

BIO/RENEWABLE DIESEL

City-wide (County?) Proposal

BACKGROUND

- October 2017, I began researching renewable diesel (RD99). Only found one supplier with available...Renewable Energy Group (REG). I wanted to pilot the fuel at Solid Waste Services but ran into obstacles.
 - i. Logistics...wet hosing was not possible
 - ii. Storage...no onsite tanks
 - iii. Price...could be challenging
- October 2018, at Charlotte Water (CLTWater)...no obstacles. REG could supply the fuel for the pilot. After several months, CLTWater received approval from Procurement to pilot RD99 up to \$100K. The pilot began in mid May 2019 at Zone IV fueling approximately 34 units. The pilot ended successfully in late November 2019.

STRATEGIC ENERGY ACTION PLAN GOALS

➤ ACTION AREA 6:

STRIVE TOWARD 100% ZERO CARBON CITY FLEET BY 2030

The Sustainable and Resilient Charlotte resolution sets and expectation that the City will strive to transition the city's vehicle fleet to zero carbon by 2030. the requirement to become zero carbon means that the vehicles must run on electricity, hydrogen, biogas, or biofuel by 2030.

The SEAP focuses on ways to decentralize the energy supplies within a regulated state. *This will drive an increase in the use of renewable energy, localized energy generation, and procurement of zero carbon energy.*

BIO/RENEWABLE OPTIONS

- ▶ *Definitions*
- ▶ *ASTM Information*
- ▶ *Typical Properties*
- ▶ *Emissions Comparison*
- ▶ *Various Feedstocks*

PROS AND CONS

PROS

- ▶ Made in American by American farmers, crops and suppliers
- ▶ Retain current equipment and/or purchase the same equipment without incremental exorbitant costs
- ▶ Drop-in solution to the SEAP now - no retrofits/up-fits to equipment
- ▶ Little to no infrastructure changes/costs
- ▶ Non-toxic: reducing impact to water resources
- ▶ Higher Flashpoint than regular diesel
- ▶ Using biofuels is a closed circle
- ▶ **85% lower GHG emissions**
- ▶ **Does not interfere with food supply**
- ▶ **Can use the same cold-weather additives with renewable as ULSD, 10-20% ULSD, or biodegradable additives**

CONS

- ▶ Higher costs
 - ▶ Higher Cloud Point
 - i. Diesel ~ 14°F
 - ii. Biodiesel ~ 30°F
 - iii. Renewable ~ 9°F
- Depending on conditions, i.e. climate, storage, etc

DIESEL FUEL PURCHASED IN 2019

Approximately 1,800,000 gallons of diesel annually