

**HCR**

**12**

HOUSE COMMITTEE REPORT

(9) [Redacted]  
Date Referred: February 10, 1994

FURTHER REFERRAL [Redacted] Transportation Finance

Date of Committee Action: 3/4/93

The RESOURCES Committee considered: HCR 12

HOUSE CONCURRENT RESOLUTION NO. 12 USE OF NATURAL GAS IN MOTOR VEHICLES

Relating to the use of natural gas as a motor vehicle fuel in Alaska.

RECOMMENDATIONS:

be replaced with CS HCR 12 (O & G)  the same title  a new title

have attached amendments(s)

do pass

do not pass

no recommendations

individual recommendations

additional referral to the \_\_\_\_\_ Committee

ADOPTS: \_\_\_\_\_ letter of Intent

ATTACHES NEW FISCAL NOTE(S): (Dept)

APPROVES PREVIOUS: (Dept/Date)

fiscal impact \_\_\_\_\_

fiscal note(s) \_\_\_\_\_

zero fiscal note \_\_\_\_\_

zero fiscal note(s) DEC / 2-14-94

SIGNING DO PASS	DP	OTHER RECOMMENDATIONS	DNP	NR	AM
Bill Hudson Hudson	✓				
Robert Carney Carney	✓				
Robert Green Green	✓				
James James James	✓				
David Finkelstein Finkelstein	✓				
Paul Davies Davies	✓				
Gordon Mulder Mulder	✓				
John Bundel Bundel	✓				
W. Williams Williams	✓				

W. Williams  
CHAIRMAN'S SIGNATURE



## Representative David Finkelstein

SPONSOR STATEMENT  
HCR 12

A resolution relating to the use of natural gas as a motor vehicle fuel in Alaska.

As the nationwide drive toward alternative fuel use accelerates, Alaska's progress appears to be stalled. Yet, our huge, underused natural gas reserves can be put to very beneficial use in fueling motor vehicles, fueling our economy, and reducing pollution.

Currently, natural gas is used in Alaska for electrical generation, heating, and cooking. The resource would be more fully exploited if it were marketed to fuel the approximately 120,000 vehicles operating in southcentral Alaska, where natural gas is widely available.

Alaska's high-quality natural gas is a very viable fuel for motor vehicles. Rich in methane and high in octanes, it creates 90% less health-threatening carbon monoxide than gasoline. The persistent problems in controlling CO emissions in Anchorage and Fairbanks could be solved if more motorists there switched to natural gas.

Using natural gas as a motor fuel would help to eliminate the leaking underground storage tank problems inherent to gasoline and diesel fuels, because if natural gas leaks, it simply dissipates into the atmosphere. It produces significantly lower levels of harmful pollutants such as benzene than do gasoline and diesel vehicles.

Motorists--especially truckers--would save money by using natural gas, since it is much less expensive than gasoline or diesel, and necessitates less maintenance. Natural-gas vehicles have been in use in Alaska for many years, and employ proven technology.

Soon, federal laws will mandate alternative-fuel use and impose much stricter emission standards. It makes sense to anticipate such requirements by drawing on and developing our own rich resources.

This resolution encourages federal, state, municipal, and private fleet operators in Alaska to use natural-gas cars, trucks, and buses, and it encourages the rapid development of natural-gas fueling stations.



*Department of Transportation  
and Public Facilities*

# POSITION PAPER

BILL NO: HCR 12

APPROVED: 

TITLE: Use of Natural Gas in Motor  
Vehicles

DATE: March 8, 1993

DOT&PF supports and encourages the passage of this resolution. In partnership with the Department of Environmental Conservation (DEC), DOT&PF has actively supported and encouraged the use of natural gas as an automotive fuel, including sponsoring a conference on this topic in December, 1992. The two departments are now embarking on the formation of a joint government-industry panel to address what actions are needed to foster an increased supply and demand of natural gas as a motor vehicle fuel for Alaskan fleet vehicles and the general public.

Aside from our enthusiastic support for this resolution, we would like to offer some friendly amendments.

An additional benefit to Alaska in the development of natural gas as an automotive fuel is the presence of the Phillips Petroleum natural gas liquification plant at Nikiski. It provides an opportunity to economically transport natural gas to locations in the state not presently served by natural gas pipelines. Thus the expanded development of a refueling infrastructure is not geographically bound by the present pipeline system.

We, therefore, recommend an additional "whereas" clause to the effect:

"Whereas the presence of a natural gas liquification plant at Nikiski would allow for the economic shipment of natural gas to regions of the state not currently served by natural gas pipelines."

*For Further Information contact Katy McHugh at 465-3900.*

BILL NO: HCR 12

TITLE: Use of Natural Gas in Motor Vehicles

DATE: March 8, 1993

A further benefit of natural gas is that it is readily suited to heavy duty engines, including highway trucks, which may be facing significant fuel cost increases if the state is not granted an exemption from the low-sulphur diesel fuel requirements of the Clean Air Act. This benefit of natural gas could be addressed with the following clause:

"Whereas natural gas could benefit the commercial motor carrier industry through the availability of reliable, inexpensive fuel which will meet the pending low-sulphur requirements of the Clean Air Act."

A final recommended clause might address the reliability aspects of natural gas in Arctic conditions:

"Whereas natural gas is a proven performer in the Arctic conditions of Alaska having been in use in the North Slope Borough for more than 10 years on a year-round basis."

Finally, in view of the role that might be played by the commercial motor carrier industry, the Phillips Petroleum liquification plant at Nikiski and the Department of Environmental Conservation, I would recommend the addition of the following to the "Copies" paragraph at the end of the resolution:

Mr. Frank Dillon, Executive Director, Alaska Trucking Association  
Mr. Roy Lyons, Kenai Region Manager, Phillips Petroleum  
Honorable John Sandor, Commissioner, Environmental Conservation

# FISCAL NOTE

STATE OF ALASKA  
1994 LEGISLATIVE SESSION

BILL NO. CS HCR 12 (O&G)

Revision Date: \_\_\_\_\_  
 Title: A Resolution Relating to the Use of  
Natural Gas in Alaska  
 Sponsor: Representative Finkelstein  
 Requestor: House Oil & Gas Committee

Department Affected: Environmental Conservation  
 BRU: Environmental Quality  
 Component: Air Quality Management

COMPONENT SERIAL NO. 1428

Expenditures/Revenues:

(Thousands of Dollars)

	FY 95	FY 96	FY 97	FY 98	FY 99	FY 00
<b>OPERATING EXPENDITURES</b>						
PERSONAL SERVICES	0.0	0.0	0.0	0.0	0.0	0.0
TRAVEL	0.0	0.0	0.0	0.0	0.0	0.0
CONTRACTUAL	0.0	0.0	0.0	0.0	0.0	0.0
SUPPLIES	0.0	0.0	0.0	0.0	0.0	0.0
EQUIPMENT	0.0	0.0	0.0	0.0	0.0	0.0
LAND&STRUCTURES	0.0	0.0	0.0	0.0	0.0	0.0
GRANTS,CLAIMS	0.0	0.0	0.0	0.0	0.0	0.0
MISCELLANEOUS	0.0	0.0	0.0	0.0	0.0	0.0
<b>TOTAL OPERATING</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>

CAPITAL EXPENDITURES	0.0	0.0	0.0	0.0	0.0	0.0
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CHANGE IN REVENUES ( )	0.0	0.0	0.0	0.0	0.0	0.0
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FUND SOURCE

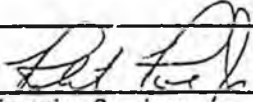
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1003 GF Match	0.0	0.0	0.0	0.0	0.0	0.0
1004 GF	0.0	0.0	0.0	0.0	0.0	0.0
1005 GF/Program Receipt	0.0	0.0	0.0	0.0	0.0	0.0
1006 GF/MHTIA	0.0	0.0	0.0	0.0	0.0	0.0
Other	0.0	0.0	0.0	0.0	0.0	0.0
<b>TOTAL</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>

Estimate of any current year (FY94) cost: \$ \_\_\_\_\_

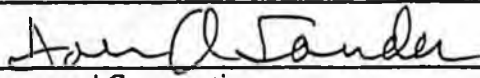
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FULL-TIME	0.0	0.0	0.0	0.0	0.0	0.0
PART-TIME	0.0	0.0	0.0	0.0	0.0	0.0
TEMPORARY	0.0	0.0	0.0	0.0	0.0	0.0

ANALYSIS: (Attach a separate page if necessary.)

Prepared by: Bob Poe, Director   
 Division: Information & Administrative Services

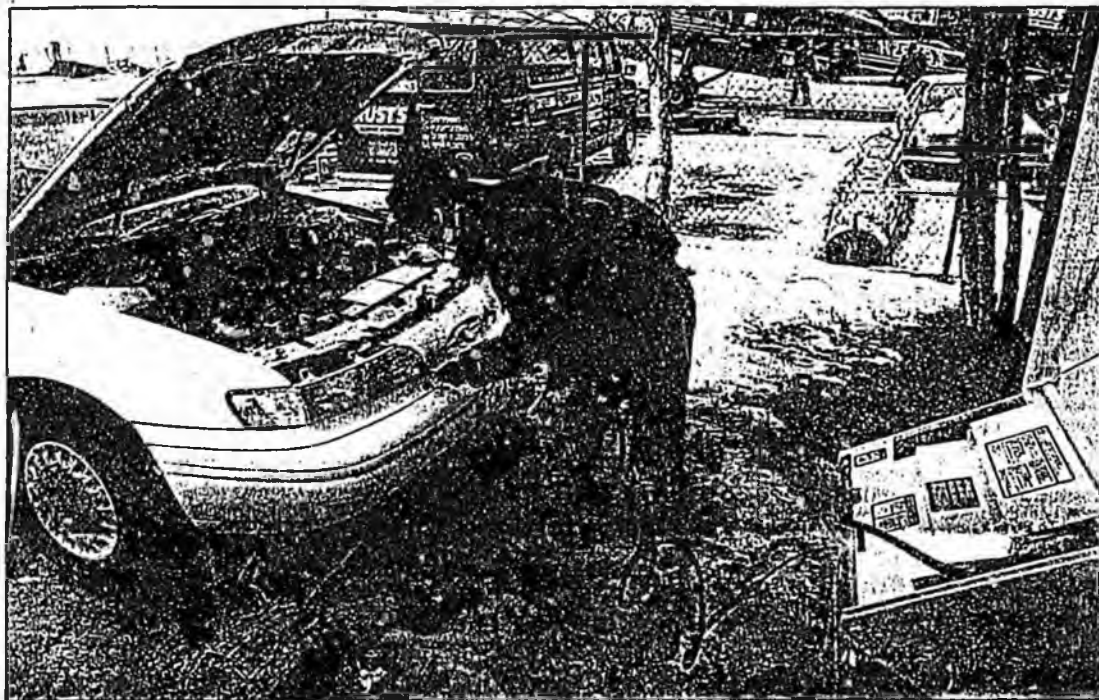
Phone: 465-5010  
 Date: 2/14/94

Approved by Commissioner:   
 Agency: Department of Environmental Conservation

Date: 2/14/94

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BOB HALLIKEN / Anchorage Daily News

Diana Hotkis, procurement specialist for the state department of transportation, demonstrates the overnight refueling.

## State tries to set example by driving with natural gas

By HUGH CURRAN  
Daily News reporter

2/7/94

Ken Langel knew he had to floor it and make the big van zoom.

"See? Notice any difference?" Langel asked as the cavernous white Dodge and its natural gas-sipping engine roared to life and raved down Alcraft Drive on the banks of Lake Hood.

Langel knows that before Alaskans will accept compressed natural gas-powered cars and trucks as another option to consider on the showroom floor, they'll have to first be convinced how familiar and routine the cleaner-burning fuel can be.

"You don't need to know one thing different to drive one of these," he said.

As manager of the 2,500-vehicle fleet for the state Department of Transportation and Public Facilities, Langel and department commissioner Bruce Campbell see compressed natural gas-fueled vehicles as a way to cut down on the fleet's contribution to Anchorage's carbon monoxide problems. Introduce the idea to the public and blaze the trail for widespread, everyday use by residents.

The department took delivery of five vehicles last month to test the practicality and driver reactions to the alternative fuel. A Ford Taurus sedan, Chevy Blazer and Chevy van were converted locally to use either natural gas or regular gas at the flip of a switch. The Dodge Van and Dodge mini-van that the agency plans to buy next month use only compressed natural gas and come that way from the factory.

Langel said it's the recent availability of such factory-made natural-gas vehicles — along with growing air-quality concerns in Anchorage after years of federal clean-air standard violations — that made the time right to try natural gas.

"Compressed natural gas vehicles have been around for 20 or 30 years; it's not like a new rocket science," Langel said.

An Anchorage hotel has been using a natural gas van for the 10 years.

"But previously, there were performance problems with carbureted engines that fuel injection has solved. The tanks and the available pressure weren't as



BOB HALLIKEN / Anchorage Daily News

Ken Langel, fleet manager, with the natural-gas powered van.

Please see Page C-2, CARS

## CARS: State goes natural gas

Continued from Page C-1

good before, either. We also finally have a wide selection of factory-made vehicles and a new environmental awareness that just wasn't there 10 years ago."

A 1990 test by the American Gas Association showed vehicles using compressed natural gas release less than a quarter of the carbon monoxide emitted by gasoline engines.

Based on talks with Lower 48 fleet managers who have used compressed gas for several years, Langel hopes to see miles per gallon equal to or greater than gasoline vehicles and the rough equivalent of 80 to 90 cents per gallon for the fuel.

Langel said another hoped-for advantage is reduced maintenance costs and longer engine life because the fuel is less likely to leave damaging deposits in the engine and on spark plugs.

The agency spent \$2,500 to \$4,500 to convert its three vehicles from gasoline to natural gas, Langel said. The factory models cost \$3,500 to \$5,000 more than gasoline vehicles. He said greater production should translate into lower costs.

The vehicles look, sound and feel no different from their gasoline cousins. The

only telling sign in the Taurus was something that looked like an oxygen tank under the hood and a small metal plug for refueling that sticks out of the grill.

Refueling is currently handled at the Lake Hood office through a compact pump that compresses the natural gas used in the department's building. Langel said the pump refuels an empty vehicle in six to 10 hours. The only commercial compressed natural gas station in Anchorage refills at almost the same speed as regular gasoline.

Langel said the availability of refueling stations will determine whether natural gas vehicles will ever see wide use.

"To really make a dent in air pollution you're going to have to get the public involved, and that can only happen if the refueling infrastructure is there," Langel said. "You'd need at least four stations in Anchorage, one in the Valley and one in Kenai."

Langel said to promote the building of such an infrastructure, local, state and federal agencies — as well as private companies such as Alaska Cab, Enstar, the Alaska Railroad and some tour companies — are putting the final touches on a group tentatively called the Alaska Compressed Natural Gas User's Coalition.

## FACTS TO KNOW

Natural gas has an octane rating of 130.

Natural gas burns cooler than propane.

Natural gas remains a vapor when compressed.

Natural gas does not contaminate motor oil.

Natural gas starts more easily in cold weather.

Natural gas is not imported.

Natural gas must be odorized.

We can help support America by operating  
our fleets on natural gas.

SHOULD  
YOU USE  
NATURAL GAS  
AS YOUR  
MOTOR  
FUEL?



2745 West Walnut Lawn, Springfield, MO 65807, 887-4773, 1-800-543-3855



HERE ARE MANY REASONS  
TO USE NATURAL GAS  
INSTEAD OF GASOLINE TO  
FUEL YOUR VEHICLES.

The following are some of the most frequently asked questions:

**Q** Is natural gas safe as a motor fuel?

**A** Yes! Natural gas is safe. Here are some reasons why:

At 1100°, the ignition temperature of natural gas is approximately 500 F° higher than gasoline.

There are strict flammable limits for commercial natural gas. If the mixture is leaner than 4% or richer than 14%, natural gas will not ignite.

Natural gas is lighter than air. If a leak occurs, the gas rises in the air to the highest containment level and dissipates. When gasoline, propane and other liquid fuels leak, they often form puddles or settle into storm drains. Natural gas is even safe to use in tunnels and other below-grade facilities.

**Q** Are natural gas storage cylinders safe?

**A** Unlike a gasoline fuel tank, natural gas fuel cylinders are *at least* 3/8" thick, depending on the manufacturer's specifications. All natural gas cylinders are constructed to strict D.O.T. regulations.

**Q** What type of vehicle can be converted to natural gas power?

**A** Vehicles with either carbureted or fuel injected gasoline engines can utilize natural gas, including buses, trucks, cars, forklifts and stationary engines.

**Q** What happens to the equipment when a converted vehicle is retired?

**A** The equipment can be reinstalled on a new

vehicle several times with minor modifications. Thousands of conversion kits sold in the 70s are still in operation on new vehicles today.

**Q** How long does it take to fill a vehicle?

**A** A "Quick Fill System" only takes a few minutes. A "Time Fill System" can automatically fill many vehicles overnight while unattended.

**Q** How many vehicles can be filled with a "Time Fill System?"

**A** The refueling station can be sized to fill any size fleet in a given time span.

**Q** Who can install the equipment?

**A** We can install the equipment for you or train your mechanic to install it.

**Q** How much will it cost?

**A** Prices vary for each situation; however, after asking you a few questions about your fleet, fuel consumption and parking arrangements, a firm price can be quoted.

**Q** How long does it take to recoup my investment?

**A** Depending on the fuel consumption of the vehicles converted, the pay back period is approximately 30 to 36 months. A higher mileage vehicle has a faster pay back period.

**Q** Does the refueling station need to be in a building or on a skid?

**A** No! This equipment is designed to be used in any type of weather. An enclosed building requiring thousands of dollars worth of additional equipment is not necessary. A simple shelter over the equipment, enclosed on three sides, is needed for maintenance personnel protection.

**Q** What happens if the vehicle runs out of natural gas?

**A** A fuel selector switch mounted on the dash allows the driver to change from natural gas to gasoline.

**A**s national concern over the environment and energy security increases, more and more vehicles will be running on alternative fuels. Natural gas — the same energy that has safely and comfortably heated homes and cooked meals for more than 100 years — will be used in many of our cars, trucks and buses. Natural gas has multiple advantages over other transportation fuels: it's cleaner, it costs less, it's readily available throughout the country, it's a domestic fuel and it has a proven safety record.

Here are answers to the questions most frequently asked about natural gas vehicles (NGVs):

**Q: What kind of vehicles can run on natural gas?**

**A:** Almost all kinds of vehicles, from passenger cars and pickup trucks to school buses and garbage trucks, can run on natural gas. NGVs can be manufactured from the ground up, or existing gasoline or diesel vehicles can be converted by modifying the fuel system.

**Q: Is natural gas a safe vehicle fuel?**

**A:** Natural gas has an excellent safety record. There are two primary reasons: the structural integrity of the NGV fuel storage system and the physical properties of natural gas. The tanks used to store the natural gas are made of forged steel or fiberglass-reinforced aluminum one-half to three-quarter inches thick. They can withstand both crashes and heat far better than a standard gasoline tank, which is made of thin sheet metal. In addition, the natural gas tank actually adds to the structural integrity of the vehicle.

NGVs have "closed" fuel systems, which helps eliminate the evaporation characteristic of liquid fuel systems. In the unlikely event that a leak occurs in an NGV, the natural gas dissipates harmlessly into the atmosphere because it is lighter than air.

In addition, natural gas has a high ignition temperature. It ignites at about 1,200 degrees Fahrenheit, compared with about 600 degrees for gasoline. Natural gas also has a very narrow range of flammability; that is, in concentrations in air below about 5 percent and above about 15 percent, natural gas will not burn. The high ignition temperature and limited flammability range make accidental ignition or combustion of natural gas unlikely.

**Q:** Does the United States have enough natural gas to use in vehicles?

**A:** The United States has a huge natural gas resource base. The U.S. Department of Energy estimates that, with conventional supplies alone, the nation has at least a 60-year supply of natural gas at today's consumption rates. If so-called nonconventional supplies — some of which are already being produced — are included, the total natural gas resource base can provide more than a 200-year supply. Driving 8 million to 10 million NGVs every year would use about 1 trillion cubic feet (Tcf) of gas — less than 6 percent of our current annual natural gas consumption of 19.4 Tcf.

**Q:** Is natural gas readily available?

**A:** The natural gas transportation and storage network, a 1.2 million-mile underground pipeline system, is already in place. All 50 states and all major metropolitan areas have access to gas service.

In addition to its extensive distribution system, natural gas has another key advantage — it's primarily a domestic fuel. About 92 percent of the natural gas used in the United States this year will be produced in the United States. Almost all the rest will come from Canada.

**Q:** What are the environmental benefits of NGVs?

**A:** Vehicles fueled with natural gas produce significantly lower levels of harmful pollutants than gasoline or diesel vehicles. For example, NGVs reduce emissions of carbon monoxide by 90 percent and reactive hydrocarbons (which play a major role in the formation of ground-level ozone, the principal ingredient of smog) by 85 percent. Natural gas contains no particulates, such as those associated with diesel fuel, and also reduces emissions of carbon dioxide, the principal "greenhouse" gas.

**Q:** How do the costs of gasoline, natural gas and other alternative fuels compare?

**A:** Natural gas as a vehicle fuel actually costs less today than conventional gasoline, and much less than methanol. The price of natural gas sold for vehicle use ranges from 65 cents to 79 cents for the energy equivalent of a gallon of gasoline. The comparable price of methanol (M85, priced on the West Coast) is \$1.43 per gallon equivalent versus \$1.23 for gasoline.

In addition, on-the-road experience with NGVs shows that standard maintenance can be reduced, because natural gas is a very clean-burning fuel.

**Q:** How much does an NGV cost?

**A:** It costs from \$2,500 to \$3,500 to convert a car to run on natural gas. Costs are higher for larger vehicles and vary depending on the number of fuel tanks installed. For most vehicles, installation of a natural gas fuel system takes only one or two days. Modified vehicles may run on either natural gas or gasoline since the liquid fueling system remains intact.

"Dedicated" NGVs run only on natural gas and cost slightly more than gasoline or diesel vehicles because of the cost of the sturdy storage tanks. The U.S. Department of Energy estimates that mass-produced NGVs will have a price tag about \$800 higher than conventional vehicles.

**Q:** Is anyone currently manufacturing original-equipment NGVs?

**A:** All the major U.S. automobile, truck and bus manufacturers are building and road-testing prototype vehicles that run on natural gas. For example, the GMC Truck Division of General Motors Corp. is building dedicated natural gas light-duty pickup trucks, and Chrysler Corp. is building natural gas vans. Meanwhile, Ford Motor Co.

is field-testing vans, pickups and sedans. United Parcel Service (UPS) is sponsoring development of a natural gas engine for its familiar brown delivery trucks, and a natural gas engine for school buses, made by Tecogen Inc., has been certified by the California Air Resources Board (CARB). The school bus engine is the first alternative-fuel engine to get CARB approval. Heavy-duty engines are under development by Cummins Engine Co., Hercules Engines Inc. and Detroit Diesel Corp. The Flexible Corp. and Bus Industries of America are making natural gas mass-transit buses.

### **Q: How does an NGV work?**

**A:** The only major difference between a gasoline vehicle and an NGV is the fuel system. For use in an NGV, natural gas is compressed to approximately 3,000 pounds per square inch and stored in high-pressure steel or aluminum tanks installed in the rear or the undercarriage of a vehicle. When the engine requires fuel, the natural gas leaves the tanks and travels through a high-pressure fuel regulator located in the engine compartment. The natural gas enters the carburetor or is injected at atmospheric pressure through a specially designed natural gas mixer, where it is combined with air.

NGVs can be designed to operate in three different modes. A vehicle that runs solely on natural gas is called a "dedicated" vehicle. Vehicles that operate on either natural gas or gasoline at the flip of a switch are "bi-fuel" vehicles. Those that operate on natural gas and diesel fuel at the same time are "dual-fuel" vehicles. Best performance is achieved when a vehicle is designed to run only on natural gas, because the engine can then be set to take full advantage of the fuel's high octane, which exceeds 120. Bi-fuel vehicles typically are equipped to switch automatically to gasoline when the natural gas tank reaches empty. In addition, a simple electronic device is usually added to adjust the engine's timing when a switch is made from one fuel to the other.

### **Q: How are NGVs fueled?**

**A:** The commercial dispenser that fuels NGVs looks a lot like a gasoline pump. A small hose connects easily to the vehicle's fuel system with a coupling device. When the tank is full, the dispenser automatically shuts off.

NGVs are fueled on a "quick-fill" or "timed-fill" basis. Quick-fill dispensers fuel a vehicle in about five minutes. Timed-fill stations take longer, depending on the number of vehicles being served at one time and the size of the fueling unit. Timed-fill stations are popular with operators of vehicle fleets that return to a central location each night, where the vehicle can be hooked up to a natural gas dispenser overnight or for a specified time period and even fueled unattended.

Home dispensers are also available. They are smaller than commercial dispensers, about the size of an air conditioning compressor, and are connected directly to the home's natural gas line. Home fueling appliances use the timed-fill method, so vehicles usually are fueled overnight.

### **Q: How many NGV fueling stations are there in the United States?**

**A:** By early 1992, nearly 500 fueling stations for NGVs were operating in 43 states and the District of Columbia. More than one-half of the stations are open to the public or available through special arrangements with the operator. The rest are used by private fleets. Oil companies involved in public fueling stations include Amoco, Exxon, Mobil, Texaco, Unocal, FINA, Shell, Chevron, Conoco and Phillips 66.

### **Q: Are NGVs used in other countries?**

**A:** Natural gas as a vehicle fuel has a long-established record in Europe, Canada, New Zealand and Australia. Italy has been using natural gas to power vehicles since

the 1940s, and has about 300,000 NGVs and 240 filling stations.

**Q: How will NGVs help cities meet the requirements of the Clean Air Act Amendments of 1990?**

**A:** The Clean Air Act Amendments of 1990 have much tougher vehicle emissions standards, beginning with model-year 1994. NGVs can already meet these standards.

In 22 urban areas, the new law will require all fleets of 10 or more vehicles that are capable of central fueling to purchase alternative-fuel vehicles, in phased-in percentages beginning in model year 1998. Legislation being considered by Congress would move up that date and broaden the concept to include most major urban areas.

In California, the Amendments require that a special pilot program be adopted, involving the mandated production and sale of clean-fuel vehicles — 150,000 vehicles beginning in model year 1996 and growing to 300,000 vehicles in model year 1999 and thereafter.

Finally, an urban bus initiative in the new law is designed to reduce particulate emissions and to encourage the use of clean-fuel buses for mass transit. Natural gas buses are operating successfully in many American cities, are meeting the standards and are emitting virtually no particulates.

**Q: How can NGVs contribute to America's energy security?**

**A:** Although most U.S. economic sectors have diverse energy sources, the transportation sector is currently about 96 percent dependent on oil. The United States is dependent on foreign oil for nearly 50 percent of its energy needs. In 1991, the United States spent \$44 billion dollars to buy imported oil, which is over half the nation's total trade deficit. The best way to increase energy security and reduce the trade deficit — without a

negative environmental or economic impact — is to replace the use of imported oil with domestic natural gas. The most obvious place to begin is in the transportation sector.

**Q: Who is likely to be driving NGVs today and in the near future?**

**A:** Auto, truck and bus fleets are particularly well suited for NGVs, because they can share a central fueling station. Since a national network of public NGV fueling stations is still developing, widespread use of natural gas in privately owned, individual vehicles will come later.

**Q: Where can I get more information on NGVs?**

**A:** For more information on natural gas vehicles, contact:

American Gas Association  
1515 Wilson Boulevard  
Arlington, VA 22209  
(703) 841-8400

## Cherry Creek Schools Compressed Natural Gas (CNG) Program

Cherry Creek School District began converting its buses to CNG ten years ago. This was when clean air, the cost of fuel and environmental issues triggered the District's research on alternative fuels. The district chose CNG because of safety issues and the abundant supply of natural gas.

### Cherry Creek's Experience:

In 1982, when gasoline prices jumped to 95 cents a gallon, unleaded was replacing regular gasoline at the pumps and as concern for the environment was being launched, Cherry Creek began converting 18 of its buses to CNG. As the years passed and CNG technology expanded, 35 more buses were converted.

Today 53 vehicles operate on bi-fuel conversions, 14 performed by Cherry Creek's own mechanical staff. Bi-fuel means the vehicle is equipped with both gasoline and CNG, and can operate on either fuel. The advantage to having both fuel options is flexibility. When the CNG system is down, buses can fuel with gasoline, or on trips they have the capability to run on both gasoline and CNG.

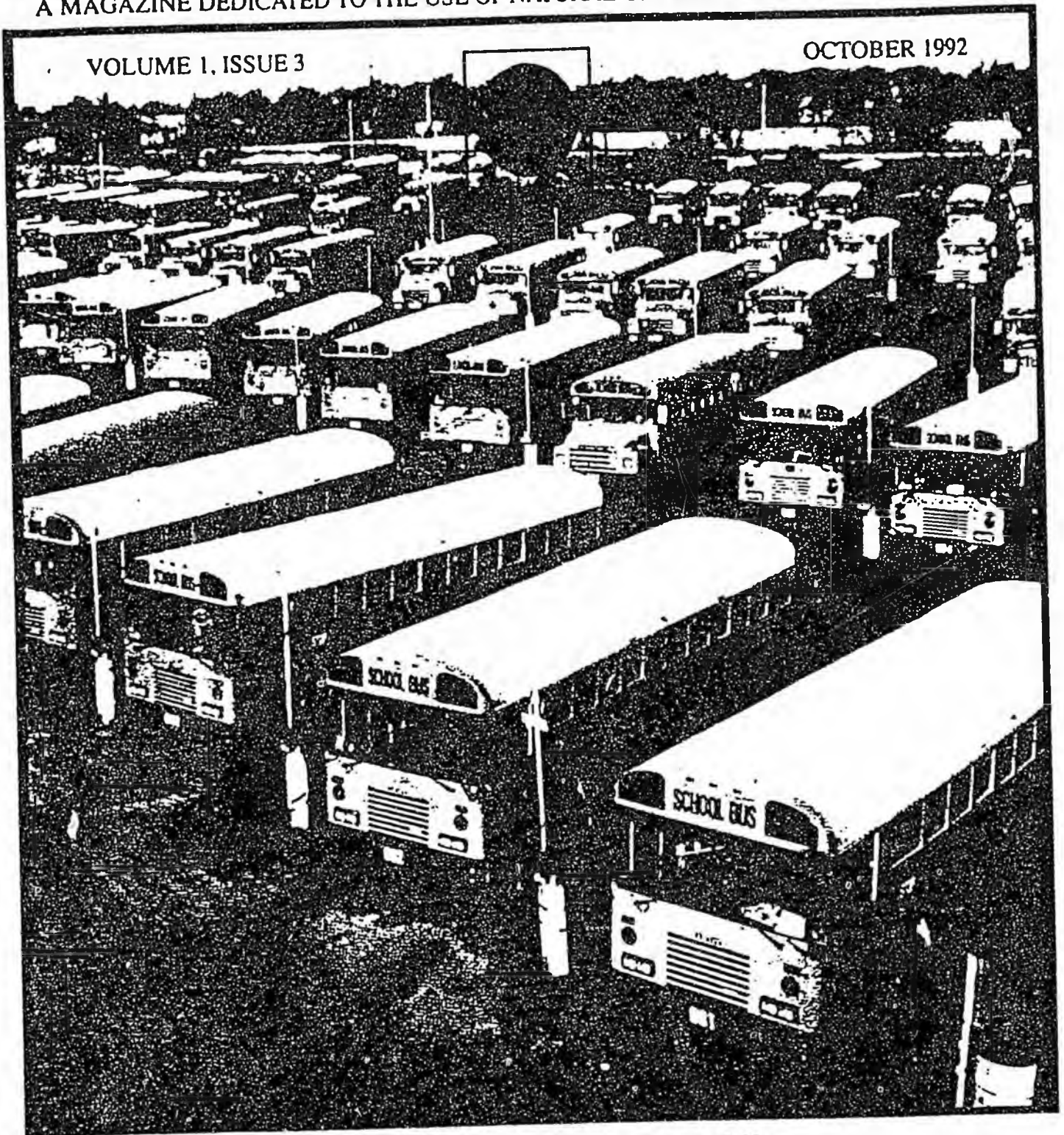
The drivers hardly notice the difference on the newer vehicles, on older vehicles the driver can shift to gasoline when the added power is needed. It should be noted that newer fuel injection systems seem to operate with less problems than carbureted fuel delivery systems.

# NATURAL GAS FUELS

A MAGAZINE DEDICATED TO THE USE OF NATURAL GAS AS A TRANSPORTATION FUEL

VOLUME 1, ISSUE 3

OCTOBER 1992



- Putting Words Into Action: NGVs Go Public
- Alternative Fuels on the Campaign Trail
- Vehicle Fill Pressure Q&A

## Federal Fleet NGV Purchase Plan by State

	1993	1994	1995	1996	1997
Alabama	10	9	13	12	23
Alaska	2	4	7	11	18
Arizona	37	26	42	37	41
Arkansas	1	1	2	2	3
California	760	563	673	666	816
Colorado	108	67	57	120	99
Connecticut	0	0	0	0	0
Delaware	0	0	0	0	0
District of Columbia	93	60	187	172	206
Florida	6	2	5	8	5
Georgia	29	33	28	44	47
Hawaii	2	2	2	4	4
Idaho	10	11	10	21	27
Illinois	25	30	14	19	22
Indiana	2	2	4	4	6
Iowa	6	1	2	2	6
Kansas	4	12	6	6	9
Kentucky	4	10	11	10	22
Louisiana	29	11	45	22	36
Maine	0	0	0	0	0
Maryland	16	26	28	22	35
Massachusetts	14	6	23	33	63
Michigan	1	1	2	2	4
Minnesota	3	9	9	12	21
Mississippi	0	0	0	0	0
Missouri	2	4	6	9	6
Montana	68	61	64	70	64
Nebraska	0	0	4	0	0
Nevada	34	18	23	26	29
New Hampshire	0	0	0	0	0
New Jersey	4	5	15	7	13
New Mexico	14	20	41	41	29
New York	30	16	40	47	94
North Carolina	5	4	6	6	7
North Dakota	3	9	6	14	11
Ohio	1	4	7	2	11
Oklahoma	45	5	6	6	7
Oregon	18	22	48	57	82
Pennsylvania	24	27	31	22	38
Rhode Island	0	0	0	0	1
South Carolina	135	235	229	189	205
South Dakota	5	5	12	3	7
Tennessee	30	6	41	78	176
Texas	44	49	47	50	32
Utah	8	18	13	13	18
Vermont	0	0	0	0	0
Virginia	21	35	23	45	59
Washington	3	6	3	5	12
West Virginia	4	7	1	4	27
Wisconsin	2	4	6	7	13
Wyoming	15	24	14	15	24
Vehicles to be placed	650	1,053	1,298	1,528	2,186
<b>TOTAL</b>	<b>2,327</b>	<b>2,523</b>	<b>3,154</b>	<b>3,473</b>	<b>4,664</b>

Source: Dept. of Energy draft report on alternative fuel vehicle five-year purchase plan

\*\*\*\* AGENDA \*\*\*\*

- 1 HCR 12 USE OF NATURAL GAS IN MOTOR VEHICLES
- 2 SB 238 COASTAL ZONE MANAGEMENT PROCEDURES
- 3 SB 151 OIL & GAS EXPLORATION INCENTIVE CREDITS

\*\*\*\* PARTICIPATING LIDS \*\*\*\*

ANC ANCHORAGE	716 W 4TH. #200	LOCATION STAFF
BAR BARROW	COURTHOUSE #305	LOCATION STAFF
COR CORDOVA	705 2ND STREET	LOCATION STAFF
FBX FAIRBANKS	119 N CUSHMAN ST	LOCATION STAFF
HOM HOMER LTC	126 W PIONEER #4	LOCATION STAFF
* JNU JUNEAU	CAPITOL	LOCATION STAFF
SOL KEN/SOL	34824 KALIFONSKY	LOCATION STAFF

CAP124

PARTICIPANTS IN: ANCHORAGE

ANC

1	CHUCK LANDERS	ANCH ASSEMBLY	TSFY. HCR 12
	PO BOX 196650	ANCHORAGE	AK 99503 (907)562-6050
2	RON COLLINS	MOA FLEET SVC	TSFY. HCR 12
	4333 BERING ST	ANCHORAGE	AK 99503 (907)562-0632
3	STEVEN PORTER	ARCO	TSFY. SB 238
	PO BOX 100360	ANCHORAGE	AK 99510 (907)265-6269
4	KEN FREEMAN	RDC	TSFY. SB 151
	121 W FIREWEED. NO 250	ANCHORAGE	AK 99502 (907)276-0700
5	WALT FURNACE		TSFY. SB 151
	4220 B ST	ANCHORAGE	AK 99503 (907)563-2226

PARTICIPANTS IN: BARROW

BAR

1 MR	TOM LOHMAN	NORTHSLOPEBORO	TSFY. SB 238
	BOX 642	BARROW	AK 99723 (907)852-0350

PARTICIPANTS IN: FAIRBANKS

FBX

1 MR.	JIM HAYNES	DO&G	TSFY. SB 151
	P.O. BOX 107034	ANCHORAGE	AK 99510 (907)762-2592
2 MR.	JAMES MERY	DOYON	OBSV. SB 151
			AK (907)000-0000

PARTICIPANTS IN: HOMER LTC

HOM

1 MR.	DREW SCALZI	KENAI PEN. BOROUGH	OBSV. SB 238
	41685 REDOUBT CIRCLE	HOMER	AK 99603 (907)235-6359

PARTICIPANTS IN: JUNEAU

JNU

1 REP	B WILLIAMS		TSFY. ALL ITEMS
			AK (907)000-0000

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03/04/94

LEGISLATIVE TELECONFERENCE NETWORK

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TCN: 40397

DATE & TIME: 03/04/94 08:15 TO 10:00

10:36:08

STATUS: 6 ADJOURNED

PARTICIPANTS IN: JUNEAU

JNU

2 REP	F CARNEY		TSFY. ALL ITEMS
		AK	(907)000-0000
3 REP	D FINKELSTEIN		TSFY. ALL ITEMS
		AK	(907)000-0000
4 REP	J GREEN		TSFY. ALL ITEMS
		AK	(907)000-0000
5 REP	J JAMES		TSFY. ALL ITEMS

\* PLEASE PRINT + INCLUDE  
COMPLETE MAILING ADDRESS \*



HOUSE RESOURCES COMMITTEE

DATE: 3/4/94

PLACE: Capitol, Room 124

**SUBJECT OF MEETING:**  
 HCR 12 - USE OF NATURAL GAS IN MOTOR VEHICLES  
 SB 238 - COASTAL ZONE MANAGEMENT PROCEDURES  
 SB 151 - OIL + GAS EXPLORATION INCENTIVE CREDITS

NAME	REPRESENTING	BUSINESS/PERSONAL MAILING ADDRESS	ZIP	(H) PHONE	(W) PHONE	DO YOU WANT TO TESTIFY?	WHAT SUBJECT/ WHICH BILL?
ROGER ALLINGTON ✓	DOT & PF	3132 Channel Dr. Juneau	99801		465-6978	(Y) N	SB 238
Paul Rusavewski ✓	State				3562	(Y) N	SB 238
JEFF OTKSEN	DOT & PF				6954	Y N	IF QUESTIONS HCR 12
Boen Gerblula	AG's				6772	Y N	IF QUESTIONS SB 238
						Y N	
						Y N	
						Y N	
						Y N	
						Y N	
						Y N	
						Y N	