# AFLEET Tool

AFLEET is a free tool from the U.S. Department of Energy (DOE) that fleet managers can use to quantify the environmental and economic impacts of new fuels and vehicle technologies. This tool is used to show Total Cost of Ownership (TCO) over the life of the vehicle. In the tool, you can compare “all” alternative fuels: CNG, Propane, Diesel, Electric and Gas. Contact FCCC EMG team for analysis of MT50e.

Driven By You

| Primary Vehicle Location | |
|---|---|
| State | SOUTH CAROLINA |
| County | GREENVILLE |
| # of Vehicles | 1 |
| ownership | 8 |
| Annual Mileage | 80,000 |

Enter desired pricing below

| | Diesel | Gasoline | EV |
|---|---|---|---|
| Customer Pricing to Compare: | $85,000 | $78,000 | $225,000 |
| Incentive Amount if Applicable: | | | $0 |

Update $/x to match local data

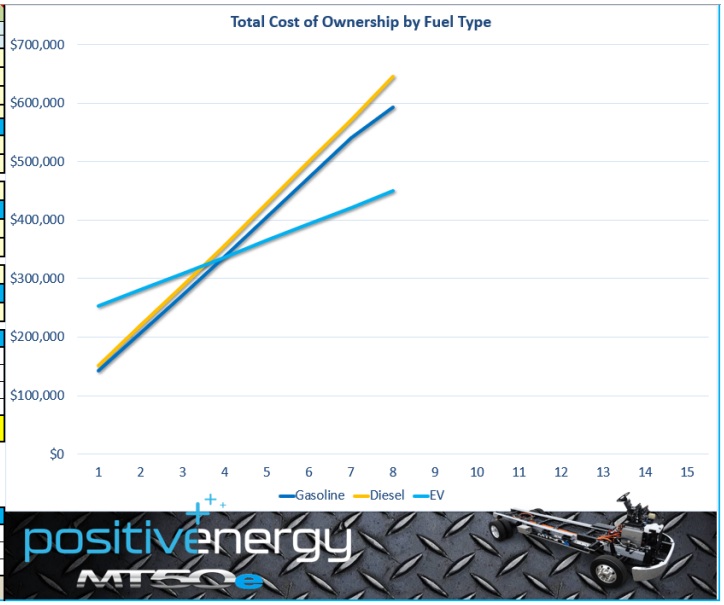
| | Diesel | Gasoline | EV |
|---|---|---|---|
| Fuel (Diesel = $/gallon; EV = $/kWh) | $3.88 | $3.00 | $0.12 |
| Fuel Economy (MPDGE) | 7.4 | 6.2 | 25.4 |

Update $/mile to match internal fleet data

| | Diesel | Gasoline | EV |
|---|---|---|---|
| Maintenance & Repair ($/mile) | $0.22 | $0.24 | $0.17 |

| TCO Categories | Diesel | Gasoline | EV |
|---|---|---|---|
| Purchase Price | $85,000 | $78,000 | $225,000 |
| Fuel | $419,971 | $386,218 | $121,005 |
| Diesel Exhaust Fluid | $5,714 | $0 | $0 |
| Maintenance and Repair | $140,800 | $153,600 | $106,098 |
| **Total Cost of Ownership (TCO)** | **$651,484** | **$617,818** | **$452,103** |
| **Cost Differential - Diesel vs. Electric** | **-$199,382** | **-$165,716** | |

| Externalities | Diesel | Gasoline | EV |
|---|---|---|---|
| Petroleum Use | $39,156 | $44,948 | $273 |
| GHGs | $52,226 | $61,717 | $23,487 |
| Air Pollutants | $21,895 | $9,828 | $2,232 |
| **Externalities $ Totals** | **$113,277** | **$116,493** | **$25,992** |



# Route & Charge Time Analysis

The Route Analysis is a tool that can easily help schools determine which bus routes and chargers needed to complete daily runs economically and efficiently.

### Vehicle Inputs

| | |
|---|---|
| BATTERY STORAGE CAPACITY (KWH): | 226 |
| USABLE BATTERY %: | 88.9% |
| MINIMUM SOC %: | 0% |
| VEHICLE EFFICIENCY (KWH/MI): | 2.1373 |

### Charger Inputs

| | |
|---|---|
| CHARGER RATE (KW): | 60 |
| AVG. ELECTRICTY COST: | $0.19 |

### Vehicle Outputs

| | |
|---|---|
| USABLE BATTERY ENERGY (KWH): | 200.91 |
| TIME TO CHARGE 10-90% (HRS): | 2.68 |

### Route Analysis

| | |
|---|---|
| ROUTE LENGTH (MI): | 45 |
| ENERGY CONSUMPTION (KWH): | 96.1785 |
| ESTIMATED CHARGING COSTS: | $18.27 |

### Route Charging Requirements

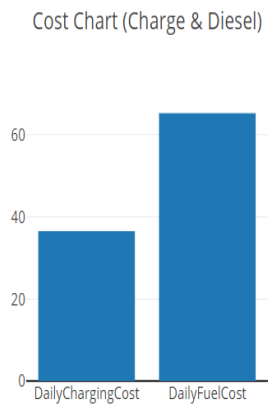
| | |
|---|---|
| BATTERY ENERGY AVAILABLE FOR AFTERNOON ROUTE (KWH): | 104.73 |
| MID-DAY CHARGE NEEDED?: | No |

### Mid-Day Charging Requirements

| | |
|---|---|
| ADDITIONAL ENERGY REQUIRED TO COVER AFTERNOON ROUTE (KWH): | - |
| MID-DAY CHARGE TIME REQUIRED (HRS): | - |

### Diesel Fuel Cost Comparison

| | |
|---|---|
| DIESEL BUS MPG: | 7 |
| DIESEL FUEL PRICE ($/GALLON): | $5.08 |
| DAILY FUEL COST: | $65.31 |
| # OF BUSES TO FACTOR FUEL SAVINGS FOR: | 1 |
| DAILY FUEL SAVINGS: | $28.77 |
| ANNUAL FUEL SAVINGS: | $5177.96 |




### End of Routes SOC Analysis

| | |
|---|---|
| ENERGY REMAINING AFTER MORNING ROUTE (KWH): | 104.74 |
| MORNING ROUTE ENDING SOC %: | 52% |
| ENERGY REMAINING AFTER AFTERNOON ROUTE (KWH): | 8.56 |
| AFTERNOON ROUTE ENDING SOC %: | 4% |

### Morning & Afternoon Route Totals

| | |
|---|---|
| TOTAL DAILY CHARGE TIME REQUIRED TO COVER ALL ROUTES (HRS): | 4.01 |
| DAILY ROUTES DISTANCE (MI): | 90 |
| TOTAL ENERGY CONSUMED ON DAILY ROUTES (KWH): | 192.36 |
| DAILY CHARGING COSTS: | $36.55 |
| AMBIENT TEMPERATURE: | Below 20°F |
| FACTOR(#): | 1.45 |

Reset Export PDF

For more information about the TCO and Route Analysis, please contact SVEMG Team Member:

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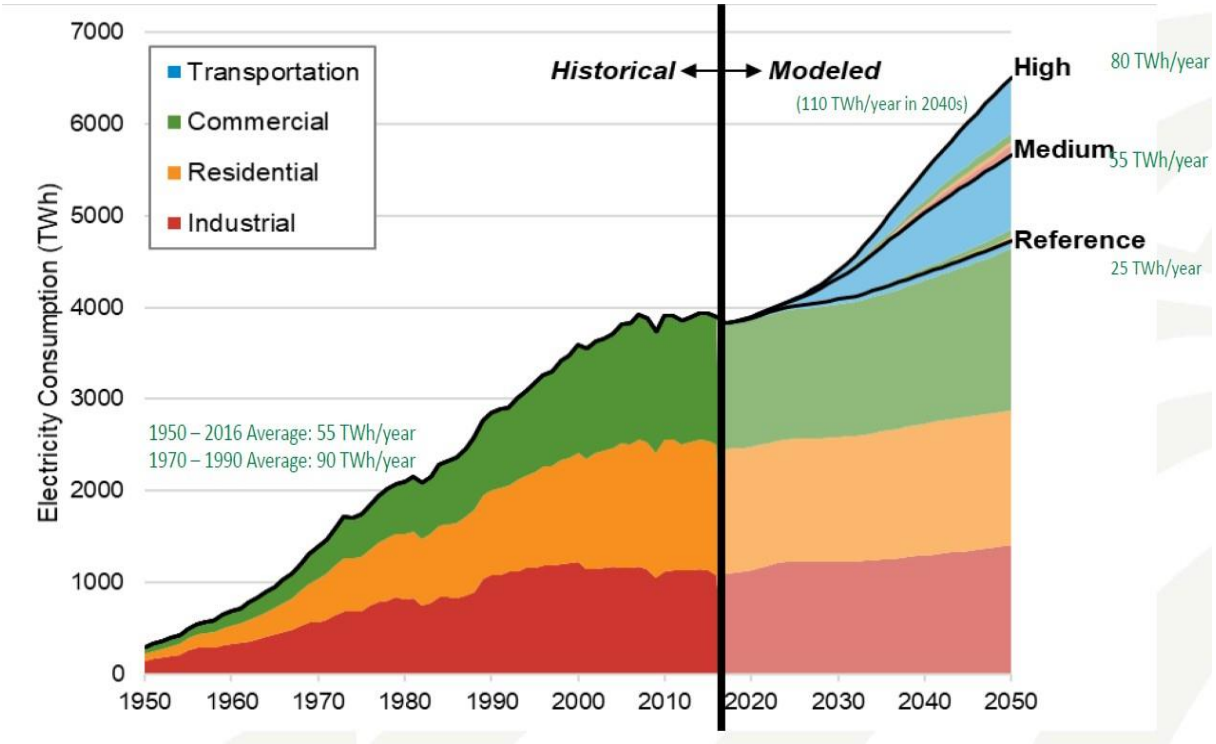
**LINK TO THE TCO & Route Analysis TOOL:**

Home Page - My ASP.NET Application (thomasbusonline.com)

# National Renewable Energy Labs (NREL)



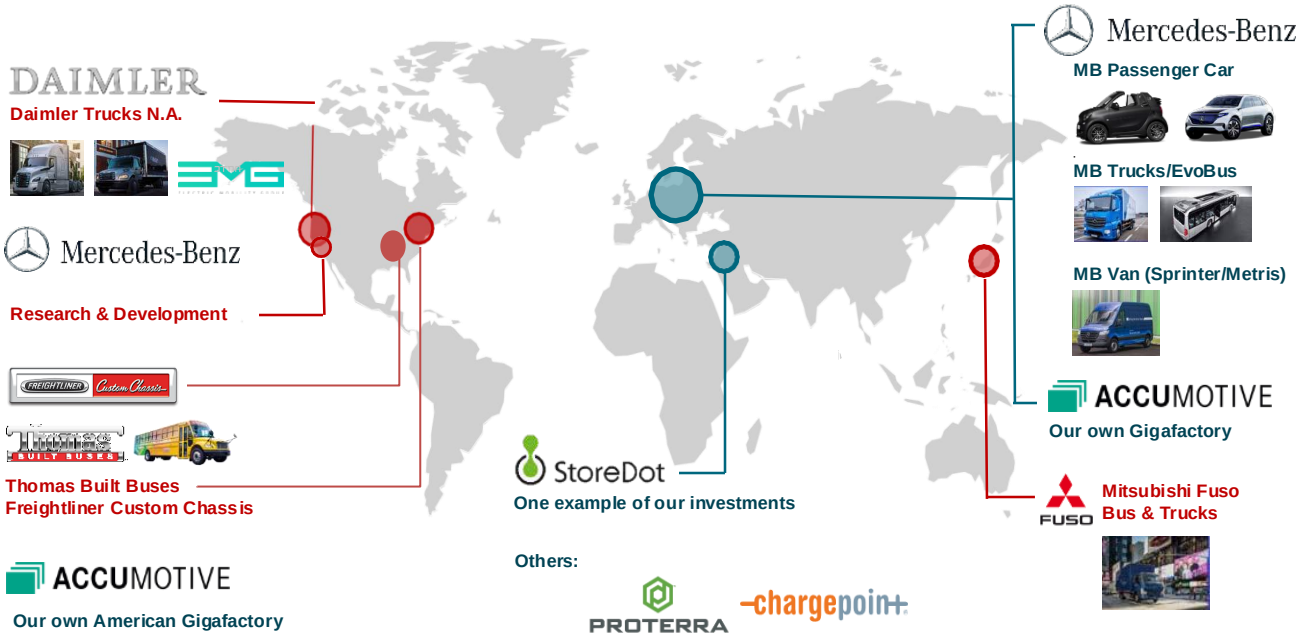

**LINK TO NATIONAL RENEWABLE ENERGY LAB:**

https://www.nrel.gov/

(This site has a tremendous amount of valuable data and information)

- NREL predicts electric growth is in transportation segments. Light, medium and heavy duty vehicles.
- Energy consumption beyond 2020 is moderate in traditional markets
- Adding transportation to future growth of electric consumptions significantly adds growth.
- BEV transformation is on the horizon and in our future.

# Global eMobility Investments in all Segments and Around the Globe




- DTNA has global investments in BEV technology.
- 2018 DTNA invested in Proterra which launched our partnership.
- DTNA's global investment in BEV allows Thomas the ability to leverage technology from around the world.
- Our customers will benefit from this global reach by Daimler in the electric market.