

Update on Biomass Source within Community Boundary

Stockton CSC
Regulatory and Enforcement Subcommittee Meeting
February 20, 2025

DTE Stockton Facility



Biomass facility: Operation burns woody waste in controlled process to generate electricity

What Is DTE Stockton and How Are Emissions Controlled at the Facility?

- **Electrical Generation Capacity:** 54 MW
- **Fuel Used to Generate Energy (Primary Fuel):** Biomass
- **Fuel Used to Start Process (Startup Fuel):** Natural Gas

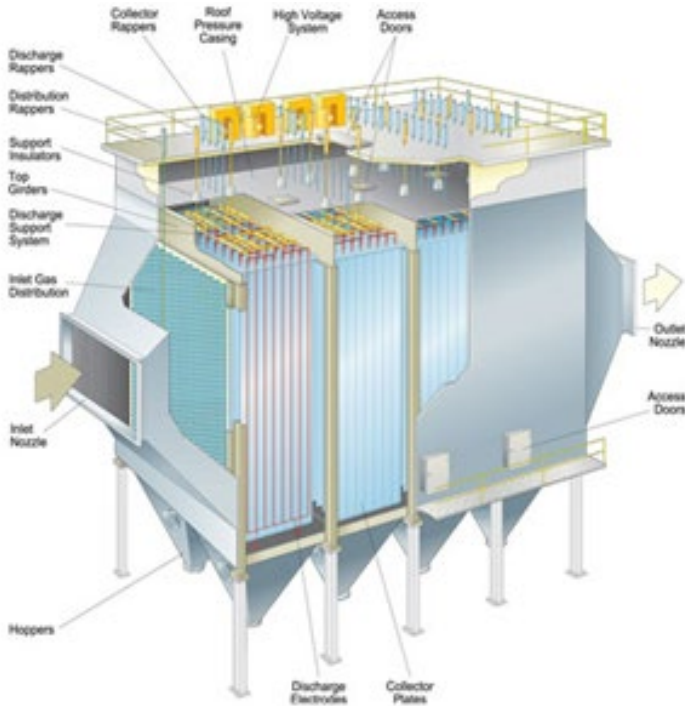
- **Emission Control Technologies Used at DTE Stockton**
 - **NO_x:** Selective Catalytic Reduction (SCR)
 - **Particulate Matter:** Electrostatic Precipitator (ESP)
 - **SO_x and Acid Gas:** Trona (sorbent) Injection
 - **H₂S and Acid Gas:** Wet Scrubber

What Does the DTE Stockton District Permit Require?

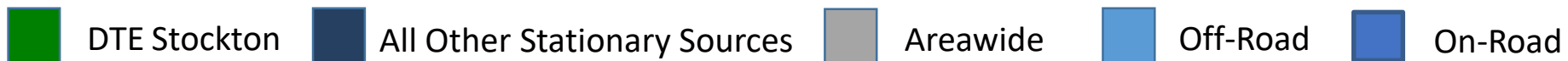
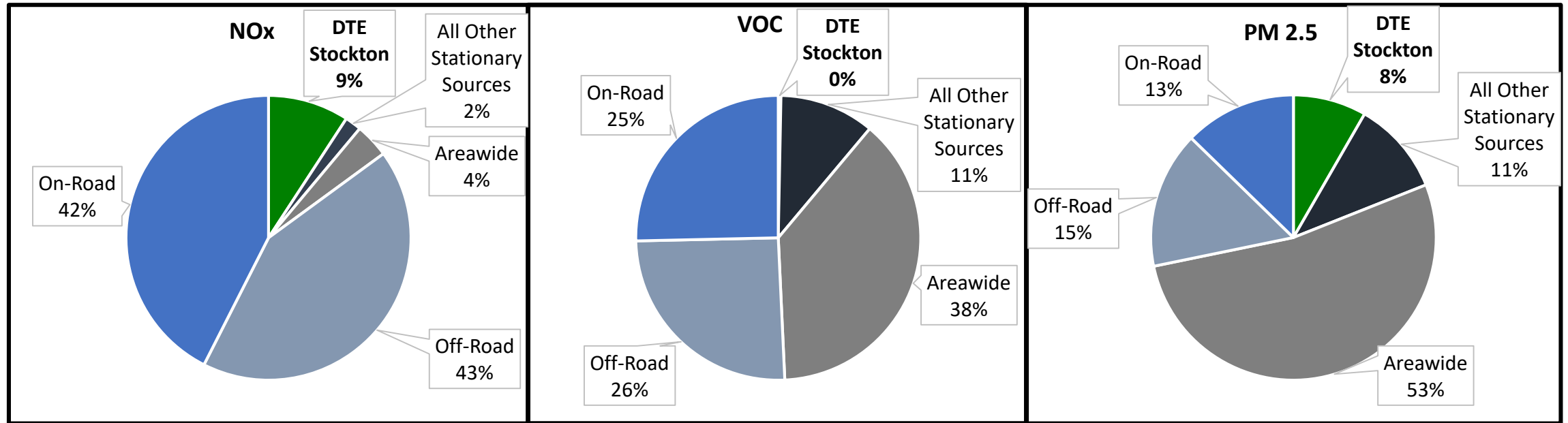
- **Must comply with over 20 District and Federal regulations, including Rule 4352 for solid fuel-fired boilers**
 - Impose Strict Emissions Limits
 - Impose Emissions Testing, Monitoring, and Recordkeeping requirements
- **Permit Restrictions**
 - Can only process biomass, clean wood residue
 - Emission Limits for NO_x, CO, VOC, PM, SO_x, HCl, and NH₃

How Are Emissions Monitored at DTE Stockton?

- **CEMS: Continuous Emissions Monitoring System** for NO_x, CO & SO_x
 - CEMS for SO_x ensures adequate sorbent injection
- **COMS: Continuous Opacity Monitoring System** for visible emissions monitoring and to ensure Electrostatic Precipitator (ESP) is operating properly
- ESP power monitoring to ensure optimal PM control efficiency
- Wet scrubber: Continuous monitoring and recording of scrubber liquid pH and flow rate ensures optimal control efficiency



What are the DTE Stockton Emissions Compared to Other Sources in the Community?



What Are the Main NOx and Direct PM2.5 Emissions Sources in the Community?

Top NOx Emissions Sources	NOx (tons per year)
On-Road Mobile (HD Trucks)	196
On-Road Mobile (Light-Duty Vehicles)	166
Off-Road Mobile (Trains)	148
Off-Road Mobile (Equipment)	140
Areawide (Manufacturing Fuel Combustion)	121
Off-Road Mobile (Ocean Going Vessels)	113
Biomass Power Plant	103

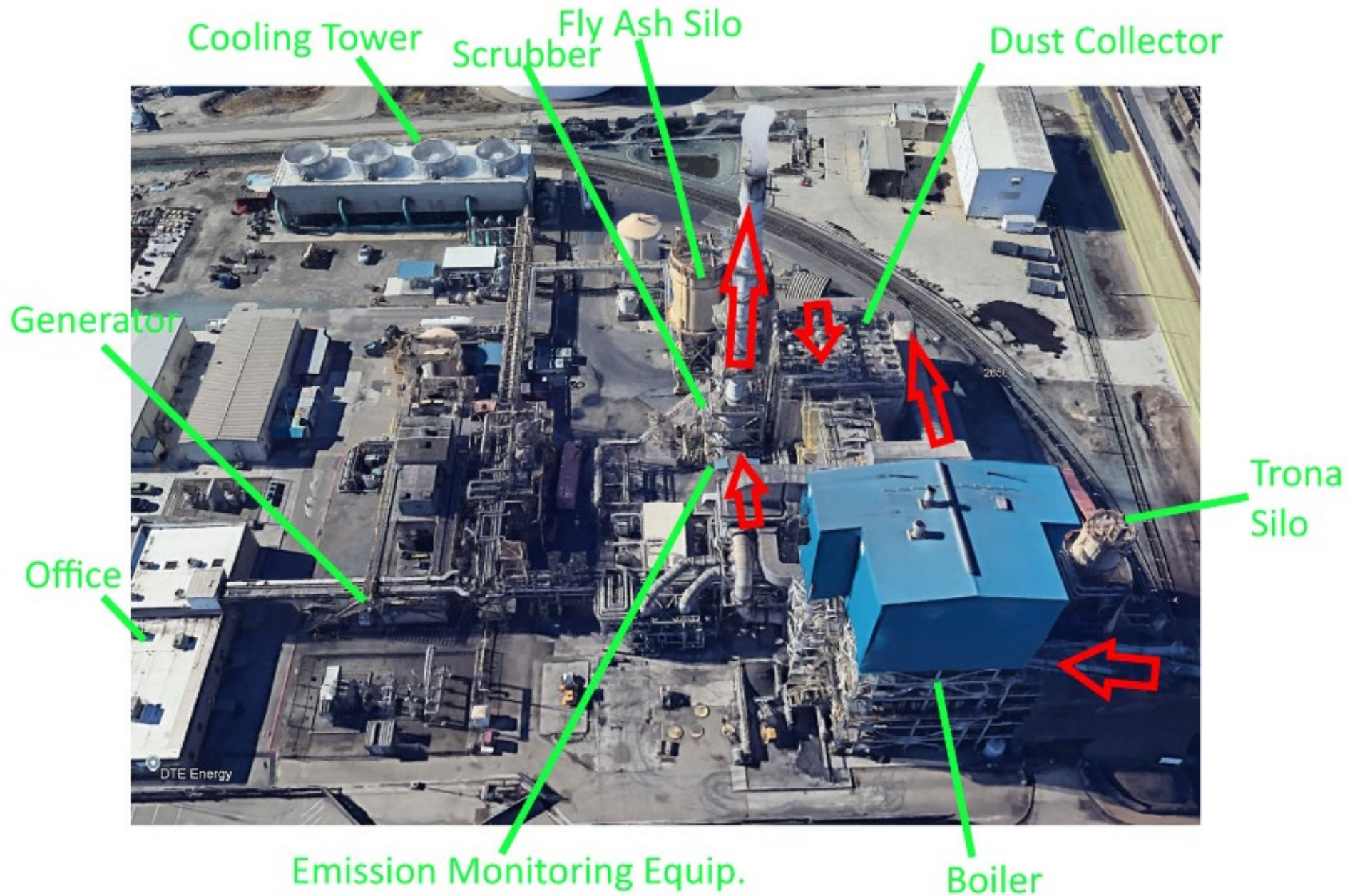
Top PM2.5 Emissions Sources	PM2.5 (tons per year)
Cooking	38
On-Road Mobile (HD Trucks, Light-Duty Vehicles)	22
Off-Road Mobile (Trains, Ocean Going Vessels)	18
Paved Road Dust	14
Residential Fuel Combustion	13
Biomass Power Plant	12

Compliance Inspection Schedule

- Per CERP Measure SS.1, the facility is currently subject to enhanced inspection frequency due to having an emissions violation within the 3 years prior to the adoption of the CERP
- Inspections have occurred every 6 months since CERP adoption, with the most recent violations recorded as:
 - 5/11/23, Failed ammonia slip emissions during the 2023 annual source test (retest passed 6/7/23)
 - 5/16/24, Failed to conduct annual source testing within 30 days of 4/16/24 (conducted 5/30/24)

What is the Compliance Inspection Process?

1. Inspector investigates facility, physically observing equipment and processes, ensuring compliance with District issued Permit to Operate conditions
2. Staff inspect the exhaust stack's Continuous Emissions Monitoring System (CEMS) to ensure it is being maintained and operated properly
3. Inspector reviews facility records
4. District observes third party source tests



What is the Required Compliance Reporting?

- The facility is required to submit various reports to fulfill District and Federal Environmental Protection Agency requirements
 - Reports are submitted on a routine basis (i.e. annually, bi-annually, quarterly)
 - Inspectors review reports for correctness, completeness (when non-compliance is documented, appropriate enforcement action are taken)
- The facility must self-report any deviations from federally enforceable permit conditions to the District as soon as possible but no later than 10 days after discovery
 - Facility must submit a report describing the event, duration, when discovered, when compliance achieved, probable cause, and measures taken to correct and prevent occurrences

What Testing is Performed at DTE Stockton to Ensure Compliance?

- The Biomass-fired boiler is tested annually to ensure compliance with permit limits of PM 10, NO_x, CO, VOCs, SO_x, and NH₃
- Tests are performed by CARB-certified third-party contractors according to approved methods
- District has trained staff observe third party source tests and to review test results

Most recent source test was conducted on **May 30, 2024**
Results were reviewed by District staff and found to demonstrate **compliance with permit limits**

Questions?