

NEXT GENERATION

NATURAL GAS VEHICLE PROGRAM

*A crucial solution
to the nation's
increasing need
for high-quality,
advanced natural
gas trucks.*



www.ctts.nrel.gov/ngngv



Why the NNGV Program Is Needed

The steady increase in the number of vehicles on our roads and the number of miles driven are pushing an ever-increasing demand for oil imports. Highway transportation alone is responsible for more than half the nation's oil demand. At the same time, worldwide oil reserves, which are often located in volatile countries, leave the United States vulnerable to disruptions in oil supply. The steady increase in vehicles also contributes to degrading air quality in many of our cities and to increasing levels of greenhouse gases in the atmosphere.

Natural Gas Vehicles Are Crucial to the Solution

The U.S. Department of Energy's (DOE) Office of Transportation Technologies (OTT), is responding to these national concerns. OTT has identified the development of next-generation natural gas vehicles as a strategy to reduce oil imports, vehicle pollutants and greenhouse gases. Natural gas is a clean-burning, abundant, domestically available fossil fuel that is considered by many to be the vehicle fuel of choice in the long-term transition to a more sustainable energy future. Natural gas (in both compressed and liquefied forms) is also a promising alternative vehicle fuel in terms of cost competitiveness, vehicle performance, and low emissions of regulated pollutants.



UPS delivery van powered by compressed natural gas (CNG)



Working Group participants were actively involved in the development of the Program at the first meeting in Chicago, IL, May 2000.



The Next Generation Natural Gas Vehicle Program

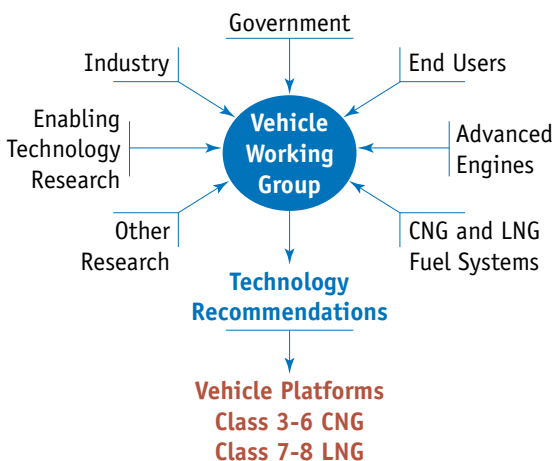
Because medium- and heavy-duty vehicles burn more fuel and emit more pollution per mile than other vehicles, OTT is initiating the NGNGV Program to develop commercially viable medium- and heavy-duty natural gas vehicles. These new vehicles will incorporate advanced alternative fuel vehicle technologies that were developed by DOE and others. Two vehicle platforms—a Class 3-6 compressed natural gas vehicle (CNG) and a Class 7-8 liquefied natural gas vehicle (LNG)—have been identified. Because of its extensive experience with alternative fuel vehicles, OTT has selected the National Renewable Energy Laboratory to lead this development effort.

Program Strategy

Commercial success of next-generation medium- and heavy-duty natural gas vehicles will require that the vehicles be economically attractive, have

a broad customer base, and be supported by a stable fueling and maintenance infrastructure. The development of these vehicles is based on a three-element strategy involving active participation by key stakeholders:

- 1. Build industry and market support** through
 - a. Interactive workshops in non attainment areas to identify the most critical vehicle platforms needed.
 - b. Meetings with industry stakeholders to obtain valuable investments, commitments, and insights.
- 2. Design, develop, and evaluate prototype vehicles with the support of an advisory Vehicle Working Group.** The Vehicle Working Group or “VWG” consists of key representatives from the natural gas industry, original equipment manufacturers and suppliers, national laboratories, government agencies, and other stakeholders. **The input from the Working Group will lead to the development of the next-generation natural gas vehicles.** Let us know if you would like to become a member of this dynamic group!
- 3. Coordinate enhancement of the fueling and maintenance infrastructure.** A stable and reliable fueling infrastructure and a highly responsive maintenance and field support program are needed to successfully deploy and market an alternative fuel.



Program Vision and Goals for the Future

Develop one new medium-duty (Class 3-6) compressed natural gas vehicle and one new heavy-duty (Class 7-8) liquefied natural gas vehicle that will be available in 2004.

These vehicles will

- Advance the DOE natural gas and heavy vehicle technologies.
- Implement advanced engine technologies.
- Meet the exhaust emission standards for 2007.
- Represent a significant step-change in natural gas vehicle technology.
- Be fully competitive with diesel vehicles in performance and life-cycle costs.
- Be technically and commercially viable.
- Help nonattainment areas reduce pollutant emissions from vehicles.

We Need Your Help!

The development of two prototype next-generation natural gas vehicles is challenging, no matter how much time is available. Designing, prototyping, testing, and demonstrating these two vehicles by the end of FY 2004 is particularly ambitious. We need your help to achieve this goal. Here are a few ways you can get involved:

- ✓ Participate in the Vehicle Working Group (attend the next meeting in early 2001 in Los Angeles, CA).
- ✓ Identify potential customers.
- ✓ Give us your insight into technology options and customer needs.
- ✓ Spread the word about the NGNGV Program.

Here's how to help

Visit www.ctts.nrel.gov/ngngv, provide your input on-line, and add your name to the Program distribution list.

Workshop Participants at the First NGNGV Meeting, May 2000, Chicago, IL

Original Equipment Manufacturers and Vehicle Packagers

Cummins Engine Company
FAB Industries, LLC
Ford Motor Company
Freightliner Corporation
John Deere Power Systems Group
Mack Trucks Inc.
Orion Bus Industries
PACCAR Technical Center

Fleet Operators

United Parcel Service

Industry/Trade Associations

American Trucking Association
Natural Gas Vehicle Coalition

Funding Partners

California Energy Commission
GRI
South Coast Air Quality Management District
U.S. Department of Energy

Utilites and Fuel Distributors

KeySpan Energy
Pacific Gas and Electric Company
Southern California Gas Company

Equipment Suppliers

CHART-MVE
Lincoln Composites
Pressed Steel Tank

National Laboratories and Research Groups

Argonne National Laboratory
Brookhaven National Laboratory
Idaho National Engineering and Environment
Laboratory
National Renewable Energy Laboratory
Oak Ridge National Laboratory

Industry Research Groups, Consultants, and University Groups

Arthur D. Little, Inc.
ASG Renaissance
Battelle
BusPlan
Institute of Gas Technology
Southwest Research Institute
The Research Partnership
West Virginia University