SHALE GAS: A CHALLENGE TO THE NATURAL GAS INDUSTRY

An astonishing new assessment of this country’s natural gas resources has emerged since the early nineties. Supplies thought to be diminishing and too limited for transportation use, turn out to be a bonanza! Enormous quantities of natural gas, the cleanest fossil fuel, are contained in shale rock formations that lie deep below more than two dozen states.

The Potential Gas Committee, a group of natural gas experts, estimates that these formations contain some 1,836 trillion cubic feet of gas. Added to previously identified sources, these deposits could provide enough natural gas to last 118 years at current rates of use, and the process for accessing shale gas, “hydrofracking,” is now economically viable.

THE NAT GAS BILL TO BOOST GREEN TRANSPORTATION

By Gail Richardson, VP of Programs

Federal tax credits to lower the cost of natural gas vehicles (NGV’s), fueling stations, and fuel may not sound like ingredients of a clean energy transformation. But in the hands of pioneering local officials and their private sector partners, that is exactly what they can be – and that is why so much is at stake with New Alternative Transportation to Give Americans Solutions (NAT GAS), a bill that Congress is likely to consider later this year on its own or as part of another energy-related bill. (See NAT GAS provisions on page 4).

Three years ago, Smithtown, Long Island, became the first community in the East to require that refuse trucks serving the town shift to natural gas. Neighboring Brookhaven soon followed suit, and Hamilton Township in New Jersey launched a similar strategy last summer. To make the shift all three communities counted on federal tax credits. These credits, created in 2005, reduced the purchase price of new trucks and fueling stations and lowered the ongoing cost of fuel. But if, as slated, these incentive programs expire in 2010, other communities would find it costlier to move essential fleets to natural gas in order to break their oil dependency and reduce their heat-trapping and health-endangering emissions.

NAT GAS would ensure that all these credits remain in place a decade or more, long enough to encourage communities and businesses to undertake multiyear conversions of heavy duty truck and bus fleets to natural gas fuel.

Getting Credit to Pick Up the Pace of Change

Even without tax subsidies, NGVs are economic for high-mileage trucks and buses that can gain back in a few years enough savings on fuel to repay the upfront investment. That natural gas fuel has been less expensive than diesel for most of the decade is shown on the chart above.

The strategy of NAT GAS sponsors is to improve the economics of NGVs to get more vehicles into the market faster, thereby making progress toward national goals of oil displacement, economic security, climate protection, and clean air.

Bill sponsors are strongly bipartisan. They number 140 in the House, and in the Senate they include leaders from both parties, notably Majority Leader Harry Reid, who rarely sponsors a bill. The Democratic Senator from New Jersey, Robert Menendez, introduced the bill last year.

To understand how tax credits work in practice, it helps to think of them as bargaining chits for leveraging both private and public investment. By law, they can be “dealt” only to tax-paying entities to reduce the taxes they pay. However, under NAT GAS, tax-exempt entities like municipalities and school districts could also use credits indirectly to make...
A LETTER FROM THE PRESIDENT
Natural Gas Means Greener Jobs and a Stronger Economy

I have just returned from Waste Expo in Atlanta, the solid waste industry’s annual conference, where I was thrilled to see how interest by refuse haulers in natural gas trucks has escalated since last year. On exhibit was a greatly expanded selection of CNG trucks. Our panel session on alternative fuels was well attended, and my co-panelists, Tony Ciofalo from Clean Energy (CA) and Glen Miller, CEO of Choice Environmental Services (FL) and I fielded a barrage of questions. Many focused on the costs involved in shifting fleets.

Pending legislation, the “NAT GAS” bill, offers a means of reducing these costs. This legislation could put this country on one fast track toward a sustainable transportation future while boosting our flagging economy.

In her feature article on NAT GAS (see page 1), Gail Richardson describes the tax incentives that would enable municipalities and businesses to recover the costs of shifting their fleet vehicles from reliance on foreign oil to domestic natural gas. By targeting the 10 million heavy duty buses and trucks that consume 23% of our on-road fuel, NAT GAS would make a big dent in the $300 billion a year -- $820 million each and every day -- that Americans spend abroad for oil.

Why put billions of US dollars in the pockets of foreign oil producers instead of investing in our own fuel and energy-producing industries and creating “green” jobs here at home? Today’s natural gas technology would enable virtually every heavy duty bus and truck to abandon dependence on oil-derived fuel. Shifting just half of them would keep more than $20 billion at home and create close to a million jobs. Changing just 160,000 of those vehicles would result in 495,000 jobs according to the Association of Western Governors. An important, but less discussed, plus for workers in these new green jobs is that they will not be subjected to the elevated risks of respiratory disease, lung cancer, and hearing loss from loud engine noise that diesel workers face.

What is more – building fleets equipped to burn a gas rather than a liquid fuel will spark development of a brand new industry—producing the renewable form of natural gas, biomethane. Made from organic wastes, biomethane is already in production in Europe and is now putting down roots in this country. With the proposed NAT GAS tax incentives, American cities, too, would be wise to begin accessing how they can turn their expensive garbage disposal problems into a clean fuel solution.

Further, shifting half of our heavy duty vehicles to natural gas would take our country one-sixth of the way toward the goal that the Obama administration set at the Copenhagen global climate talks in December — cutting US carbon emissions by 17% from 2005 levels over a ten year period. While many other green energy strategies are in the works, none could take us so far as fast.

Federal legislative leadership this year will be key in two arenas. The first is putting the NAT GAS incentives in place, enabling municipalities and businesses to green their fleets and control their fuel costs. The second (see Shale Gas article page 1) is establishing the EPA regulations regarding hydrofracking, to ensure that our cleanest fossil fuel is produced in ways that do not jeopardize our air and water resources or public health. Strong federal leadership on these issues can enable our country to take a big step toward a sustainable future.

J.D.U.

A First for Florida!

In 2009 Choice Environmental Services launched in Broward Cy, the first CNG fleet in Florida. According to CEO Glen Miller, “We are excited to be the leading environmentally-friendly waste and recycling company in Florida. We also chose natural gas to reduce our reliance on diesel fuel with its unpredictable prices and because using a domestic fuel is just all around good for America.”

EV ON THE ROAD

Jan. 27 New Jersey Clean Cities Coalition, First General Meeting, 2010, Wall, NJ. “Time to Step Up the Pace of Change.” Opening Address, Joanna Underwood. (See www.energy-vision.org)


April 5 Brooklyn Solid Waste Advisory Board, Brooklyn, NY. “The Potential of Biomethane Fuel.” Presentation, Gail Richardson.

April 12 New Jersey Solid Waste Association of North America, Atlantic City, NJ. “Power to Change: Solid Waste Managers as Leaders in Green Transportation.” Keynote, Gail Richardson.

May 3 Waste Expo, Atlanta, GA. “A New Century: New Fuels.” Speaker, Joanna Underwood. (See President’s letter)

EV IN THE PRESS


Underground reservoirs. Some is reused as fracking fluid brought to the surface and completed. The balance is underground after drilling is completed. The greater availability of natural gas and a cost-effective means of retrieving it sounds like very good news. But there is another side of the story: the impact that hydrofracking may have on air and water quality, land use, and the quality of life for those living near drilling operations.

Water Contamination
In hydrofracking a mixture of water, sand, and chemicals is injected under pressure deep into the shale, cracking it and releasing the entrapped natural gas. The fluid used may contain 200 chemicals or more, including some associated with cancer and endocrine disruption, damage to reproductive health, immune suppression and genetic mutations. Between 40 and 80 percent of this fluid remains underground after drilling is completed. The balance is brought to the surface and stored in large evaporation pits. Some is reused as fracturing fluid at other sites, while the rest is hauled away for treatment and disposal in surface waters or underground reservoirs.

Hydrofracking also brings up water that exists naturally in the shale formations. Released just before the gas flow and captured above ground, this water contains heavy metals, salts, radioactive particles, organic contaminants, and hydrocarbons. Surface spills at some sites have allowed these contaminated fluids to seep into the ground. Colorado, with 30,000 wells, has reported 1,435 spills, a quarter of them contaminating surface water. New Mexico has reportedly experienced 900 incidents. Concerns about water depletion are also growing as the number of wells expands. Although earlier operations used only about 100,000 gallons of water each time a well was fracked, newer processes use between one and two million gallons per fracking. And the same well may be fracked more than once. Assessing the cumulative impact of wells on water resources will be crucial, especially in western states where water scarcity is already an issue.

Quality of Life
The effect of hydrofracking on the quality of life in rural communities is another issue. Drilling has required cutting land for use by hundreds of heavy duty trucks hauling equipment, material, and water to and from the sites. Bright lights are on all night, and noise is continuous. These consequences of intensive drilling have been disturbing to people and wildlife living in the vicinity of the sites.

Reassessing the Situation
Fearing the consequences of drilling in the Marcellus Shale formation that underlies large parts of New York State, local citizen groups, environmental, and health specialists, and local political leaders have participated in hearings conducted by the state’s Department of Environmental Conservation (DEC). They have focused on the risks posed by drilling to the quality of water in many of the state’s watersheds – but especially the Catskills watersheds which are the source of unfiltered drinking water for the nine million residents of New York City and surrounding counties - half the population of the state.

Since the hearings, the DEC has been deliberating on the shape of the Environmental Impact Statement (EIS) that will be used to evaluate corporate applications to drill in the state. But the DEC has indicated that this EIS will not apply to the New York City Watershed, which will require a separate review process. The state will accept no applications until its EIS is final. At the same time, a group of leading environmental organizations, including the Natural Resources Defense Council, Environmental Advocates of NY, Earth Justice Riverkeeper and Catskill Mountainkeeper are considering their next steps to best protect the integrity of the state’s watersheds.

Washington’s Response
Pressures by advocacy groups across the country have been felt in Washington, DC. Congress recently called on the Environmental Protection Agency (EPA) to undertake a study of hydrofracking’s impact. In addition, the FRACK bill, introduced in both houses of Congress, would remove the exemption granted in 2005 to the natural gas drilling industry from the provisions of the Safe Drinking Water Act, restore EPA’s authority to regulate hydrofracking and require transparency with respect to the chemical content of the hydrofracking fluids.

As issues are weighed and regulatory decisions made,
their shift to natural gas technology more affordable. They could do this in two ways:

**Sharing:** A tax-exempt buyer could get a tax-paying seller to reduce the price for a vehicle or fueling station by all or part of the tax credit to which the seller is entitled. (See the Smithtown example on page 5).

**Refunds:** A tax-exempt purchaser of fuel — either compressed natural gas (CNG) or liquefied natural gas (LNG) — could file for a cash refund equal to the full value of the fuel credit that the seller would otherwise have qualified for (if selling to a tax-paying entity).

### Building Natural Gas Vehicles and Markets

Several other provisions of NAT GAS along with tax credits described above, would expand markets for NGVs:

- Retrofitting (replacing a diesel or gasoline engine with a natural gas engine) would qualify for the vehicle tax credits.

- State and local governments would be able to issue tax-exempt bonds to finance natural gas transportation projects (Senate version).

- Manufacturers of NGVs would get financial incentives to build new US production plants.

- At least 50% of vehicles purchased for federal fleets would be required to be either “dedicated alternative fuel” vehicles (in the Senate version) or capable of running on CNG or LNG (in the House version).

### NAT GAS Opens the Door to a Fully Sustainable Fuel for Trucks and Buses

The primary focus of NAT GAS is the conversion of the 10 million trucks and buses on US highways, roughly 4% of all road vehicles, to natural gas. Freight trucks haul nearly $10 trillion worth of goods every year (more than two thirds of the nation’s entire Gross Domestic Product in 2007), and trucks provide year-round sanitation, emergency, and other critical services to every community. In performing essential economic and social roles, trucks and buses consume 23% of highway fuel. They emit 26% of road-related carbon dioxide and between 40-60% of highway emissions of nitrogen oxides and soot. By curbing the oil dependency of trucks and buses, NAT GAS could enable Americans to realize economic benefits ranging from job creation to energy security. (See President’s letter).

Most importantly, NAT GAS builds a bridge to sustainable truck and bus fuel. After being converted to natural gas, trucks and buses can just as well drive on carbon-neutral biomethane, a sustainable form of natural gas made from organic wastes.

### ALTERNATIVE FUEL VEHICLE PURCHASE CREDIT

A tax-paying buyer gets the credit. If a buyer is tax exempt, the credit defaults to the seller—who is then able to offer the buyer a lower price.

### ALTERNATIVE FUEL STATION INSTALLATION CREDIT

The entity that puts a fueling property in service gets the credit. If this is a tax-exempt entity, the seller gets the credit and can then lower the buyer’s price.

### ALTERNATIVE FUEL CREDIT

Retailers get the credit, except when buyers are tax exempt, in which case the buyer (e.g., a school district) gets a cash rebate.
How Federal Tax Credits Helped
Smithtown Buy a Natural Gas Work Truck

In 2009, Smithtown, Long Island, bought a Freightliner M2 112 truck (above) to use for all-purpose highway maintenance jobs like snow plowing and clearing storm debris. Powered by a compressed natural gas (CNG) engine, the M2 model meeting Smithtown’s specifications had a list price of $225,400 compared to $143,400 for an equivalent vehicle with a diesel engine.

At Smithtown’s request, the truck dealer, Long Island Freightliner of Bohemia, NY, looked into the availability of federal tax credits. When he learned that he could apply a $12,000 Alternative Fuel Vehicle Credit against his tax liability, he lowered the quote to Smithtown by that amount. Had it not been for Annual Minimum Tax restrictions, the dealer could have applied the maximum amount allowable for this size of truck, $20,000, and could have passed the larger savings along to Smithtown.

NAT GAS provisions could make this truck even more affordable for Smithtown. The dealer would qualify for a maximum $40,000 credit, double the current rate. He could probably benefit from the entire amount, thanks in part to changes in Annual Minimum Tax rules, and thus could lower the purchase price by the full amount of the credit.

Of special note, Freightliner offered factory-built M2’s for the first time in 2009, making it as easy to buy a natural gas truck as a diesel truck. NAT GAS seeks to spur markets for factory-built natural gas vehicles like the M-2, one of the most popular trucks in the country, to the point where vehicle prices would drop and tax credits could be reduced.

Russ Barnett, Director of Environment and Waterways in Smithtown, provided Energy Vision with the information used here.

MEET EV’S DIRECTORS

BLYTHE DANNER

Blythe Danner has had uncommon success as an actor on Broadway, in film and in television. Her Broadway debut in Butterflies Are Free brought her a Tony Award, and she was subsequently nominated for her performances in Follies, Streetcar Named Desire and Betrayal. Playing the formidable widow in Suddenly Last Summer at the Roundabout Theater, her most recent role, earned her a nomination for the Drama Desk Award.

Movie goers remember her in The Great Santini, three Woody Allen films, Meet the Parents, and its sequel, Meet the Fockers. A third installment of these comedies, The Little Fockers, will be released later this year. Being nominated for three Emmy Awards in one season – a record – attests to her success in television. For two consecutive years, she received Emmy Awards as Best Supportive Actress for her role in the Showtime series, Huff.

Blythe has not rested on her acting laurels. All-life long environmentalist, she promoted curb-side recycling in Santa Monica and in New York. When electric cars came on the market, she was among the first to get behind the wheel. Currently she is installing solar panels on her house and equipping it for geothermal heating. Asked about her membership on Energy Vision’s board, Blythe says, “I have long admired Joanna Underwood’s expertise, energy and eloquence as a spokesperson for the environment. Becoming a grandmother has given me a new sense of urgency about these issues. Serving on the board is a way I can help.”

BRENDAN SEXTON

Brendan Sexton has played a civic leadership role in New York City for more than 20 years. Since 2001, he has been President of the Sexton Company (www.sextonco.com), consulting on sustainability and corporate social responsibility. Previously he served as Director of the Mayor’s Office of Operations and as Commissioner of the New York City Department of Sanitation. While there he implemented the city’s first major recycling program in 1987 and ordered the Department’s first natural gas refuse trucks.

Brendan has also been president of the Municipal Arts Society, Vice President for Corporate Community and Government Affairs of The Rockefeller Group, and President of the Times Square Business Improvement District. Despite his professional accomplishments, he does not neglect his domestic responsibilities, and, as he is the father of 10 children, they are considerable.

Brendan’s interest in Energy Vision grew out of his dissatisfaction with the diesel trucks he once controlled. “It pains me to admit it because I once ran the largest municipal truck fleet in the country, but diesel has been one of the worst contributors to pollution in urban America. How great then to get involved with Energy Vision and help to shift these same workhorse trucks, doing the same job every day, to the cleanest fuel available.”

Thanks to EV’s Interns

Neal Day, Drew University
Caroline Herman, Bryn Mawr College

Their background research supported new factsheets available on our website (www.energy-vision.org).
- A Greener Future for the Garden State? The Role of Natural Gas Vehicles (Neal Day)
- Hydrofracking: The Opportunities and Risks of Drilling for Shale Gas (Caroline Herman)
Shale Gas article continued from Page 3

state and local authorities together with environmental and health advocates will be the primary forces restraining the pace of industry growth. Economically depressed areas, whether they are less able to muster resistance or eager for these operations to create jobs and tax revenues, will be particularly at risk.

Getting the Good Without the Bad

As the cleanest and most plentiful domestic fossil fuel in the US, natural gas can play a significant role in reducing the country’s dependence on foreign oil, reduce vehicle pollution and greenhouse gases, and serve as a back-up energy source for solar, wind, and other renewable electric power generating systems. But the goal of sustainability cannot be reached if these gains are made at the expense of our water resources or the endangering of public health.

Grasping successfully with the challenges will require both government regulation and natural gas industry initiative aimed at eliminating the toxic substances in fracking fluid, preventing leaks and spills, reducing the air pollution from drilling sites, evaporation pits, and truck traffic, and minimizing land disruption.

Some good news: even if no new hydrofracking permits were approved until effective government regulations are in place, just a fraction of already developed supplies of natural gas would be sufficient to fuel every bus and truck fleet in urban America, delivering all the benefits this fuel can provide. And once converted to natural gas, these fleets will be positioned for a second shift to the even better gas fuel, biomethane - carbon-neutral, pollution-free and renewable.

Further, since biomethane is made from organic wastes, it's production requires no drilling at all! Used as a fuel in Europe for a decade, biomethane’s potential is just beginning to be recognized in the US by municipal leaders who see the economic and environmental benefits of turning gases from their landfills, sewage treatment plants, and other organic waste sites into a clean transportation fuel. The incentives proposed in the NAT GAS bill can help jump-start this new industry.