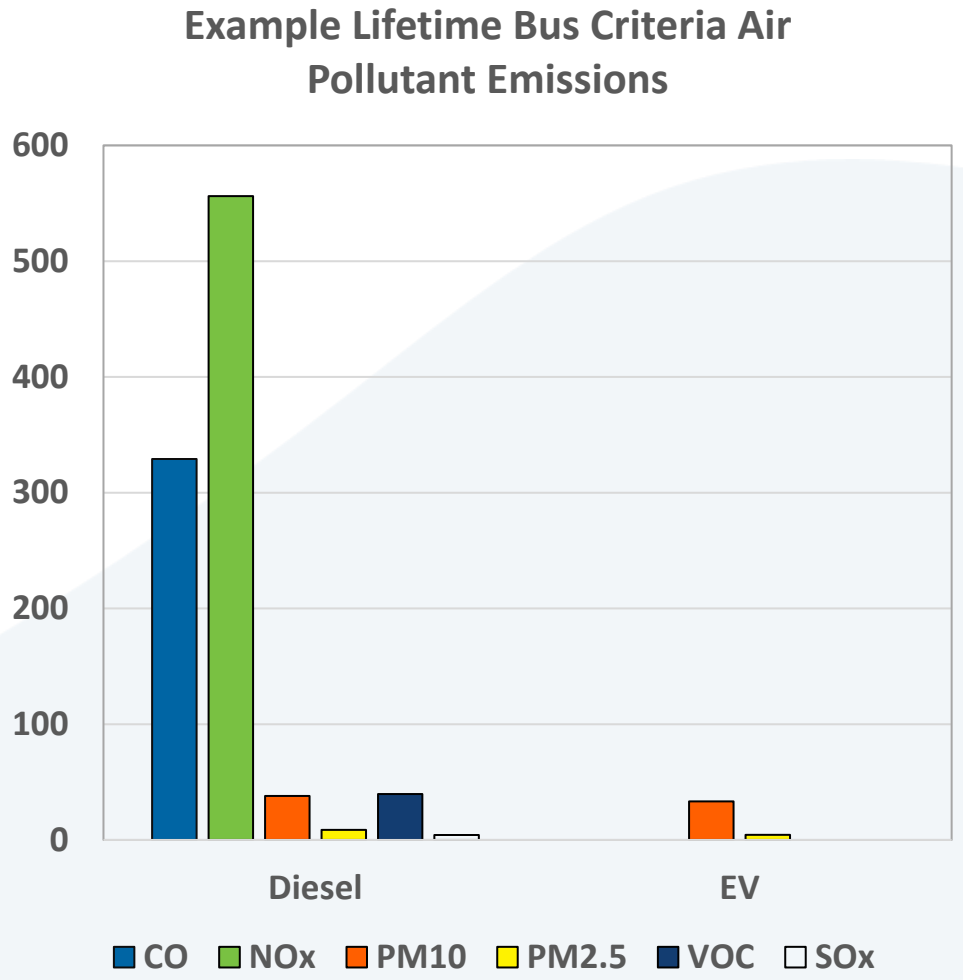
- Vehicle Fleet
  - Assess current fleet, routes, extracurricular trips and operations to determine preferred electric models to meet each Fleet's operational needs
  - Develop fleet-wide ESB replacement and integration plan, including costs and funding opportunities
  - Account for cold-weather performance, battery degradation, other factors

- Charging Infrastructure Need and Charging Optimization Strategy
  - Identify recommended charging infrastructure, necessary facility upgrades, costs and funding opportunities
  - Near-term customer costs and projections for purchasing and installing Level 2 and/or DC fast chargers
  - Charging optimization strategy including electricity demand management
  - Benefits and challenges of V2B and V2G charging

Analysis (continued)

- Financial – Total Cost of Ownership
  - Upfront and operational vehicle, charger, and charging infrastructure costs;
  - Estimated fuel cost savings;
  - Market projections and insights;
  - Impact of available incentives;
  - Analysis of electric bill impacts; and
  - Projections of per-vehicle and full fleet electrification costs and estimated residual values.
  - Procurement Plan and ownership models

- Emissions
  - Amount and timing of emissions reductions from electrifying each Fleet



Final Plan and Presentation

- Each selected fleet will receive a **School Bus Fleet Electrification Plan**, which includes:
  - Estimated total cost and emissions benefits of ESB adoption;
  - Specific charging infrastructure and managed-charging options; and
  - Fleet electrification roadmap with a procurement plan and stakeholder analysis, aligned to milestones for district approvals and funding opportunities.
- Electrification Plan Components
  - Preliminary Needs Assessment
  - Electrification Analysis
  - Financial Analysis
  - Stakeholder Analysis
- Final Fleet Electrification Plan Presentation to each participating Fleet

ESB Funding Opportunities

Federal

- EPA Clean School Bus Program
  - $5B over FY 2022-2026 to replace existing school buses with zero- and low-emission models
  - Up to $395k/bus & infrastructure for priority districts; up to $250k for other districts
  - Round 2 currently open until August 22, 2023
- IRA Tax Credits & Clean Heavy Duty Vehicle Program
  - $40k tax credits for clean vehicles > 14,000lbs
  - Additional tax credits for charging infrastructure
  - $1B for M/HD vehicles, charging infrastructure, and training
- DERA Program
  - Federal funding opportunity
  - Funds 25-35% of zero emission School Bus depending on engine certification
  - Re-opening: Fall 2023

State

- MOR-EV
  - Broad EV incentive program funded through DOER
  - "Trucks" component: vouchers and rebates for school buses
  - $7,500 to $65,000 per vehicle depending on weight class
- MassCEC ACT Bus Fleet Deployment
  - $5M over FY 2023-2024 to advance school bus fleet electrification
  - Includes funding for charging infrastructure
  - Re-opening: September 2023
  - Notice of Intent currently open for comments
- Utility Programs (National Grid and Eversource)
  - Make-Ready – 50-100% for L2 & DCFC electrical infrastructure cost
  - EVSE rebates – up to $6k/L2 port and $80k/DCFC for charging equipment
- Mass EVIP
  - DCFC – up to 60% for hardware and installation costs to a maximum of $50,000 per charging station
  - Competitive Program TBD

Next Steps

- If you received an invite, coordinate with your Project Lead to **schedule an Intake Meeting**
- If you did not receive an invite, feel free to **complete a Program Interest Form**

Q&A

Raise your hand
or
Type a question in the chat