



ARPA-E Natural Gas Vehicles Workshop

Overview

1/26/2012

Natural Gas Vehicles and Infrastructure: Chicken and Egg

1. We seek **Technology Breakthroughs** that improve the prospects for BOTH vehicles and infrastructure
2. Mitigate need for light duty infrastructure through at-home refueling

High Level NG Vehicle Payback Period and Cost Targets

Long Haul Truck: 2 year payback (for rapid commercial adoption)

- 60,000 mi/yr
- 6 mpDGE
- \$1.50/DGE fuel savings vs diesel
- ~**\$30k** price differential NG vehicle over diesel vehicle

Personal Vehicle: 5 year payback (same as car loan)

- 12,500 mi/yr
- 25 mpGGE
- \$2/GGE fuel savings vs gasoline
- **\$4-5k** price diff. NG vehicle + home refueling unit (installed)

Infrastructure: Reduces capex fraction of fuel cost, more fueling stations, less onboard storage needed

Some Topics Not For Discussion

In the interest of time, the following topics will not be discussed:

1. Regulations, policies and subsidies
2. Renewable natural gas
3. Demonstration projects with existing technologies

Workshop Structure

Components

- Tanks
- Engines
- Compressors
- Sorbents

Morning Breakouts

Applications

- Passenger Vehicles
- Retrofits
- Heavy Duty Vehicles
- Fueling Systems

Afternoon Breakouts

ARPA-E NG Vehicles Workshop Agenda

7:30 AM – 8:00 AM	Continental Breakfast
8:00 AM – 8:15 AM	Welcome and Opening Remarks (Eric Toone, ARPA-E)
8:15 AM – 8:30 AM	Workshop Overview and Objectives (Team NG, ARPA-E)
8:30 AM – 9:15 AM	Mike Gallagher, Natural Gas Chair, NPC Future Transportation Fuels Study
9:15 AM – 10:00 AM	Neel Sirosh, CTO, Quantum Technologies, Pressure Vessels
10:00 AM – 10:15 AM	Coffee Break, Report to Breakouts
10:15 AM – 12:15 PM	MORNING BREAKOUT

ARPA-E NG Vehicles Workshop Agenda

12:15 PM – 12:45 PM

Lunch and Networking

12:45 PM – 1:15 PM

**Lunch Presentation: Pedro Santos,
CEO, Oscomp, Compressors**

1:15 PM – 1:45 PM

Breakout Reports

1:45 PM – 2:00 PM

Coffee Break Report to Breakouts

2:00 PM – 4:00 PM

AFTERNOON BREAKOUT

4:00 PM – 4:15 PM

Coffee Break

4:15 PM – 4:45 PM

Breakout Summary

4:45 PM – 5:00 PM

Wrap Up

5:00 PM – 6:00 PM

Networking