Advancing Clean Air and Climate Goals with Clean Fuel Trucks

Wednesday, June 3, 2020
1PM EST
Speakers

Matt Tomich
President, Energy Vision

Joanna Underwood
Founder & Senior Advisor, Energy Vision

Alessandra Biaggi
New York State Senate

Cecil Corbin-Mark
Deputy Director, WEACT

Susan McSherry
Director, Alt. Fuels Program, NYC Dept. of Transportation

Mark Riley
Regional Vice President, Clean Energy Fuels

Juan Corcino
Director of Fleet Operations, Manhattan Beer Distributors

Joy Gardner
Executive Director, Empire Clean Cities
Today's Discussion

Introduction & A Word on Current Affairs | Energy Vision
Opening Remarks | Alessandra Biaggi, New York State Senate
The Health and Climate Case for Transitioning Off of Diesel | WEACT
Introduction to NYC Clean Trucks Program | NYC Dept. of Transportation
The RNG Opportunity | Energy Vision
Clean Energy RNG Station Announcement | Clean Energy Fuels
Natural Gas Fleet Testimonial | Manhattan Beer Distributors
Tools and Additional Resources | Empire Clean Cities
Q&A: 25 mins
The Health and Climate Case for Transitioning Off of Diesel

Cecil Corbin-Mark
Deputy Director, WEACT
NYC Clean Trucks Program has Launched!

Expanding the Success of NYC DOT Hunts Point Clean Trucks Program
Cleaner trucks for a greener New York City! The NYC Clean Trucks Program is being offered by the NYC DOT to promote sustainable transportation and a cleaner environment in NYC.

The NYC Clean Trucks Program offers rebate incentive funding to reduce diesel exhaust emissions by replacing older, heavy polluting diesel trucks with new battery electric, or EPA emission compliant alternative fuel (compressed natural gas, diesel-electric hybrid, and plug-in hybrid) and diesel trucks.

Secure funding from $12,000 up to $185,000 per truck replacement, depending on fuel type and truck class size.

Contact us at nycctp@tetratech.com. Or call 877-310-2733
The Hunts Point Clean Trucks Program has expanded to provide funding for applicants in program-approved NYC Industrial Business Zones (IBZs).

Eligible trucks for replacement must be located in or providing service within 0.5 miles of program-approved IBZs for the previous 24 months.

Additional details apply.

<table>
<thead>
<tr>
<th>Bronx</th>
<th>Brooklyn</th>
<th>Queens</th>
<th>Staten Island</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bathgate</td>
<td>Brooklyn Navy Yard</td>
<td>Jamaica</td>
<td>North Shore</td>
</tr>
<tr>
<td>Eastchester</td>
<td>East New York</td>
<td>JFK</td>
<td>West Shore</td>
</tr>
<tr>
<td>Hunts Point</td>
<td>Flatlands/Fairfield</td>
<td>Long Island City</td>
<td></td>
</tr>
<tr>
<td>Port Morris</td>
<td>Greenpoint/Williamsburg</td>
<td>Maspeth</td>
<td></td>
</tr>
<tr>
<td>Zerega</td>
<td>North Brooklyn</td>
<td>Ridgewood/SoMA</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Southwest Brooklyn</td>
<td>Steinway</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Woodside</td>
<td></td>
</tr>
</tbody>
</table>

Contact us at nycctp@tetratech.com. Or call 877-310-2733
Trucks Eligible for Replacement Must Meet the Following Requirements:

- Class 4 to Class 7 local goods movement or commercial diesel-fueled truck
- Class 8 port drayage or local freight diesel-fueled truck
- Vehicles must have been operating within New York City for the past 24 months (additional details apply)

Replacement Trucks Must Meet the Following Requirements:

- Must be a brand new truck
- Perform the same function as the diesel-powered truck being replaced
- Class 4 to Class 8 trucks must be replaced with trucks in the same weight class as the old truck. (additional details apply)
- Be operated within 0.5 miles of NYC Clean Trucks Program-approved IBZs twice a week
Two Upcoming Webinars to Learn More about the NYC Clean Trucks Program!

June 10, 2020, 1pm ET
June 23, 2020, 1pm ET

- www.nycctp.com
- Email us at nycctp@tetratech.com
- Or call 877-310-2733
Clean, Ultra-Low Carbon Vehicle Fuel from Organic Waste

Renewable Natural Gas Now Available in New York City

Matt Tomich, President, Energy Vision
Clean Fuels/Clean Trucks Webinar – June 3, 2020
Transforming Organic "Waste" into a Clean Fuel Resource

- Urban Food & Green Waste
- Municipal Wastewater
- Animal Manure & Agricultural Organics
- Landfills

<table>
<thead>
<tr>
<th>Resource</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food Waste</td>
<td>66.5 million tons/year</td>
</tr>
<tr>
<td>Waste Water</td>
<td>17,000 facilities</td>
</tr>
<tr>
<td>Agricultural Waste</td>
<td>8,000 large farms and dairies</td>
</tr>
<tr>
<td>Landfill Gas</td>
<td>1,750 landfills</td>
</tr>
</tbody>
</table>
From Organic Waste to Clean Vehicle Fuel

The Pathway from Organic Waste to RNG

Wastes
- All organic wastes contain energy.

Biogas
- Anaerobic digestion of wastes at landfills or in digester plants produces energy-rich biogas.

RNG Fuel
- Biogas upgrading removes carbon dioxide & impurities to make renewable natural gas (RNG).

Fuel Stations
- RNG goes to on-site fueling stations, or by truck or pipeline to off-site pumps.

Vehicles
- RNG works just like regular natural gas to power vehicles.
~105 Operational US RNG Projects
The Climate Case for RNG use as a Vehicle Fuel

Source: CARB LCFS Pathway Data, 2019
Reducing Harmful Tailpipe Emissions with Renewable Natural Gas

- Using current electric power grid to recharge batteries
- Assumes EV power is 100% sourced from renewable sources
- Current natural gas engine certified at 0.01 NOx emissions

Source: South Coast Air Quality Management District Science & Technology Advancement Department
Proven, Commercial, Cost-Effective Vehicle Technology

- Nationwide, approximately 30,000 medium and heavy-duty natural gas vehicles are operating.
- NGV technology is well-suited to refuse fleet and other urban duty cycles.

Waste Management, Altamont Landfill

BULK TRANSPORTER
Renewable CNG Fueling Indiana Milk Fleet

FOOD FLEETS
Matt Tomich, President

email: tomich@energy-vision.org
tel: 212.228.0225
web: www.energy-vision.org
RNG Fuel and Truck Availability

Mark Riley
Regional Vice President
## RNG Truck Availability (Class 3-8)

### Broad availability of engines and truck chassis
- Ford, Freightliner, GM, Isuzu, Kenworth, Mack, Peterbilt, and Volvo

### Near Zero NOx Emissions
- Cummins Westport B6.7N, L9N, and ISX12N

### Proven and Durable
- Newest engines provide diesel-like performance and reliability

### Resources to find the truck for you
- [https://www.ngvamerica.org/vehicles/availability/](https://www.ngvamerica.org/vehicles/availability/)
No Diesel Particulate Filter (DPF)
No Regens
No DPF Cleaning
No Selective Catalytic Reduction (SCR)
No Diesel Exhaust Fluid (DEF)

More Fleet Uptime
Less Complexity
Less Costs
Zero Now: Program Summary


CNG Truck Pricing
- Partnership among Cummins, major OEM’s and fuel system providers
- Exclusive Truck Pricing
- Five Year Engine Warranty

Guaranteed Fuel Spread
- CNG Priced as low as $1.00 below Diesel
- Five Year Guaranteed Discount
- Eliminates Financial Risk

Zero Emissions Now
- CARB-Certified Near Zero
- Meets 2023 CARB Certification for operation in California
- 100% Renewable Natural Gas
- Up to 90% Reduction in Greenhouse Gas Emissions
Hunts Points RNG Station

NYC’s First 100% RNG Station

Designed to Fuel All Vehicle Types With Up To 53’ Trailers

Optimally-Located For Fleets Operating In Hunts Point

1361 Ryawa Ave.
Bronx, NY 10474
Mon-Fri: 5:00am-5:00pm
Saturday: 5:00am-1:00pm
Sunday: Closed
Find RNG or CNG Fuel In NYC

1
RNG Station in NYC

8
CNG/RNG Stations in NYC
Thank you
Mark.Riley@CleanEnergyFuels.com
Committed to Sustainability

Juan Corcino
Senior Director of Fleet Operations, Maintenance & Sustainability
Manhattan Beer Distributors
Manhattan Beer Distributors: The Business & The Fleet

- 45 million cases delivered to 27,000 customers yearly
- Over 3 million revenue miles on 400 heavy duty trucks
- Since 2002, 41% of our fleet has converted to CNG. (167 trucks and tractors)
Advantages of natural gas vs Diesel

Does not require Emissions Control Technology

- Price efficiency: About 40% cheaper than diesel
- Oil change intervals are at 25,000 miles; spark plugs at 50,000 miles

- Effortless start up in cold weather conditions
- Require less warm up time
- Minimal engine noise
- Stable fuel pricing and no fuel supply disruptions
Let the changes you want in this world begin with you.
Introduction to ECC & Additional Resources
• Not-for-profit environmental organization and designated U.S. Department of Energy’s Clean Cities Coalition for NYC & the Lower Hudson Valley.

• Our mission is to ENSURE CLEAN AIR FOR FUTURE GENERATIONS.

• Part of a National Network of nearly 100 local coalitions that have helped place over 780,000 alternative fuel vehicles (AFVs) across the country.
WHAT WE DO

- CONNECT FLEETS WITH FUEL PROVIDERS, INDUSTRY PARTNERS, AND RESOURCES
- OFFER TRAINING AND ACCESS TO TECHNICAL ASSISTANCE
- IDENTIFY FUNDING AND INCENTIVE OPPORTUNITIES
- PROVIDE EDUCATION AND OUTREACH TO DECISION MAKERS, FLEETS, AND THE PUBLIC
- COLLECT AND ANALYZE REGIONAL DATA
- ALTERNATIVE FUEL CORRIDOR PLANNING
Clean Cities Coalitions offer resources to calculate cost savings and emissions reductions of AFV.

- Quick calculator (left): https://afdc.energy.gov/calc/
- For more in-depth analysis, contact ECC about our EMPIRE GREEN FLEET Program which helps fleet managers calculate life cycle cost savings and emissions reductions, while also providing public recognition.
- Vehicle search tool and detailed information: https://afdc.energy.gov/vehicles/search/
- Alternative Fueling Station Locator: https://afdc.energy.gov/stations
- Funding and Incentives: www.empirecleancities.org/incentives.html
- Additional information on RNG: https://afdc.energy.gov/fuels/natural_gas_renewable.html
Joy Gardner
Executive Director
joy@empirecleancities.org
(Tel) 212-839-7728

Lidia Henderson
Research & Marketing Coordinator
lidia@empirecleancities.org

www.empirecleancities.org
Q & A