DC's Mobile Food Vendor Electrification Pilot Project

Regional Electric Vehicle Deployment (REVD) Working Group

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GOVERNMENT OF THE DISTRICT OF COLUMBIA
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Agenda

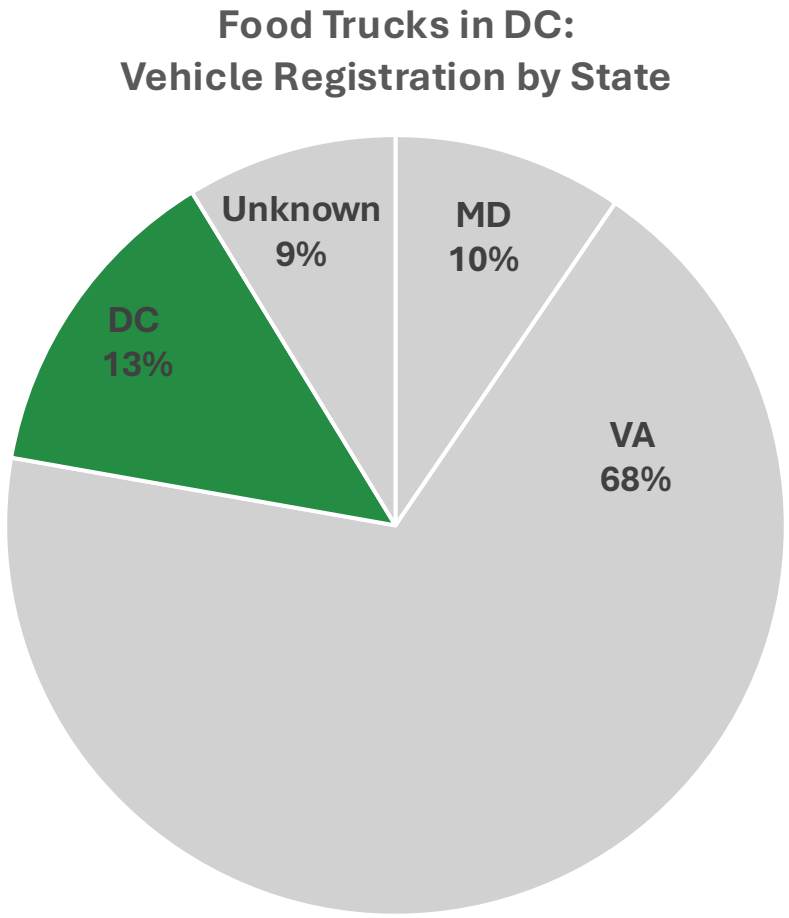
1. Background & Context
2. About the Pilot
3. Initial Research
4. Project Milestones
5. Results
6. Lessons Learned

Background & Context

- DC has **climate**, **air quality**, and **noise reduction** goals.
- Fossil fuel-powered generators create air pollution that pose **health and environmental risks**.
- Electrifying power generation systems in mobile food vending has high upfront costs and is a new technology—**DC wants to better understand how these battery systems do or don't meet the needs of food vendors and the challenges and benefits of battery installations**.

Initial Research

- **Informational interviews**
  - Colorado (Engines Off)
  - Montgomery County, MD (Food Truck Generator Electrification Pilot)
- **Food truck landscape in DC**
  - Procured list of food trucks licensed to operate in DC
    - Of ~130 total licensed businesses, majority of vehicles registered in MD & VA
  - Identified mobile food vending locations- designated Mobile Roadway Vending Locations, Farmers Markets
  - National Mall is federal land- food trucks that operate there are licensed by National Park Service
- **Overnight Parking**: 3 commissaries in DC
- **Status:** Many gradually returning after pandemic



About the Pilot

- **Purpose:** Demonstration project to spark the shift from gas/diesel generators to battery-powered generators
- **Description**: Grantee assists at least 2 mobile food vendors to purchase and install battery generators.
- **Funding Total:** $102,400
  - **DOEE Provided**: $60,000
  - **Grantee Match Provided:** $42,400
- **Project Period**: August 26 – September 30, 2025 (35 days, 25 weekdays)
- **Selected Grantee:** Skala-Joule Case Partnership

Grantee Responsibilities

- Purchase & prepare battery-powered generator systems
- Conduct outreach
- Host equipment demonstration
- Select mobile food vendors
- Install battery-powered generators
- Collect and report data

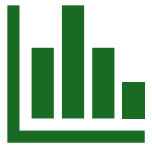
Results

Project Milestones

Outreach & Demonstration

Vendor Selection

Installation



Data & Reporting

Outreach & Demonstration

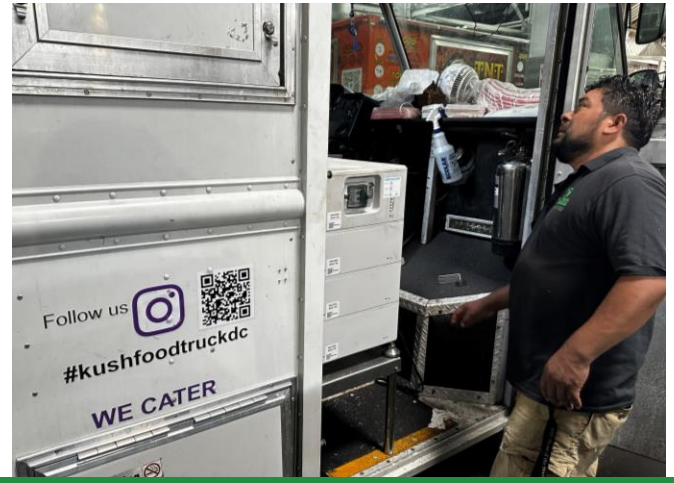
- **Emailed interest form/ application** to DC licensed mobile food vendors and food truck associations (~130 businesses)
- **Hosted 2 equipment demonstrations** at DC commissaries (~20 businesses)
- **Equipment trials** during business hours (~7 businesses)

Vendor Selection

- **Reviewed interest forms/applications** for license, permit, work location, availability on designated equipment trial days, existing generator capacity, and social media presence (~20 businesses)
- **1:1 screening conversations** with interested & eligible vendors to confirm generator size and power needs and understand access to charging (7 businesses)
- **Equipment demonstration-** site visits for shortlisted applicants to trial equipment during business hours and for project team to assess power needs, operating hours, and truck modification feasibility (7 businesses)
- **Assessment & pivot-** initially planned for two 20 kWh installations, but upon review of vendor energy use, project team realized battery power supply exceeded vendor power needs. Skala allocated remaining units to purchase additional inverters (2) and primary batteries (2), expanding pilot from required minimum of 2 to a total of 4 food trucks.

Installation

- **Mobile food vendors signed agreement committing to use battery-powered generator systems** as primary source of energy, replacing current fossil fuel generator(s).
- **Joule Case installed** battery-powered generator systems and removed existing gas- or diesel-powered generator(s).
- **Only a couple hours to install-** most vendors were finished in time for usual shift.



Installation Details

Trucks 1 & 2

- 16 kWh- (4) 4 kWh batteries, 11.4 kW inverter, 120V charger

Truck 3

- 20 kWh- (5) 4 kWh batteries, 11.4 kW inverter, 120V charger

Truck 4

- 10 kWh- (2) 5 kWh batteries, 3.6 kW inverter, 120V charger

Data & Reporting

- **Initial data collected:**
  - Power needs: estimated energy use of each appliance powered (kWh per hour), duration, and frequency of vendor use
  - Final equipment and battery configuration
  - Average fuel costs before and after conversion
  - Operational challenges and limitations
- **Ongoing data collection:**
  - Equipment use, performance, and replacement of fossil fuel use
  - Food trucks required to provide data access and operation reports every 6 months for 2 years

Lessons Learned

- **Outreach & Demonstration**
  - Word of mouth and equipment demonstrations are key
  - Engagement snowballs at locations where food trucks congregate (commissaries, designated vending areas)
  - Opportunity to trial battery generators increases vendors' confidence and comfort to switch
- **Equipment**
  - There is no "standard" truck equipment configuration- flexibility to adapt on the fly is helpful for both demonstration and installation.
- **Operations**
  - Charging at commissaries can present challenges (e.g., existing 120 V electric supply limits charging speeds, commissaries may try to charge a fee for electricity used to charge batteries)
- **Possible Program Evolution**
  - Battery hub model that provides power at designated mobile food vendor locations may be more cost-effective and scalable solution than equipping each food truck with battery generators.

Questions?

Resources

- **DC Pilot Project**
  - Grant Application: https://doee.dc.gov/node/1789381
- **Existing Programs**
  - Colorado- Engines Off: https://www.enginesoff.org/
  - Montgomery County, MD- Food Truck Generator Electrification Pilot: https://www.montgomerycountymd.gov/DEP/energy/zev/food-truck-generator-electrification.html
- **Grantee Partners**
  - Skala Financial Limited: https://skala.ltd/
  - Joule Case: https://www.joulecase.com/

Thank You

Please contact us with any follow-up thoughts or questions:

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