**Sustainable Flight Line Operations**

**Goal Statement**
The goal of this project was to reduce greenhouse gas (GHG) emissions from the ground support equipment (GSE) in the 737 Max Flight Line.

**Methodology**

**Alternatives Researched**
- Gas
- Electric
- Hydrogen

**Considerations**
- Safety
- Technology maturity
- Emission
- Cost

**Data Validation**

**Cost estimate**
- 3 million USD
- Prior to incentives from public agencies
- Annual Payback $383149
- Payback Period 10.5 yrs

**Infrastructure Mapping**

**Emissions Reduction**
- Anually emission reduction
  - CO: 168.2
  - Nox: 80.4
  - PM10: 205.1
  - PM2.5: 11.6
  - VOC: 2380.3
  - Sox: 325.9

**Simio Vehicle Charging Simulation**
With the simulation, we tested parameters such as:
- Number of chargers needed
- Charger utilization
- Electricity cost

**Future Work**
Due to time and resource constraints, there are items that we were unable to address but we consider key for future project success:
- Test the readiness of the flightline’s electric infrastructure to support the chargers. If found lacking, upgrades need to be identified
- Collect emissions data from the 737 Max Flight Line for comparison.
- Further investigation regarding relevant regulations and standards applicable

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