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:

Lifecyle 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: