



Energy Vision-Pace Workshop: A First for New York State Policy Makers

Energy Vision and Pace Energy and Climate Center co-sponsored the first event in New York State on “Turning Local Organics into Vehicle Fuel.” As this technology is a prime environmental and economic opportunity for New York State communities, it was fitting that the workshop was held at Pace Law School in White Plains, New York. Pace Law School’s Environmental Program is consistently ranked among the best in the nation and the workshop reached an engaged audience – more than 50 people from industry, state government, and academia.



Workshop attendees filled Pace Law School’s Tudor Room to hear from industry experts.

The daylong event was kicked off with comments presented on behalf of Senator Kirsten E. Gillibrand (D-NY) highlighting the importance of EV’s solution-oriented work. Introductory remarks by EV President Joanna Underwood were followed by



Workshop panelists Chris Voell of BioCNG (left) and Ted Niblock of Turning Earth (right).

New EV Report Hails Winning Climate Change Strategy

Energy Vision’s new publication, *Renewable Natural Gas (RNG): The Solution to a Major Transportation Challenge*, cites this emerging waste-based fuel as a commercial replacement for diesel fuel.

Production and use of RNG will help turn this country’s expensive organic waste burden into a clean vehicle fuel solution. Fossil-based and renewable natural gas are the only fuels that can significantly displace diesel use by medium- and heavy-duty buses and trucks, the lifeblood of our economy.

According to EV’s President Joanna Underwood, “by aggressively embracing this strategy as part of an overall energy plan, the Obama Administration and the 113th Congress can make measurable

progress in achieving our climate change, as well as our clean air, energy, economic, and job creation goals.”

Renewable Natural Gas

RNG is made from organic wastes discarded by homes, industries and agricultural operations. Deposited in oxygen-free environments including landfills or specially built tanks called “anaerobic digesters,” these organics decompose and emit biogases. These can be

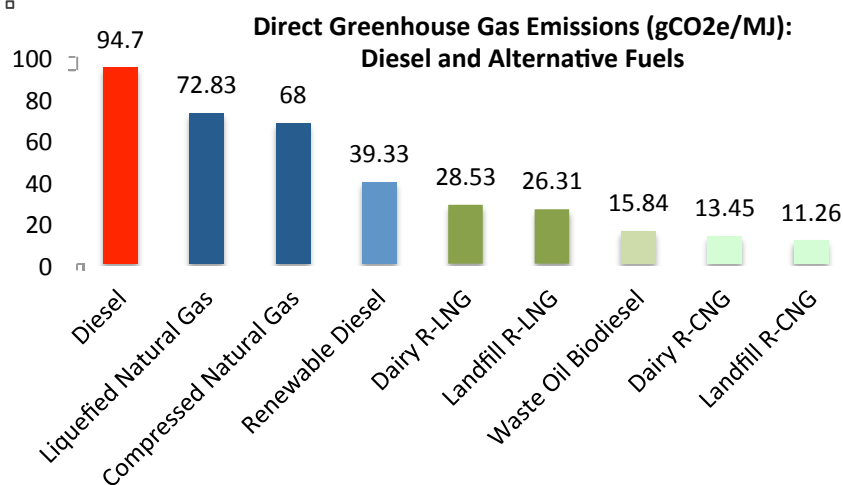
refined into a fuel that is similar to fossil natural gas, but that requires no drilling. RNG can be blended with, or can replace, fossil natural gas.

Producing RNG in Communities

Communities of 40,000 or more may produce enough organics to fuel their bus and truck fleets. But smaller communities could explore pooling their wastes with neighboring towns, dairies, hotels, food processing plants, etc., and investing jointly in RNG production.



RNG (R-CNG/LNG) is the Lowest Carbon Fuel Commercially Available



Derived from CA Air Resources Board LCFS, 2009.

LETTER FROM THE PRESIDENT

Joanna D. Underwood

President Obama’s State of the Union address this year made it clear that he, as well as millions of his fellow Americans – in the wake of Superstorm Sandy – had grasped the staggering costs our country faces from climate change. For the first time, a U.S. President made cutting climate-changing greenhouse gas emissions a top priority: an essential hedge against the increasing ferocious weather events – storms, hurricanes, floods and droughts – looming on the horizon.

In this issue of *EV News*, we focus on one of the most exciting arenas for investing in a sustainable future: a transportation strategy that is doable today, in which local communities and businesses across the country can be the real “game changers,” and that can produce a positive economic payback in a handful of years: turning the organic wastes in our own backyards into a clean, renewable vehicle fuel with a close-to-zero carbon footprint.

When Superstorm Sandy hit the New York/New Jersey region last October, before our eyes, we saw New York City’s downtown and financial districts flooded with salt water, sewage, diesel oil, and more. In New York coastal communities, more than 100 lives were lost. More than three hundred thousand homes were damaged or destroyed and 250,000 businesses disrupted. Close to 8,500 trees were toppled. Now, just three months later, more than a thousand families still live in temporary housing. Governor Cuomo has estimated it will take \$42 billion in federal disaster aid to repair the damage and safeguard the coast from the next disastrous storm. Governor Christie, in New Jersey, is seeking at least \$30 billion to repair damage to his state.

Since the dawn of the industrial era, fossil fuels have been the primary drivers of our factories, our power plants and our transportation systems. During just these two brief centuries, concentrations of carbon dioxide in the atmosphere, the leading greenhouse gas emitted by fossil fuel burning, has increased by more than 40%; that of methane, an even stronger greenhouse gas, has more than doubled.

These rising global atmospheric concentrations of greenhouse gases, undeniably linked to human activity, are unprecedented compared with the past 650,000 years.

This new era calls for investing in a shift to non-fossil based energy sources and transportation fuels. EV’s new report (see page one), *Renewable Natural Gas (RNG): The Solution to a Major Transportation Challenge*, points to one of the “big solutions” at hand: the billions of tons of organic wastes, thrown away as “garbage” by homes, businesses and agricultural operations

that can be used to produce a renewable form of natural gas (called RNG). It requires no drilling and is close to carbon neutral. Our report profiles eight successful waste-to-fuel projects - models that can be replicated in urban and rural areas across New York State and coast-to-coast.

Governor Cuomo, who has made greenhouse gas reduction a priority for New York State, may be glad to hear that investing \$250 million (a fraction of the estimated Superstorm Sandy cleanup costs) for fleet conversions to gaseous fuel, could catalyze even greater private sector investment in the facilities to collect and refine biogases from NY’s organic wastes. With a guaranteed market for this fuel (which could power thousands of heavy duty buses and trucks in the State), 100 million gallons of renewable, waste-based natural gas could be produced, eliminating more than 975,000 tons of greenhouse gases. By incentivizing sustainable transportation, New York State can attract private sector investment by RNG industry pioneers, creating thousands of jobs while building its green economy.

The new RNG production industry is raring to grow. With your continued support in 2013, EV is poised to move RNG forward – through education and outreach – in the Empire State and beyond.



Trees felled by Sandy near EV’s offices

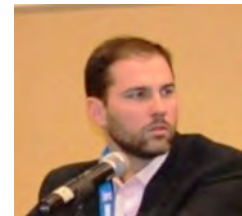
EV ON THE ROAD

Oct 5 EV President Joanna Underwood moderated the keynote panel at Greater Long Island Clean Cities Coalition’s annual event in Bethpage, NY. The panel included (right to left) Clean Energy Fuels President and CEO Andrew J. Littlefair, former Governor George E. Pataki, Smithtown’s Environmental Director Russell Barnett and the Town’s Supervisor Patrick Vecchio.



Oct 17 Pace Law Professor and EPA Region 2 Senior Attorney Joseph Siegel invited EV Research and Outreach Associate Matt Tomich to co-teach his Environmental Law class. The topic was the complex interplay between economics, policy and innovation in relation to renewable energy and alternative fuels.

Jan 17 EV’s Matt Tomich spoke at the Solid Waste Association of North America’s annual Senior Executive Seminar in Tucson, AZ, encouraging municipal landfill operators to recognize the environmental and economic benefits of turning local organic wastes into vehicle fuel.



Jan 18 Joanna Underwood participated in a full-day symposium for Bryn Mawr and Haverford students, “Flourishing Beyond the Legacy of Oil,” along with several other environmental/energy experts, academics and leaders from the Philadelphia region.

Feb 21 At NYC’s City Hall Park, EV’s Matt Tomich participated in a press event at which Mayor Michael Bloomberg and T. Boone Pickens unveiled the first “food truck” in the country fully powered by compressed natural gas (congratulations to Neapolitan Express).



Why RNG? Why Now?

• *Communities and companies need a reliable fuel for their essential bus and truck fleets, but the diesel fuel they have used for decades is now problematic.* Diesel is largely made from risky imported oil. It is subject to volatile price swings, and diesel emissions have recently been labeled a “known carcinogen” by the World Health Organization.

Fossil natural gas is one commercial option. It is a domestic resource, is 80% cleaner than diesel, and is 20%-25% lower in greenhouse gases. However, there is heated debate about the environmental and health impacts of the drilling technique known as horizontal hydraulic fracturing (or “fracking”) used to extract most of this gas. RNG, produced from waste, involves no drilling.



At Fair Oaks Dairy in Indiana, RNG made from liquid manure powers 42 long haul trucks that carry milk to customers in Kentucky, Michigan and Tennessee.

• *Use of RNG can enhance U.S. security by significantly reducing our dependence on foreign oil:* The 10 million diesel buses and trucks, for which natural gas engines are available today, should be the priority markets for RNG use. Buses and trucks make up just 4% of all vehicles but consume almost a quarter of all vehicle fuel – more than 38 billion gallons a year.

RNG could displace 16% of diesel vehicle fuel consumed a year (some 6.4 billion gallons), using today’s technologies.

• *RNG is an exceptional strategy for meeting U.S. climate change goals:* According to the California Air Resources Board (See chart on p. 1), RNG’s carbon footprint is the smallest of any commercial fuel.

• *RNG also addresses this country’s expensive solid waste disposal challenge:* The disposal of food waste and yard trimmings, which represent 28% of our total municipal waste stream (some 68 million metric tons a year) drains municipal budgets.

To read or download *Renewable Natural Gas (RNG): The Solution to a Major Transportation Challenge*, go to: energy-vision.org/publications/reports/

EV’s RNG Webinar: Hailed by NY State Department of Environmental Conservation as “Best-Attended Ever”

On September 13th, Energy Vision ran a Webinar for NYS communities hosted by the DEC’s Climate Smart Communities program. It highlighted the major greenhouse gas reductions communities can achieve by converting local waste gases into fuel for their fleets and presented three case studies in the U.S. and Canada. Webinar participants were from five states and Russia. The event was called the “best-attended” ever in the DEC’s Climate Smart Communities webinar series.

Consumer Insights: HEV Sales Soar in 2012, Market Share Breaks 3.0 Percent Barrier
James S. Cannon, President, Energy Futures, Inc. (www.energy-futures.com)

Sales of hybrid electric vehicles (HEVs) in the United States soared in 2012, showing a significant improvement over three prior years. Total 2012 HEV sales, including sales of plug-in hybrid electric vehicles (PHEVs), reached 473,083, a 71.1 percent increase over 2011. This past year marked the first time since HEVs entered the market in 1999 that they have captured more than 3.0 percent of total national car sales; a 3.0 percent market share is frequently cited as the threshold of widespread consumer acceptance.

Who are the industry leaders? The original Toyota Prius liftback (50 MPG*) retained its top ranking, selling more HEVs than the other nine top selling models combined. The Hyundai Sonata (38 MPG) retained second place, but the GM Chevrolet Malibu Hybrid (30 MPG), a newcomer to the top 10, captured third place. The Ford Fusion Hybrid (39 MPG) moved into fourth place and the Lexus RX 400/450 h (30 MPG) models moved into fifth place. The top three HEV models are shown below.

Toyota, long the dominant maker of HEVs in the U.S., accounted for more than two-thirds of all U.S. HEV sales in 2012. Plug-In Hybrid Electric Vehicles (PHEVs) completed their second year in the U.S. automotive market. Though PHEV sales remained small in 2012, at 38,585 vehicles, their sales have quintupled since 2011.

*EPA combined city/highway mpg estimates (www.hybridcars.com)



1) Toyota Prius Liftback



2) Hyundai Sonata Hybrid



3) GM Chevrolet Malibu Hybrid

three panel discussions: on producing fuel using anaerobic digestion; on turning landfill gas into fuel, and on policies promoting waste-to-fuel progress. Feedback from participants indicated that the information presented was new, relevant and beneficial. Great potential exists in NY State to capitalize on the myriad benefits of RNG, a major EV goal in 2013.

EV Joins Forces with the Coalition for RNG

"We couldn't be more pleased to welcome Energy Vision to the Coalition," said David Cox, Director of Operations for the Coalition. "This is a non-profit organization that recognizes that information is power. They have the skill, passion and credibility to deliver critical information about renewable natural gas to our nation's leaders and the masses."

"I believe membership in the Coalition made sense for Energy Vision because they see we have the same goal of advancing RNG as a viable solution to our states' and our nation's most pressing energy and environmental problems," said Coalition Executive Director Johannes Escudero. "The Coalition is made up of the most serious companies, labor organizations, marketers, law firms, transporters and non-profits committed to transforming the way renewable natural gas is understood. RNG is clean, ultra-low carbon, renewable, and available in every city's own backyard. RNG is a critical component of any renewables strategy, and Energy Vision not only understands this, they have been proclaiming it boldly for years... The Coalition encourages its members to solicit Energy Vision's services, including the production of outstanding workshops and webinars."



Joanna Underwood with Richard Ottinger, former NY Congressman, Professor Emeritus and founder of Pace's Energy and Climate Center.

We would like to thank Theresa McCarty, a recent graduate of Middlebury College, for her passion in working toward a more sustainable planet, and her help in drafting EV's newsletter.



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EV is a national non-profit organization that analyzes and promotes ways to make a swift transition to pollution-free renewable energy sources and to the clean, petroleum-free transportation fuels of the future.

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