# Title V Renewal and Modification to Adopt Lower NOx limits for Hudson Falls, NY Waste-to-Energy Facility

## Virtual Public Meeting

August 8, 2024

WASTE INNOVATIONS

# Sustainable Waste Handling

**WIN Waste Innovations is a waste management company committed to delivering essential waste management solutions to customers and communities.**

## COMPANY STATS

- **Generating 3.3M MWh of renewable energy to the grid**
- **Recovering 258K tons of recycled material**
- **Providing jobs for over 2,250 team members**
- **Delivering essential services to over 150K customers**
- **Managing 11M+ tons per year of waste from residential households and businesses**

Hudson Falls, NY
WtE & Recycling

Dutchess County,
WtE Recycling

Westchester,
NY
WtE & Recycling

Somers, NY
Collection



- Corporate Office
- Waste Collection Facility (10)
- Recycling and Recovery Facility (2)
- Waste-to-Energy Facility (14)
- End of Life Management Site (7)

*Waste transportation sites (20) not pictured*

# Delivering Performance for the Planet

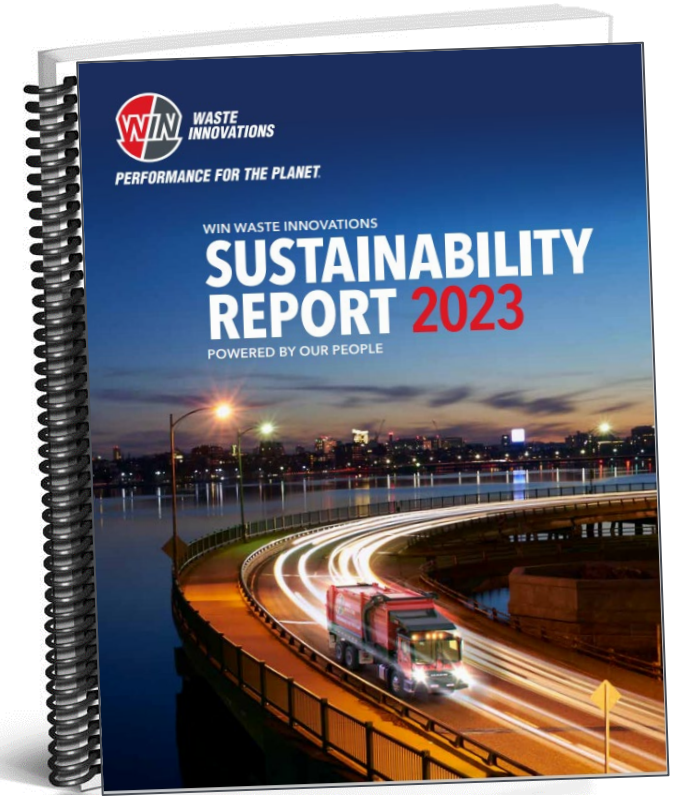
## Sustainability at every step

At WIN Waste Innovations, we believe that efficient recycling and waste management is an essential part of a more sustainable future. We have a platform of 53 strategically located collection, transfer, and disposal assets, including waste-to-energy facilities, transfer stations, ash monofills, and landfills, as well as fleets of rail cars and collection vehicles, including electric trash trucks. We embed sustainability into every step of the waste handling process — from curbside pickup to the capture of landfill gases and creation of renewable fuel and electricity.

# Sustainability Report

**We are proud to introduce the WIN Waste Innovations 2023 Sustainability Report**

This inaugural report shows our sustainability efforts and achievements during the year 2022, and it offers a look at what our company is doing today to make an even greater impact in the near and distant future.



# WIN Waste's Hudson Falls, NY Impact

**WIN Waste Innovations at Hudson Falls converts up to 148K+ tons of waste each year into renewable energy and returns it to the communities we serve.**

**148K+**
**TONS OF WASTE CONVERTED INTO RENEWABLE ENERGY**

**6K**
**HOMES POWERED WITH CONVERTED ELECTRICITY**

**124K**
**BARRELS OF OIL AVOIDED**

**1.7K**
**TONS OF METAL RECOVERED FOR RECYCLING**

**400+**
**TONS OF WASTE PROCESSED EVERY DAY**

**$600K**
**IN ANNUAL, LOCAL PAYMENTS VIA TAXES AND FEES**

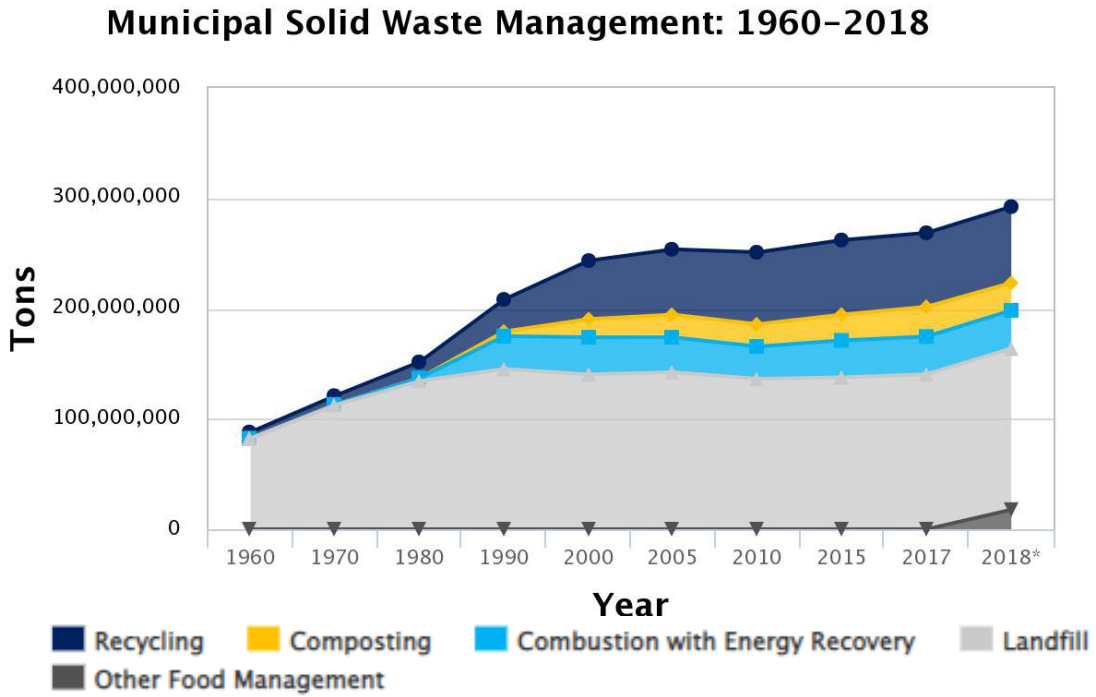
**35**
**FULL-TIME, LOCAL JOBS WITH DAY-1 BENEFITS**

# The State of Waste

## Despite increased recycling, the world is generating more waste than ever

- This waste is managed in the U.S. in three ways: recycling and composting (34.7%), waste-to-energy (12.8%) and treatment and disposal, primarily by landfilling (52.5%)

- The world has more municipal solid waste now than at any point in history. In the U.S. alone, we generate nearly 300 million tons a year, a number that rises each year as our population grows




Source: National Overview: Facts and Figures on Materials, Wastes and Recycling | US EPA

# Challenges that WTE is prepared to meet

- **Despite waste reduction efforts, NY has failed to reduce its waste over the last 10 years. "The state remained essentially at the same disposal rate of pounds of MSW per person per day in 2018 as it was in 2008.**

- **NY does not want to rely on landfills for end disposal. "The least preferred method of New York State's solid waste management hierarchy is land burial, more commonly referred to as landfilling."**

- **Transporting waste across local, county, and state lines is becoming more difficult. "Limitations at the local municipal level may restrict the acceptance of waste from areas outside of the municipality where the landfill is located."**

- **Landfills are filling up. Local landfills nearing capacity, like Ava Landfill (312K tons/yr), Clinton County Landfill (250K tons/yr), Colonie – Albany (255K tons/yr), & Modern Landfill – Niagara (815K tons/yr)**

- **NY continues to export nearly 30% of its MSW. Approximately 6M Tons of MSW is transported annually to neighboring states that may also face declining landfill capacity in the future.**

New York State Solid Waste Management Plan - NYSDEC

# Waste-to-Energy's Role in Energy Generation

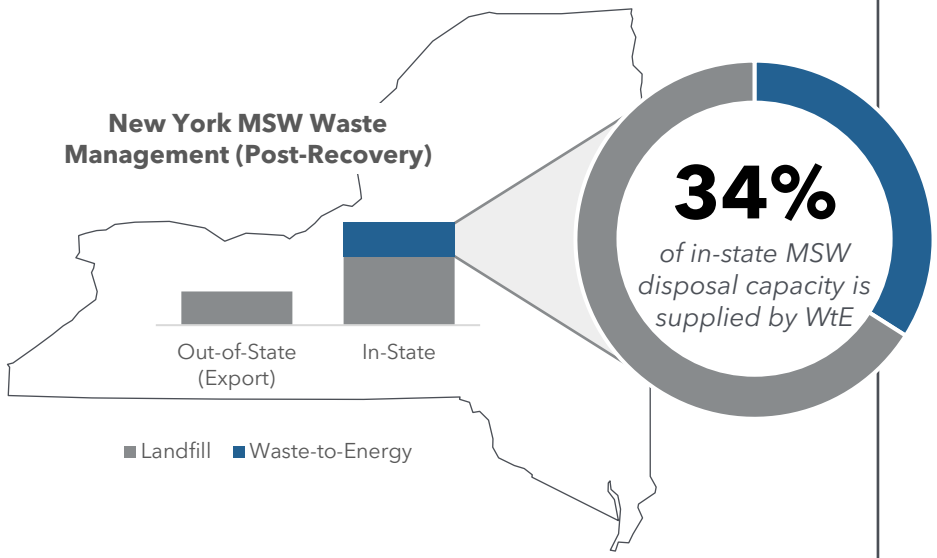
Waste-to-Energy is not a power generation operation. It is a waste management operation that produces electricity as a byproduct of sustainable waste processing, by **converting waste into a renewable attribute**.

*Waste-to-Energy plays a critical role in waste management for New York, accounting for a third of the in-state MSW disposal capacity.*

Diverting **4.1M** tons of municipal solid waste away from landfills

Reducing greenhouse gas emissions by **6.5M** metric tons of $CO_2e$

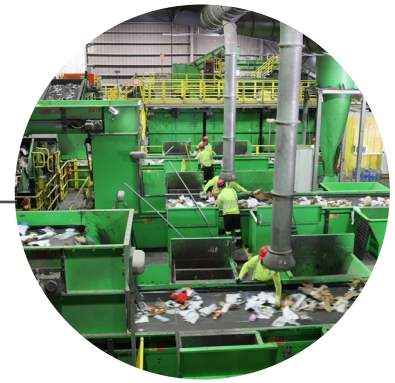
Producing over **285** MWh of renewable energy

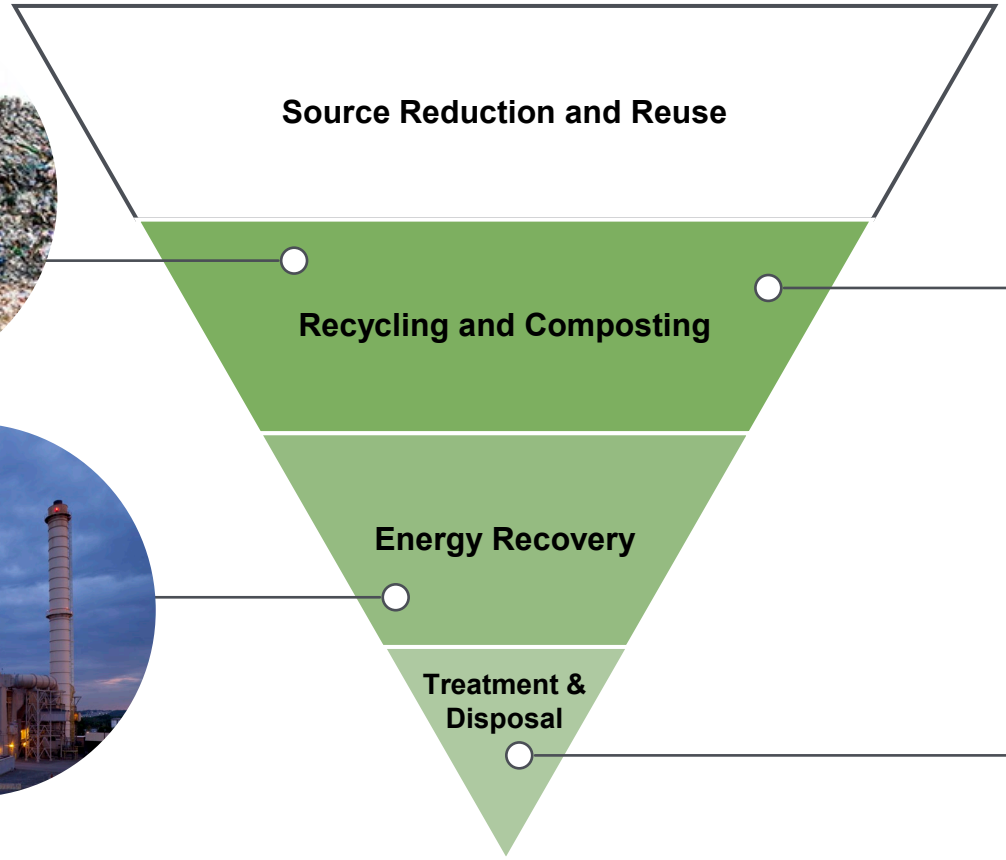



Source: Waste Business Journal

# Sustainable Waste Management

## U.S. EPA WASTE MANAGEMENT HIERARCHY






Sustainable Materials Management: Non-Hazardous Materials and Waste Management Hierarchy | US EPA

# Waste-to-Energy vs. the Alternative (Landfills)

**According to Lifecycle Analysis conducted by RTI International, processing waste at our WTE facility yields a significant reduction in GHG emissions over disposal of waste at Landfills**

## 1 Ton of Waste Processed at WtE

## =

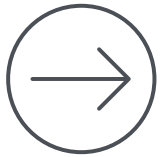
## 1.1 Ton Net $CO_2e$ Avoided

Westchester 2021 Impact: 1.1M Metric Tons of $CO_2e$ avoided

# Providing a Net Climate Benefit

## EPA-PREFERRED FOR DISPOSAL

WtE is endorsed by the U.S. EPA as a preferred method of end disposal and renders material inert.

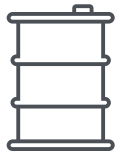


## LANDFILL DIVERSION

Converting waste into power reduces the volume of waste going to our landfills by 90%.

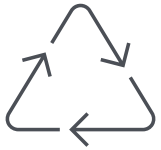
## REDUCES TRUCK MILES

In-market waste management outlet reduce waste exports, which reduces semi-tractor traffic and air pollution.



## FOSSIL FUEL AVOIDANCE

Renewable energy from waste reduces coal, oil, and natural gas from power generation & long-range transportation.



## RESOURCE RECOVERY

WIN Waste recovers & recycles more than 140k+ tons of metals each year from processing post-consumer recycled waste.


## GHG EMISSION REDUCTION

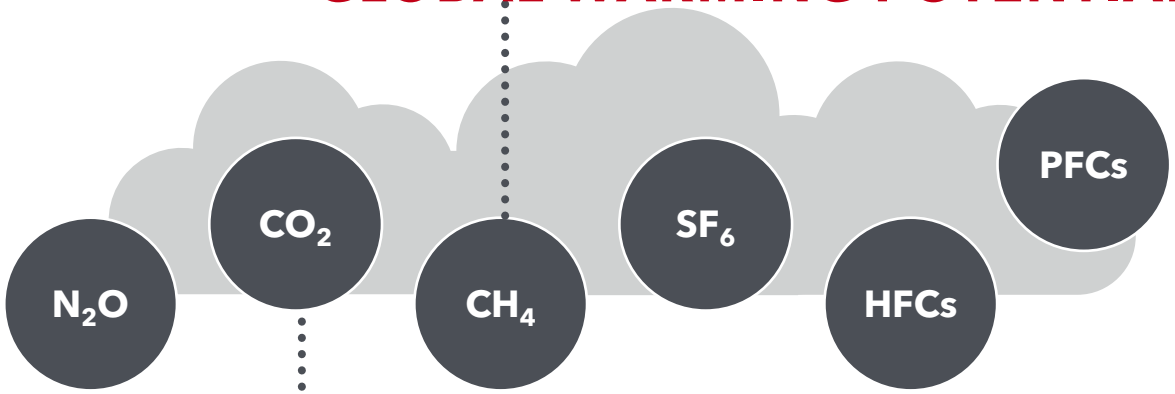
Reduces greenhouse gas emissions by up to 1 ton of net carbon equivalent for every ton of waste processed at our facilities.

# Measuring the Impact: Greenhouse Gasses

METHANE

GREENHOUSE GAS PROTOCOL

**GLOBAL WARMING POTENTIAL = 84 X CO2**

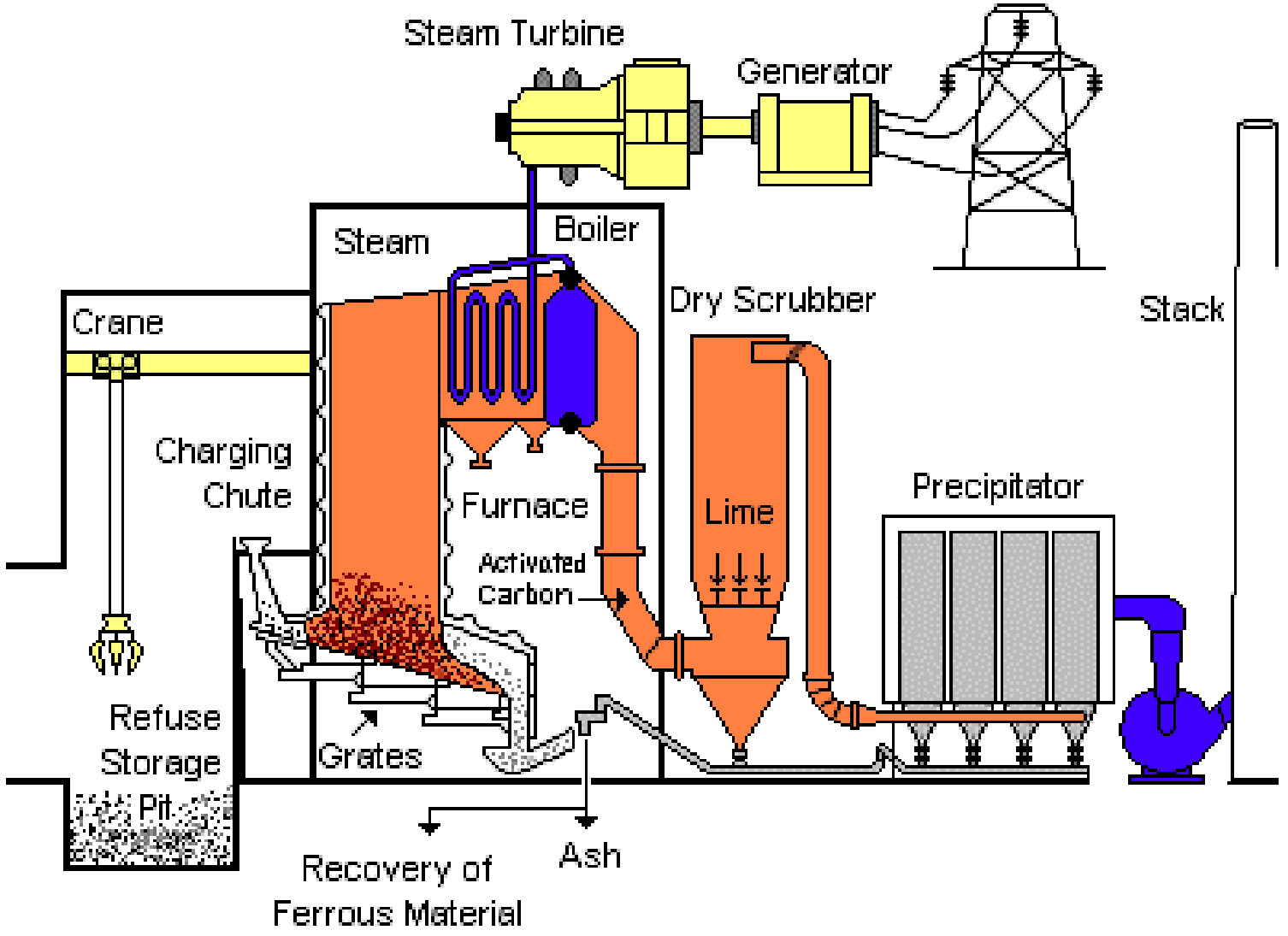



CARBON DIOXIDE

**GLOBAL WARMING POTENTIAL = 1**

Global Warming Potential (20-year time horizon)

# The Waste-to-Energy Process



# Protective of Public Health and the Environment

**The emission limits in our air quality permits are set at levels well below levels required for protection of public health and the environment.**

- The Clean Air Act requires USEPA to set and periodically revise National Ambient Air Quality Standards (NAAQS) for several air pollutants including sulfur dioxide, nitrogen oxides, particulate matter, lead, and others.
- These NAAQS must be set at levels fully protective of human health and the environment with an ample margin of safety to protect even the most sensitive people.
- Waste to Energy facility emission limits are based on the application of Maximum Achievable Control Technology and Best Available Control Technology.
- Such technology-based limits ensure the most advance air quality controls are employed resulting in air quality impacts well below levels needed to meet the NAAQS.
- Before a permit is issued air quality impacts from emissions are modeled, using sophisticated USEPA air modeling techniques, to verify impacts. This ensures existing air quality background concentrations are below the NAAQS.

# Protective of Public Health and the Environment

## Ensuring emission are minimized and compliance with emission limits:

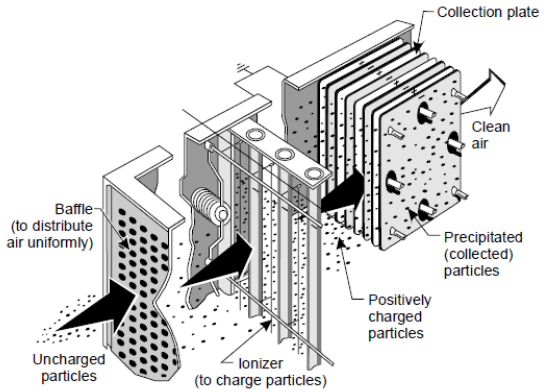
- Advanced Continuous Emissions Monitor systems (CEMS) are utilized to ensure air quality controls are operating as efficiently as possible, emissions are minimized, and emission limits continuously achieved.
- CEMS data is collected every minute, 24 hours a day and 365 days of the year. CEMS are subject to daily calibration with National Institute of Standards (NIST) backed calibration standards to ensure accuracy and independent third-party auditing of CEMS accuracy is conducted every quarter
- Key combustion and air quality control device operating parameters are continuously monitored to ensure good combustion conditions are achieved and air quality controls are being operated and maintain for maximum efficiency.
- Stack testing is conducted by third party stack testing companies following strict test method procedures specified in test protocols that are approved by regulatory agencies.
- Stack testing is observed by regulatory agency personnel to ensure test methods are being conducted in accordance with the protocol and boiler is being operated under normal operating conditions

# WIN's Waste-to-Energy Operations

## AIR QUALITY CONTROL

### BOILER GAS IS TREATED

Gas is treated with carbon and lime to remove mercury and trace organic compounds, and to neutralize acid gases.




### ELECTROSTATIC PRECIPITATOR

Gas passes through an Electrostatic Precipitator, where particulates and remaining pollutants are removed.

### 24/7 MONITORING

Cleaned gas exits through the stack after a series of continuous emissions monitors analyze and record levels, which are closely monitored by plant engineers.

# WIN's Waste-to-Energy Operations

**Air Quality Assessment Conducted for Title V Renewal Application**

- We voluntarily contracted with a 3rd party expert to conduct an air quality analysis on the potential impacts of Greenhouse Gas co-pollutants on Disadvantaged Communities including the City of Glens Falls, the Village of Hudson Falls and others.

- The analysis was conducted in accordance with the latest USEPA AERMOD air quality model and Division of Air Resources (DAR)-10[1] “NYSDEC Guidelines on Dispersion Modeling Procedures for Air Quality Impact Analysis” as documented in an air dispersion modeling protocol approved by NYSDEC.

- The air quality analyses results demonstrate that impacts of GHG co-pollutants are significantly below NYSDEC’s air quality guidelines averaging less than 1.2% of the guidelines.

[1] NYSDEC, DAR-10: NYSDEC Guidelines on Dispersion Modeling Procedures for Air Quality Impact Analysis, https://www.dec.ny.gov/docs/air_pdf/dar10.pdf

# Title V Permit Renewal and Modification

## Title V (TV) Permit Renewal

- TV permits are subject to 5-years term limits and are renewed every 5-years
- Current TV permit  term ends 11/26/2024
- This permit action will renew Title V Permit for another 5-year term

## TV Permit Modification

- TV permit modification will adopt NYDEC approved NOx RACT control technology and lower permitted NOx limits by 20%
  - –Control technology is modified staged combustion/low excess air furnace design provides inherently low NOx emissions
- New NOx limit of 185 ppm at 7% O2 / 24-hour average for each MWC unit
- New annual facility average NOx limit of 165 ppm at 7% O2/ 12 month rolling average
- Current limits are 205 ppm 7% O2 24-hour average for each MWC unit and an hourly limit of 260 ppm 7% O2

# Title V Permit Renewal and Modification

## TV Permit Modification for Adoption of NOx RACT

- The permit modification will incorporate new NOx limits based on a NOx RACT analysis that demonstrated to NYDEC that the current low NOx control technology fully meets RACT and that the cost of further NOx reductions greatly exceeds NYDEC's established RACT Guidelines.
- Upon issuance of the Title V renewal, Wheelabrator Hudson Falls must achieve and annual facility NOx limit of 165 ppmv (a 20% reduction in NOx emissions), dry corrected to 7% oxygen and 24-hour short term limit of 185 ppmv, dry corrected 7% oxygen for each MWC unit.
- Additionally, the TV modification will cap annual NOx emissions and require continuous monitoring to ensure NOx emissions remain below the cap.

# Title V Permit Renewal

## TV Permit Modification Adoption of NOx RACT

- EPA's and NYSDEC's response to permit modification request:

- *It has been determined that the NOx RACT analysis submitted **demonstrates compliance with the applicable regulation** and, as such, the facility specific NOx RACT proposal/plan is approved. The NOx RACT determination consists of low excess air/modified staged combustion and maintaining good combustion to achieve the proposed NOx emission limits and capping the facility potential to emit (PTE).*

# Proud Essential Service Providers

We take pride in providing essential and sustainable waste and recycling services that make a difference in the communities where we live and serve

# Questions?

For more information and to access project documents, visit www.winwastehudsonfalls.com

**Project Contact:**

Maurice Holcomb – Plant Manager
(518) 747-2390
mholcomb@win-waste.com
93 River Street, Hudson Falls, NY 12839