Prince George's County, Maryland

Proterra Electric Bus and Charging Infrastructure Project

Presentation – Transportation Planning Board Regional Public Transportation Subcommittee – 7/28/20

Introduction

- The Department of Public Works and Transportation (DPW&T) of Prince George's County oversees the management and operation of fixed route bus service ("TheBus") through its contractor, RATP-Dev.
- RATP-Dev operates up to 28 routes within the county limits utilizing the county provided bus fleet of 95 vehicles
  - *Note: Under COVID service reductions, limited fixed route service since March 23, 2020*
- "TheBus" fleet is currently comprised of **84** – 29' and 35' Gilligs and **11** – 35' ENCs (El Dorados), with all buses being on the heavy duty bus platform; expected useful life of 12 years/500k miles

LoNo Grant

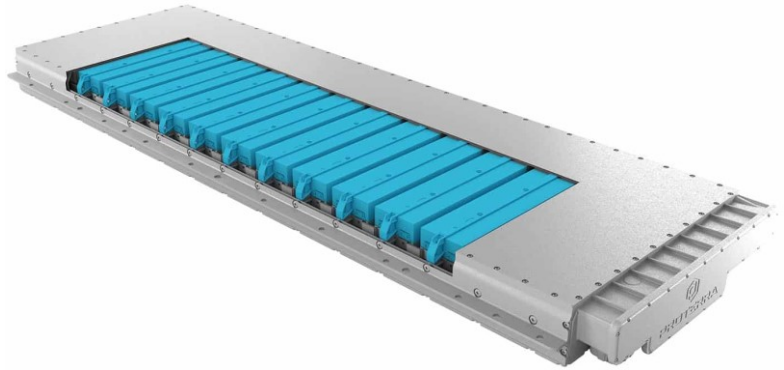
- DPW&T successfully applied for and received a FY19 grant award to purchase four (4) electric buses and associated charging equipment from the Federal Transit Administration.
- The County partnered with Proterra to procure its first ever order of electric transit buses and charging equipment.
- The County will procure four (4) Proterra Catalyst 35 foot transit buses along with four (4) 125 kW charging stations with 3 dispensers each
- One charging unit with 3 dispensers: automatically switch to another bus once one bus reaches a full charge.
- Allows for staggered charging for up to 12 buses

E-Bus Overview and Model Type

- Proterra Catalyst E2 35 foot transit bus
- This model can accommodate 29 seated passengers or 23 seated passengers and two wheelchairs
- Interior seat configuration identical to existing fleet
- Interior cameras
- *Luminator* screens
- Estimated full charge operating range: 150 to 200 miles depending on several factors; geography, climate, operator tendencies, etc.

Battery Lease

- Proterra offered the County two options: lease or purchase batteries
- The County opted to lease batteries because up front cost of the buses are reduced by $198,000
- The lease for the batteries is paid for in annual increments over the 12 year life of the bus
- Proterra replaces the batteries under the lease agreement after six years of being in service



Benefits of electric over diesel

- Less emissions; Proterra estimates CO2 emissions are reduced by 229,167 pounds annually when a diesel bus is replaced with an electric bus
- Less maintenance; No oil or fluid changes, diesel exhaust system component failures, etc.
- Proterra estimates potential customer operational savings of up to $400,000 per vehicle over the lifespan of the bus
- Less noise and cleaner communities

Charging Equipment Overview

- Proterra 125 kW Charging System with 3 charging dispensers each
- A Proterra Catalyst E2 bus can charge in approximately 3 hours using the 125kW system
- With 3 buses utilizing the 3 dispensers on one charging unit, the buses are charged in sequential order

Project Implementation

- Proterra offers ‘turn key’ project management for charging system infrastructure installation
- Multi agency project- DPW&T, DPIE, Office of Central Services, PEPCO, Proterra
- Received proposal from Proterra for ‘turn key’ project management proposal in April 2020
- The County’s Office of Central Services hired a third party contractor to assist with electrical engineering consulting, peer review, and permit acquisition
- Charging infrastructure to be installed at our bus operations and maintenance facility located at 8401 D’Arcy Road Forestville MD 20747

Route Deployment

- DPW&T will determine initial deployment in the service area based upon route distance, topography, and ridership levels.
  - Neighborhood routes
  - Alternating schedule deployment (e.g., AM, Mid Day or PM peak trips only)

Performance Criteria

- Average range between charges
- Mileage between repairs

Timeline of project

October 2019

- Internal Meetings with Proterra staff (e.g., specifications, route testing, contract discussions, project management responsibilities, etc)

March 2020

- Bus configuration (options and specifications) completed
- On site meeting with Proterra's infrastructure team

April 2020

- 'Turn key' charging infrastructure proposal received from Proterra

Fall 2020

- Goal: PEPCO and Proterra will begin construction of the charging equipment and infrastructure

Spring 2021

- Expected delivery of our four Proterra Catalyst E2 buses in Spring 2021

Questions?