Electric Buses in Rural and Urban Environments

MBTA – Strategic Roadmap for Electric Transit Buses

September 28, 2017
Overview

- History of the MBTA Electric Buses
- Sliver Line – Zero Emissions Bus Project
- Integrated Fleet & Facilities Plan
- 40 Ft Electric Bus Feasibility Study


MBTA History of Electric Buses

40 ft Neoplan AN440LF Low Floor Electric Trolley bus

- Entered into service 2004
- Skoda electric propulsion system
- 210KW (282HP) AC traction motor with Dynamic/Regenerative braking
- Powered by overhead 600VDC catenary line
60 ft Neoplan Dual Mode Articulated (DMA) Bus

- Entered Service 2004
- Skoda Electric Drive Propulsion
- Detroit Diesel Series 60 500hp Engine
- 746kW Kaman Generator (off wire)
- 2-161hp Traction Motors Powering Center and Rear Axle
Silver Line – Zero Emission Bus Project

- February 2015 – FTA Awarded the MBTA - Zero Emissions Silver line Project
- Low or No Emission (LoNo) Vehicle Deployment Program
- FTA Objectives:
  - Deploy the cleanest and most energy Efficient U.S. manufactured transit buses that are not yet widely deployed in transit fleets.
  - Focus on nonattainment areas for ozone and carbon monoxide
- Partnered with Center for Transportation and Environment (CTE), Transworld Associates LLC, University of Texas Center for Electro Mechanics (UT-CEM) and New Flyer.
- 60ft Battery Electric Bus
- Buses Enter Production Early 2018
- Buses Expected to be delivered Mid 2018
New Flyer Xcelsior XE60 – Battery Electric Bus

- Altoona Tested
- Siemens 160 kW PEM Drive Motor (rear)
- ZF - AVE130 Electric Wheel Motors
- 450 kWh Energy Storage System (ESS)
- Depot Charging
MBTA Fleet & Facilities Plan

- **Integrated Fleet and Facilities Plan**
  covering 1, 5, 10, and 15 year time
  - All Service lines & Modes
- MBTA Strategic Plan & Focus40
- State of Good Repair (SGR)
- Pioneering Effort – First in Transit Industry
- Foundational Goals and Objectives
  - Fleet Management Strategy
  - Facility Management Strategy
  - Innovative Maintenance Practices
  - Environmental Stewardship
- Emphasis on Bus & Facilities