

# Panel 3: BIOMASS-BASED FUELS

- **Bob Simkins**, Burlington County Department of Solid Waste Management
- **Bryan Luftglass**, Linde – Landfill Gas to LNG
- **Chris Voell**, Eastern Sales Manager, BioCNG – Small scale biogas to CNG
- **Joseph Biluck**, Medford Township Board of Education – Biodiesel

# Can Biomass Based Fuels be Part of the Solution?

- Are the biomass based fuels available?
- Are the technologies available to utilize them?
- Do they provide environmental benefits?

# Biomass Based Fuels

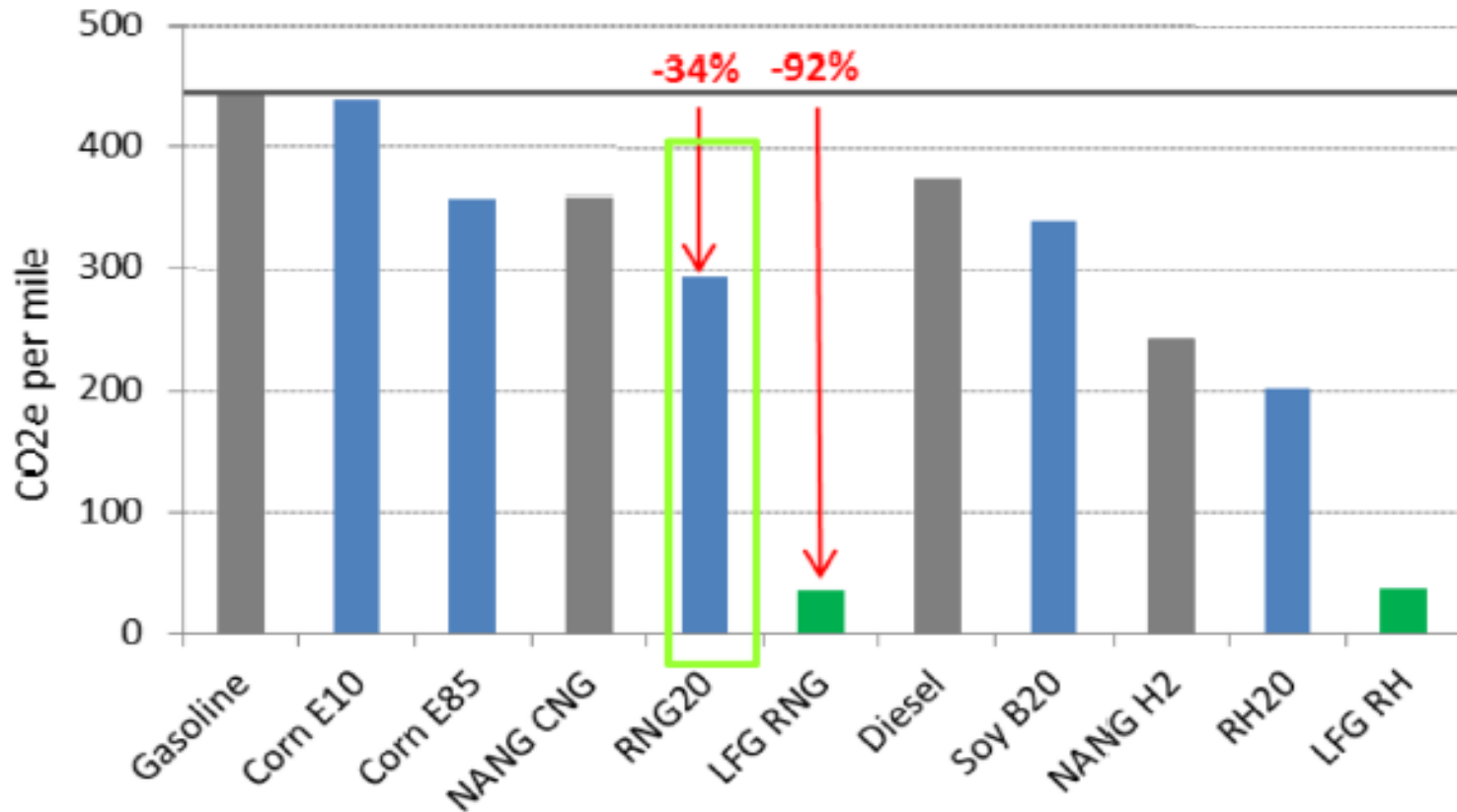
- **Landfill Gas (LFG)**
- **Biogas:**
  - Anaerobic Digestion at Waste Water Treatment Facilities
  - Anaerobic Digestion of Food Waste and Other Organic Waste
- **Biodiesel**
  - Biodiesel from Soybean Oil (available)
  - Biodiesel from Waste Oils (available)
  - Biodiesel from Algae (developing)

# Biomass-based Fuel Technologies for Transportation:

- **Bio-CNG:** Compressed Natural Gas from Biomethane (LFG & Biogas)
- **Bio-LNG:** Liquified Natural Gas from Biomethane (LFG & Biogas)
- **Biodiesel Blending**
  - B2 (2 % biodiesel and 98 % petroleum diesel)
  - B20 (20 % biodiesel and 80 % petroleum diesel)
  - B100 (Pure biodiesel)

# Environmental Benefits:

## Lifecycle Greenhouse Gas Benefits of Conventional and Alternative Vehicle Fuels



Source: Argonne National Laboratory, GREET model

Source: Marianne Mintz & Andrew Burnham, Argonne National Laboratory, *Demonstrating Energy and Greenhouse Gas Benefits of Renewable Natural Gas*

# Format:

- Speakers will present 7-9 minutes
- I will pose 2 questions
- Q&A with the audience

# Question 1:

- Issues and challenges for wide spread commercialization applications:
  - Fuel availability, infrastructure
  - Technical Issues
  - Economic issues
  - Regulatory issues

# Question 2:

- **Opportunities and Recommendations:**