

A stylized graphic on the left side of the slide. It features a hand-like shape at the top, with several curved lines representing fingers, holding a flame. Below the flame is a lightbulb base with two prongs at the top and a single prong at the bottom. The entire graphic is rendered in a light teal color against a darker teal background.

Renewable Fuel Oil in Pennsylvania

Expanding the zero-carbon energy market

RFO in Pennsylvania

Why Renewable Fuel Oil ?

- Addressing Externalities
- Pathway to Zero
- Cost of Carbon
- Cost Effectiveness

Objective: Expanding the regional market for Renewable Fuel Oil



Sustainable Energy Fund

Who we are:

- Non-profit focused on promoting sustainable energy in PA for over 20 years
- Recently completed Net-Zero office building
- Administrator, PA C-PACE Program

Key staff:

- John Costlow, President & CEO
 - Former member Mid-Atlantic Bioenergy Council
 - Certified Sustainable Development Professional
 - Certified Carbon Reduction Manager
 - Certified Performance Contracting and Funding Professional
- Brian Hillard, Technical Specialist



Sustainable Energy Fund

Essence:

- Revitalize Living Systems
- Realize a regenerative energy future
- Enable action

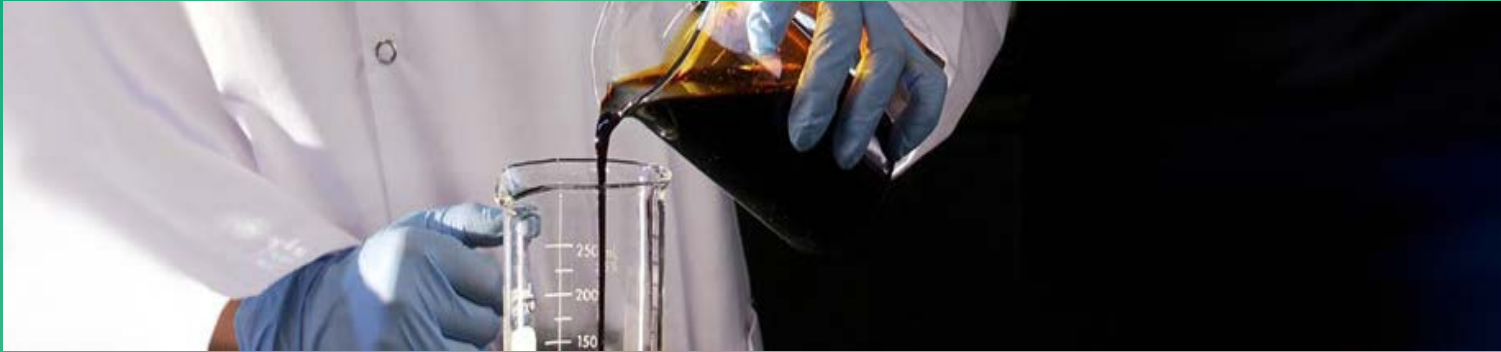
Mission Statement:

Our mission is to promote, research, and invest in clean and renewable energy technologies, energy conservation, energy efficiency and sustainable energy enterprises that provide opportunities and benefits for PPL Electric ratepayers in Pennsylvania

Expanding the RFO market holds the potential to reduce our environmental footprint while enhancing our potential for a regenerative energy future



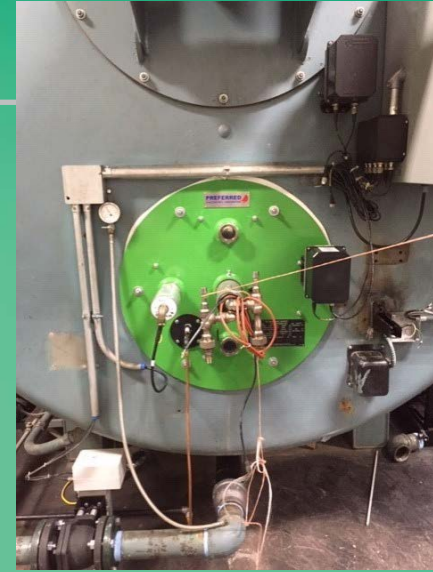
What is RFO?



- A homogeneous, organic liquid obtained from the thermal conversion of biomass
- Primarily carbon, hydrogen and oxygen
- Appearance of motor oil
- It is polar in nature and does not readily mix with hydrocarbons
- Tends to contain less metals and sulfur than petroleum liquids
- Pourable at room temperatures
- pH of 3; similar to vinegar or red wine
- Is the only known liquid fuel sourced from woody biomass that can be used for thermal operations in existing boilers

RFO Projects – Bates College Lewiston, ME

- 3 Cleaver Brooks 700HP boilers.
- Converted 1 boiler to RFO in 2017 and a second in January 2019
- The RFO boilers carry nearly 100% of the steam load.
- They have seen a 81% reduction in their scope 1 GHGs.
- Project had a less than 2-year payback.



RFO in Pennsylvania

Why Renewable Fuel Oil?

- Transition to carbon neutral heating fuel
- Expand and enhance regional industry
- Incentivize in-state carbon market
- Improve cost efficiencies
- Accelerating towards carbon neutral future



RFO in Pennsylvania

Moving forward

- Identify key pathways
- Assemble key stakeholders
- Due diligence



Legal & Finance



Technical



Logistics



RFO in Pennsylvania

Questions?





Sustainable Energy Fund

Live it today for tomorrow.