**Airport Shuttle Electrification**

*Replace diesel and gas shuttle buses with electric shuttles at regional airports like Charlotte-Douglas International Airport. Electric shuttles will have zero tailpipe emissions.*

**Path Forward Priority:** Now (2019-2022)

**Status:** Partially Complete

**Accomplishments to Date**

- 2019: Charlotte-Douglas International Airport (CLT) staff have committed to converting their transit bus fleet of 70 diesel-hybrid buses to 50 fully electric models within the next 8 years using their current budgeting.
- 2019: Concord Regional Airport staff are interested in purchasing electric transit buses.
- 2020: CLT placed 5 Proterra fully-electric buses into service (picture below).
- 2021: CLT placed 5 New Flyer fully-electric buses into service.

**Next Steps:**

- Continue to seek grant funding to accelerate adoption of election transit buses at CLT and Concord Regional Airport. Assist with applications as necessary.
- Continue discussions with CLT and Concord Regional Airport staff to determine timelines and additional funding sources for incorporation of electric transit buses into their fleets.
• Push for investments in electrification projects at CLT, which is surrounded by communities with environmental justice concerns.
• Identify and secure funding to defray the cost of new electric shuttles and charging infrastructure.
• Work with local airports to create a shuttle replacement schedule that prioritizes the highest emission shuttle(s) for replacement first.

Stakeholders: CLT Airport, Charlotte City Council, Concord Regional Airport, N.C. Division of Air Quality

Funding Opportunity: VW Settlement Funds, EPA-DERA Funding, Duke Energy partnership

Staff Contact: PJ McKenzie, Paul.McKenzie@MeckNC.gov, 980-314-3374
Airport Shuttle Electrification

Replace diesel and gas shuttle buses with electric shuttles at regional airports like Charlotte-Douglas International Airport. Electric shuttles will have zero tailpipe emissions.

Path Forward Priority: Now (2019-2021)

Status: Partially Complete

Accomplishments to Date

- 2019: Charlotte-Douglas International Airport (CLT) staff have committed to converting their transit bus fleet of 70 diesel-hybrid buses to 50 fully electric models within the next 8 years using their current budgeting.
- 2019: Concord Regional Airport staff are interested in purchasing electric transit buses.
- 2020: CLT has placed 5 Buses placed into service (picture below, with another 5 planned for 2021.

Next Steps:

- Continue to seek out VW Settlement Funds from the NC Department of Environmental Quality (NCDEQ) in order to accelerate adoption of election transit buses at CLT and Concord Regional Airport.
- Seek out other grant funding options and assist with applications as necessary.
• Continue discussions with CLT and Concord Regional Airport staff to determine timelines and additional funding sources for incorporation of electric transit buses into their fleets.
• Identify and secure funding to defray the cost of new electric shuttles and charging infrastructure.
• Evaluate racial equity impacts of strategy.
• Work with local airports to create a shuttle replacement schedule that prioritizes the highest emission shuttle(s) for replacement first.

Stakeholders: CLT Airport, Charlotte City Council, Concord Regional Airport, N.C. Division of Air Quality

Funding Opportunity: VW Settlement Funds, EPA-DERA Funding

Staff Contact: PJ McKenzie, Paul.McKenzie@MeckNC.gov, 980-314-3374
Implementation Plan

Airport Shuttle Electrification

Existing Efforts:

- Charlotte-Douglas International Airport (CLT) staff have committed to converting their transit bus fleet of 70 buses to fully electric models within the next 8 years using their current budgeting.
  - City Council has approved and budgeted for the purchase of five electric shuttle buses plus charging infrastructure in FY20.
- Concord Regional Airport staff are interested in purchasing electric transit buses.

Stakeholders: CLT Airport, Concord Regional Airport, N.C. Division of Air Quality

Funding Opportunity: VW Settlement Funds

Next Steps:

- Assist CLT with applying for VW funding to accelerate the acquisition of electric buses.
- Assist Concord Regional Airport staff with applying for VW funding to pilot electric buses.
- Research other grant funding options and assist with applications as necessary.

Staff Contact: PJ McKenzie, Paul.McKenzie@MeckNC.gov, 980-314-3374
The Idea: Airport Shuttle Electrification

- Replace diesel and gas shuttle buses with electric shuttles at regional airports like Charlotte-Douglas International Airport.
- Electric shuttles will have zero tailpipe emissions.

The Action:

- Identify and secure funding to defray the cost of new electric shuttles and charging infrastructure.
- Work with local airports to create a shuttle replacement schedule that prioritizes the highest emission shuttle(s) for replacement first.

The Pollution Source: 0.1% of NOx comes from transit buses (which includes airport shuttles)\(^1\)

The Cost-effectiveness: $418.06/lb of NOx\(^2\)

The Factors:

- Airport shuttles have high usage, which means that each shuttle has high emissions.
- There aren’t very many airport shuttles in the region, so large-scale emission reductions aren’t likely.
- Public-facing project that could spread awareness/information to the city and its visitors.
- Emissions generated from charging the vehicles will decrease as renewable energy is adopted into the power grid.
- Particulate Matter – Low co-benefit
- Greenhouse Gas – Medium co-benefit

---

\(^1\) 0.11 tons/day of NOx. Source: Revised Maintenance Plan For The Charlotte-Gastonia-Salisbury, North Carolina 2008 8-Hour Ozone Marginal Nonattainment Area (July 2018)

\(^2\) Assuming $700,000 per bus