

REDUCING EMISSIONS THROUGH RENEWABLE DIESEL





#### AGENDA

- Introduction And Welcome
- Renewable Fuel and Product Benefits, Considerations, and Future for Fleets - Scott Fenwick, Clean Fuels Alliance
- Fuel Availability And Successfully Transitioning To Renewable Fuels: Steven Levy, Sprague Energy
- Fleet Opportunity: Zach Miller, Trucking Association of New York
- Fleet Success Story: A Firsthand Account Of A Successful Transition To Renewable Fuels: Nick D'Andrea, New York Times
- Tools And Resources
- Audience Q&A: Engage with industry experts to get answers to your questions



# WHO ARE WE?



**Empire Clean Cities** is a New York based 501(c)(3) notfor-profit environmental organization committed to ensuring clean air for future generations by providing citizens and stakeholders with reliable information about alternative fuels and advanced vehicle technologies.



Mission Electric is our Electric Vehicle Campaign and online resource hub, providing information about electrified transportation to car buyers, fleets, and micromobility users about the benefits of going electric in New York State.

#### OURTEAM



Joy Gardner
Executive Director



Manny Silva
Community
Engagement Manager



Lauren Kesner-O'Brien
Policy and Partnerships
Manager



David Chernack
Program Manager



Lara Calkivik
Communications and
Outreach Coordinator

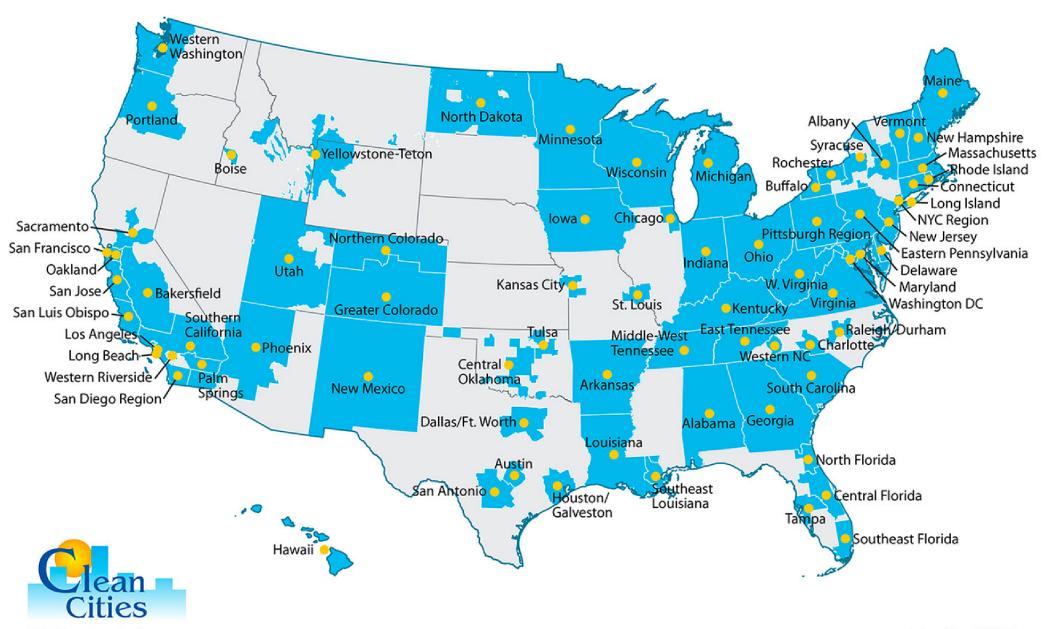


Zanasia Graham
Mission Electric
Coordinator



- Provide education and outreach to decision makers, fleets, and the public
- Offer AFV planning support, training, and access to technical assistance
- Connect fleets and municipalities with alternative fuel providers, industry partners, and resources
- Identify funding and incentive opportunities
- Collect and analyze regional data
- Support Alternative Fuel Corridor planning

# ABOUT CLEAN CITIES



U.S. Department of Energy

- ECC is the designated U.S.
   Department of Energy's designated
   Clean Cities Coalition for NYC and
   the Hudson Valley.
- The Clean Cities program—celebrating 30 years!—is made up of a national network of more than 75 local coalitions.
- Clean Cities Coalitions provide access to data, information and a vast network; competitive funding opportunities; and support from US DOE and National Labs.

Map Date: 3/8/23





## Renewable Diesel Benefits, Considerations, and Future for Fleets

Empire Clean Cities December 20, 2023

#### Clean fuels appreciates the support of our farmers and their checkoffs























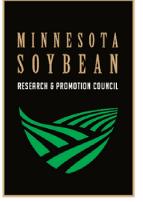








































### Clean Fuels Alliance America vision

• Biodiesel, renewable diesel and sustainable aviation fuel will be recognized as mainstream low-carbon fuel options with superior performance and emission characteristics. In on-road, off-road, air transportation, electricity generation, and home heating applications, use will exceed 6 billion gallons by 2030, avoiding over 50 million metric tons of CO2 equivalent greenhouse gas emissions annually. With advancements in feedstock, use will reach 15 billion gallons by 2050.

#### Different Fuels – BD, RD, SAF

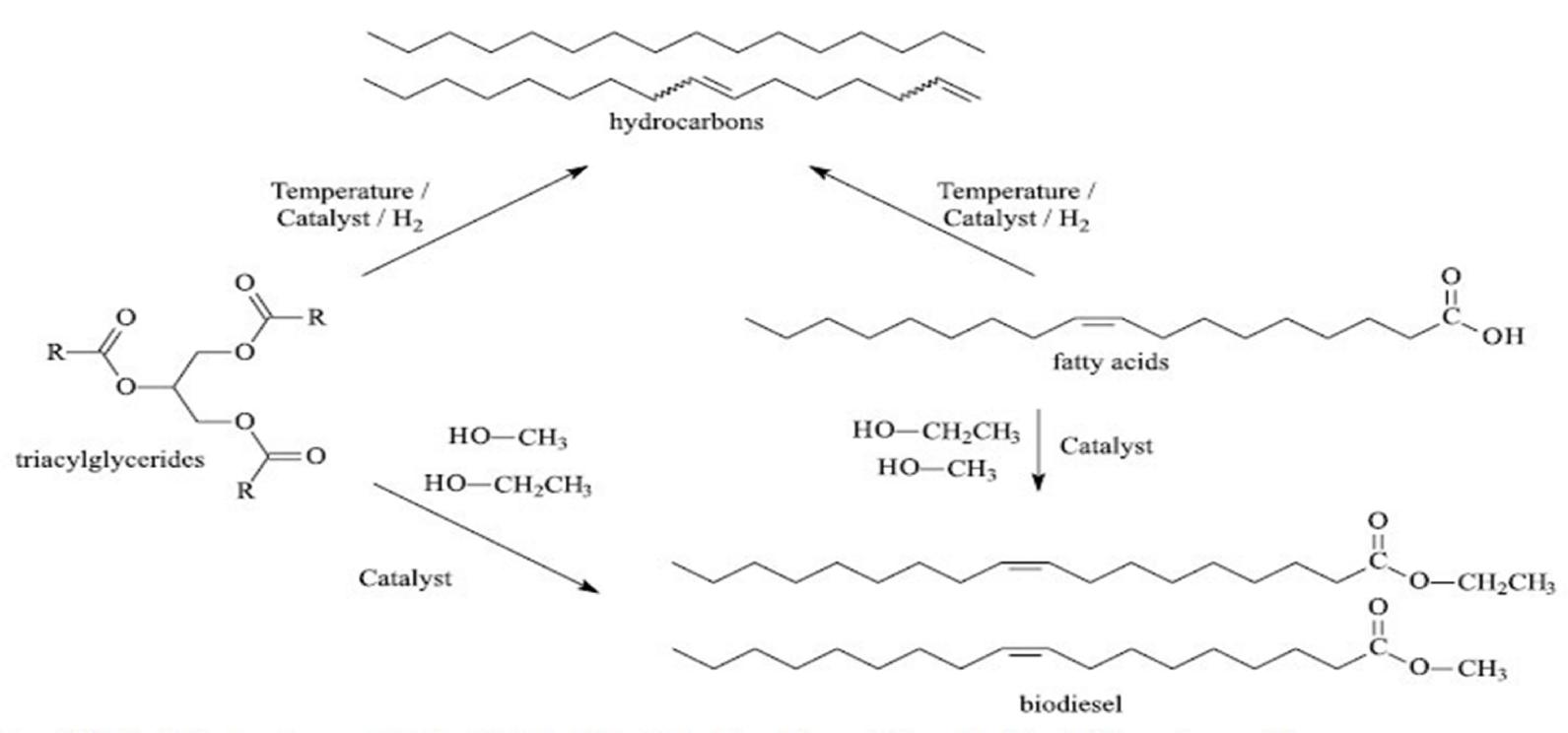
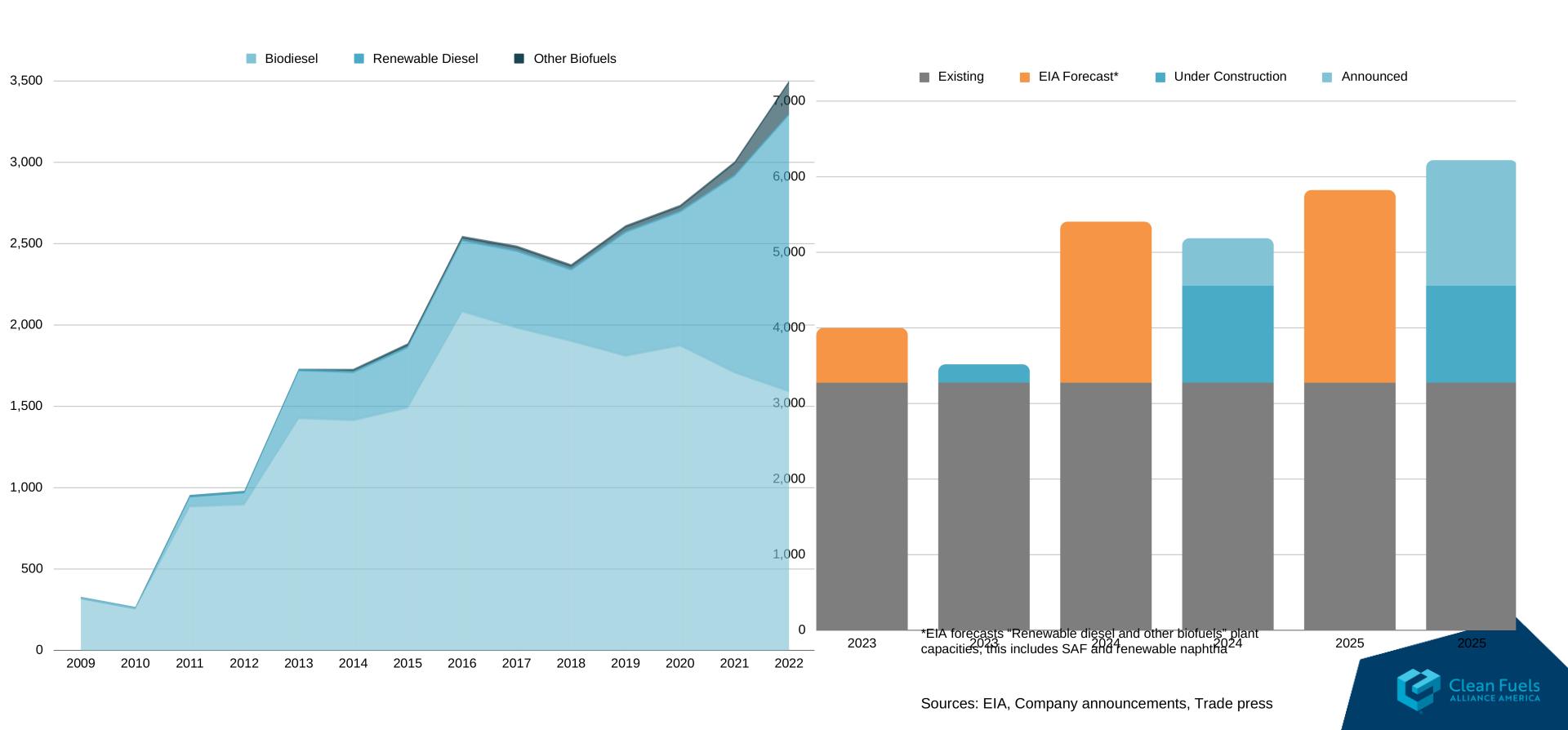


Figure 2. Biofuels (hydrocarbons and biodiesel) obtained from triacylglycerides and fatty acids. Adapted from reference 13.



#### BBD Supply projected to Grow





#### Market Forecasts

- EIA revising higher estimates for demand AND supply of both biodiesel and renewable diesel throughout 2023 and 2024
- Industry expects SAF production to account for 30% of overall renewable fuel production by 2030
   85% of SAF expected to result from using fats, oils and greases (HEFA)
- Credits along with federal / state regulatory programs will impact volumes and direction; assuming no significant changes in feedstock choices and availability



#### Why?

Advanced Biofuel; min. 50% GHG Reduction

Federal Policy Can Be Used in Any Diesel-Fueled Application

Lower PM Health Benefits ES Low Carbon

Can Be Used In Any Compression Ignition Engine
Sustainable Improved Combustion Reduces Emissions

State Policy Bridge to Electrification **Domestic** 

Jobs Proven Performance

Climate Change **Energy Security** 



#### What does it take?

Federal Policies Proven Performance

OEM Support Appropriate Test Methods

Regulations

Cost

Durability Hebertifications Shrastructure Consumer Confidence State Policies Compatibility

#### Clean Fuels Technical Objectives

- Prioritize work needed for renewable fuels in 2030, 2050
- Focus on markets that make the most sense for higher volumes and higher blends
- Higher baseline level of OEM support
- Specific applications for B50/B100, R80/B20 and R50/B50
- Work cooperatively with OEMs (and others) that are interested only Times, NY Department of Citywide Administrative Services (DCAS),
  - NY Times, NY Department of Citywide Administrative Services (DCAS), Municipalities
  - Create OEM market differentiation/advantage for high blend support
- Some efforts will likely be proprietary to an individual OEM, or market application
- Upcoming RD & SAF projects



For more in-depth information,





#### Tools & resources

- Alternative Fuels Data Center (AFDC)
  - Alternative Fueling Station Locator
  - https://afdc.energy.gov/stations/#/find/nearest?fuel=RD
- Coordinating Research Council (CRC)
  - Renewable Hydrocarbon Diesel Fuel Properties and Performance Review #673
  - https://crcao.org/wp-content/uploads/2019/05/CRC-673.pdf
- Clean Fuels Alliance America
  - https://cleanfuels.org/
- National Renewable Energy Laboratory
  - Biodiesel Handling and Use Guide
  - https://afdc.energy.gov/files/u/publication/biodiesel\_handling\_use\_guide.pdf







#### Renewable Diesel

**Empire Clean Cities** 

December 20, 2023



#### Agenda

- 1 Sprague History
- Renewable Diesel Overview
- Sprague's Liquid Fuel Assets
- 4 Q&A

#### Fueling Possibilities Since 1870

1870

Founded in Boston, MA by Charles Hill Sprague



Expanded assets and supported customers during energy crisis



Expanded capabilities, pioneered ultra low-sulfur diesel and biofuel offerings

2022-

New ownership provides expanded resources,
Introduction of Renewable Diesel at the Bronx terminal















1870-1949

Supplied whale oil and coal, fueling America's industrialization

Ran Allied coal support efforts through WWI & WWII

1986-2000

Diversified products, programs, and services, launched TFM program 2011-22

Expanded footprint through acquisitions, IPO 2013, enhanced online customer portal & pricing platforms, RD Pilot Programs

Through turbulent markets and challenging supply conditions, including World Wars and natural disasters, We've always been committed to finding the best solutions for our customers. Renewable diesel aligns perfectly with our mission of providing cleaner, more sustainable energy options.



David Glendon
 President & Chief Executive
 Officer,
 Sprague

#### What is Renewable Diesel?

Renewabl e Diesel

- Advanced, low carbon, ultra-low sulfur drop-in fuel replacement designed to significantly reduce emissions
- Produced from renewable feedstocks such as used cooking oil, fats, and soybean oil
- Can be used at 100% rate, requires no blending
- High performance with high cetane, colorless, odorless, cleaner burning, and very stable
- Approved for use by major OEMs

#### Benefits of Using Renewable Diesel

Reduce Greenhouse Gasses



Decrease your emissions by at > 50%\*

Drop-In Solution



Requires no costly infrastructure changes

Quality and Performance



ASTM D - 975 ASTM D - 396 Support Sustainability



100%
sustainablysourced
renewable
materials

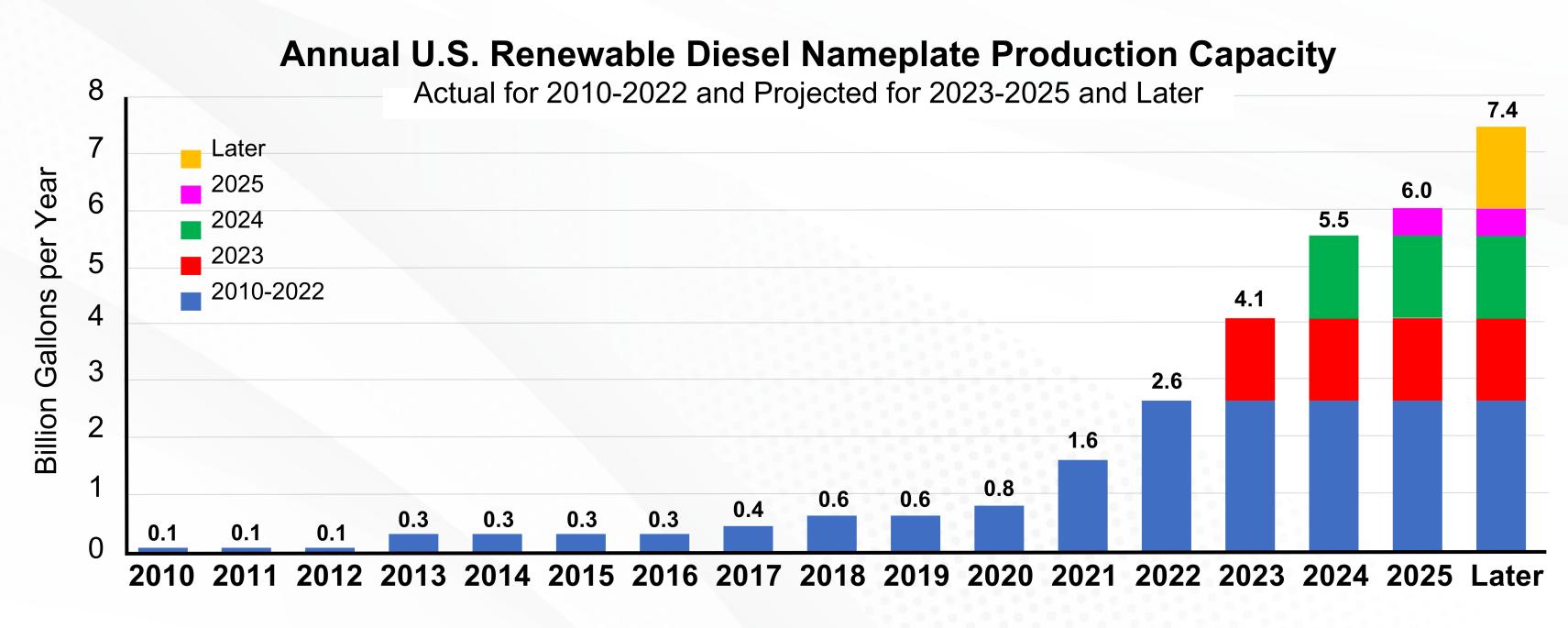


#### High-Performance, Cold-Weather Friendly Renewable Diesel / Sprague Operating Resources LLC / V-23-01020 June 2023

Method	Test	Result	Units
ASTM D613	Ignition Quality Cetane Number	>65.0	
ASTM D4737	Cetane Index Method A	93.5	
ASTM D4737	Cetane Index Method B	78.9	
ASTM D5773	Cloud Point Constant Cooling Rate Method		
	Automated Cloud Point	-25	Celsius
	Automated Cloud Point	-13	Fahrenheit
ASTM D6371	Cold Filter Plugging Point		
	CFPP	-29	Celsius
	CFPP	-20.2	Fahrenheit

#### Renewable Diesel Production Growth

#### by Year





Sources: EIA, Render and Biodiesel Magazines, and Other Industry Sources

#### Renewable Diesel Supply Chain

The Renewable Difference vs. Traditional Fossil Fuel Supply and Distribution

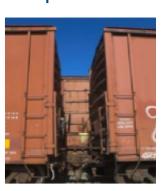


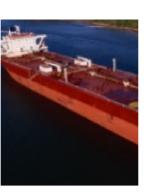




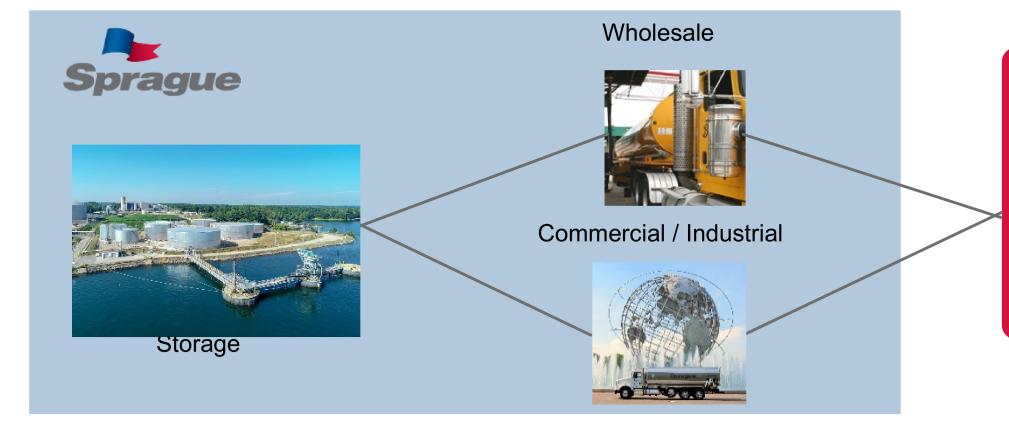
**Transportation** 







MADE FROM 100% SUSTAINABLY SOURCED RENEWABLE RAW



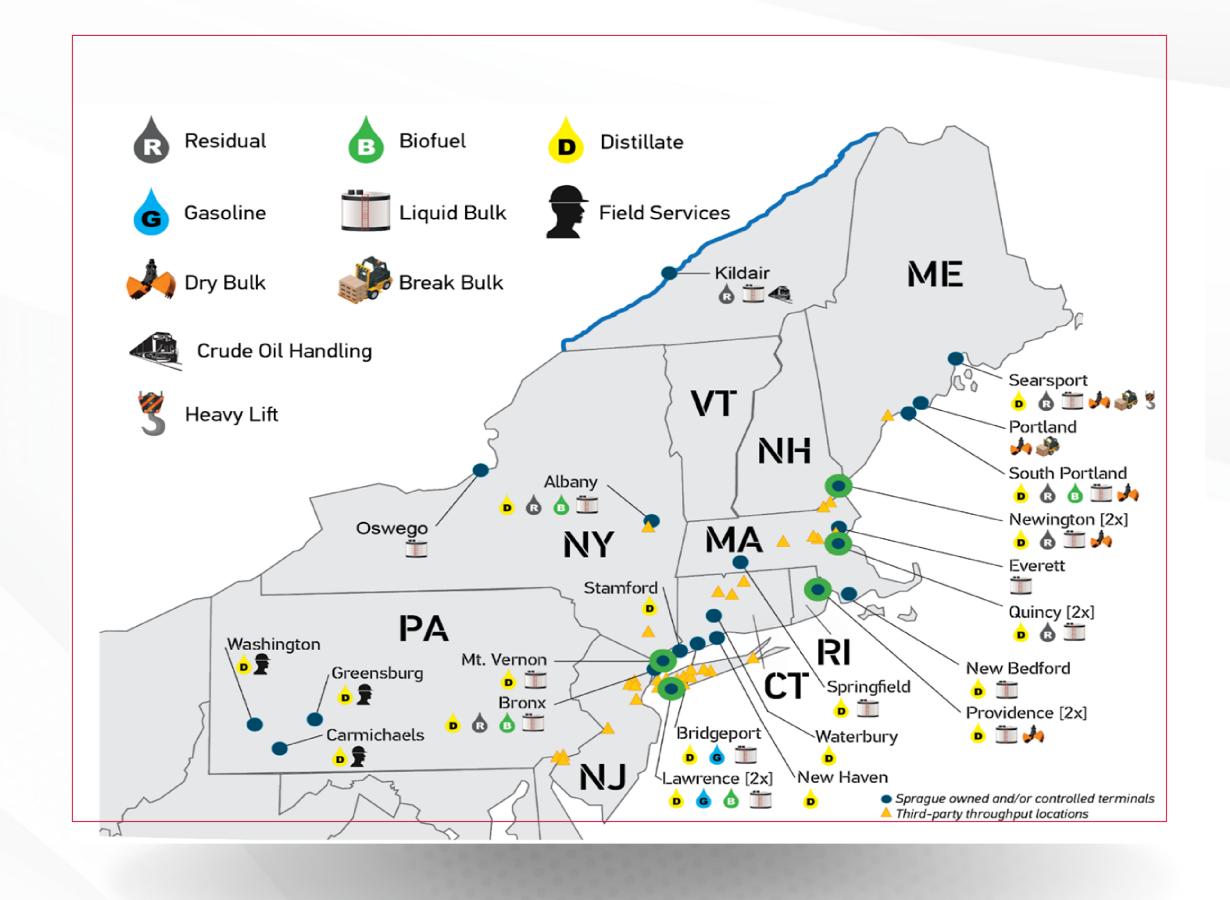
- Fleets (onroad/offroad)
- Marine
- Power Plants
- Generators
- Truck Stops
- Property Management

#### Where is Renewable Diesel Available?

Bronx, NY Terminal

Renewable Diesel is available at the Sprague Bronx, NY terminal for both delivery and rack loading.....as demand increases availability will expand

#### Sprague Terminal Network









Our Energy Makes the Difference

#### Thank You!

**Contact:** 

Steven J. Levy

slevy@spraguenergy.com

914-328-6770







#### Zach Miller Director of Metro Region Operations Trucking Association of New York

- zach@nytrucks.org
- 718-309-4564
- <u>nytrucks.org</u>





#### TOOLS AND RESOURCES

- Biodiesel Handling and Use Guide, NREL
   (https://afdc.energy.gov/files/u/publication/biodiesel\_han dling\_use\_guide.pdf)
- AFDC Vehicle Searches
   (https://afdc.energy.gov/vehicles/search/)
- AFDC Station Locator
   (https://afdc.energy.gov/stations/#/find/nearest)
- AFDC Federal and State Laws and Incentives search (http://www.afdc.energy.gov/laws/)
- National Biodiesel Board Original Equipment Manufacturer Statement Summary Chart (https://www.biodiesel.org/docs/default-source/fact-sheets/oem-support-summary.pdf?sfvrsn=4e0b4862\_10)



#### TOOLS AND RESOURCES

- Argonne National Laboratory AFLEET Tool (https://greet.es.anl.gov/afleet)
- U.S. Environmental Protection Agency (EPA) Renewable
   Fuels Standard (RFS2) website
   (https://www.epa.gov/renewable-fuel-standard-program)
   and RFS2 Data page (https://www.epa.gov/fuels registration-reporting-and-compliance-help/public-data renewable-fuel-standard)
- U.S. Energy Information Administration Annual Energy
   Outlook (http://www.eia.gov/forecasts/aeo/)
- Steel Tank Institute (STI) Tank Compatibility Letters
   (http://www.steeltank.com/Publications/E85BioDieselandA
   lternativeFuels/ManufacturerStatementsofCompatibility/ta
   bid/468/Default.aspx)





### Thankyou!







in /EmpireCleanCities

Phone: 212-456-7890

Email: info@empirecleancities.org

www.empirecleancities.org

