EV Reports on the City of Surrey’s Waste-to-Fuel Initiative

For communities in the U.S. and Canada wanting to build sustainability into their planning, the Canadian City of Surrey emerged early in 2012 as one role model. Surrey, the second largest city in British Columbia with 470,000 residents, designed a seven-year waste management plan to be launched in October 2012. EV’s report: The City of Surrey: Setting the Pace for Sustainable Transportation, describes this program that, by 2014, will have the 70-75 waste collection trucks servicing the City all fueled by a renewable form of natural gas made from the City’s own wastes.

Renewable Natural Gas

The fuel called RNG, that will power Surrey’s refuse trucks (BFI Canada won the contract) not only requires no drilling, it also, when burned, results in virtually no particulate emissions. Made by capturing and refining the biogases emitted from decomposing organic wastes, RNG, on a well-to-wheels basis, is the most “climate friendly” fuel available—close to carbon-neutral.

Economic Benefits

Surrey’s fleet will be petroleum-free, while the City will also slash its yearly municipal waste stream by 75% yearly by recycling (23%) and by collecting separated organics (51%, 65,538 tons). Surrey will get both fuel for the BFI fleet and biosolids left over that can be used for fertilizer. The City will also strengthen its economy by cutting its waste disposal costs and also paying less for its new solid waste contract with BFI, because the fuel BFI uses will be much cheaper than diesel.

Organics Diversion Reduces Landfilling

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Graph Courtesy of City of Surrey
There is a new commercial entry in the race for New York State’s energy independence, and Energy Vision is focusing on building support for it this year. This entry is a fuel that can be made from organic wastes. The disposal today of these wastes by millions of homes, businesses, farms and dairies across the State represents the squandering of a precious fuel resource, because, they can be used to produce a renewable form of natural gas, called “biomethane” or “RNG.” RNG has all the benefits of clean burning-conventional natural gas fuel but none of the liabilities. It is virtually free of soot emissions. On a well-to-wheels basis it is the lowest carbon fuel available, and it requires no drilling. Every bus and truck in the State could run on it.

Is this a pipedream? Absolutely not. In Europe, over the past decade, RNG has been produced and is now powering hundreds of buses and trucks. In Canada, the first project is getting underway (see EV News, page 1, on The City of Surrey). RNG production has just begun to spark interest in the U.S. (Go to our website to find profiles of some of the first U.S. waste-to-fuel initiatives http://energy-vision.org/interests/renewable-natural-gas-rng-biomethane/).

New York State is a great place to look for leadership in building a waste-to-fuel industry. It has waste organics virtually everywhere: at its 27 large landfills; its 600 wastewater treatment plants; at every dairy (NYS has the fourth largest dairy industry in the country), and at its food processing plants (part of the State’s $3 billion food processing industry). New York has over 50 mid-sized cities that could turn their expensive municipal waste burdens into a clean fuel solution for their fleets and create jobs, helping ease their economic woes. A promising sign: New York State has a Governor and Department of Environmental Conservation that are looking for clean renewable energy sources and sustainable fuels to take root. RNG is one prescription that is just what the doctor ordered.

How is this fuel made? It’s made by collecting and refining the biogases that form as organic materials decompose in landfills, or by putting separated organics from homes, businesses, etc., into a special vessel called an anaerobic digester, so that, in addition to the biogas-based fuel that is produced, there are left over bio-solids that can be used for fertilizer or soil amendments.

While dollars are tight in both the public and private sectors, grant and tax incentive programs that will enable communities and waste companies to cover some of the first upfront costs of change are vital. In NY State, it is a better investment in our future than continuing to send millions a day abroad to buy 91% of the oil we need from foreign suppliers.

As highlighted in Energy Vision’s new New York State Factsheet (see EV News, p. 4), it is clear that the State needs cleaner air, and to reduce its dependence on foreign oil, which is greater than that of any other state. A new recent driver is the fact that diesel fuel produces fumes that were labeled “known carcinogens” by the World Health Organization. A successfully launched RNG industry in New York State will enable EV to go with its partners and collaborators to take the message to other states and to Washington DC in 2013. We ask every New Yorker to join EV in promoting this strategy.
Regional Requirements and Rewards

Government programs have supported and encouraged Surrey’s initiative greatly. These include: British Columbia’s Climate Action Charter, setting a goal of reducing carbon emissions by 80% by 2050 and a Carbon Tax set by local governments in BC which was initiated at $10 per ton on July 1, 2008, and reaches $30 per ton this summer. By signing the BC Climate Action Charter, Surrey became eligible for the Climate Action Rebate Incentive Program (or CARIP rebate), which could total more than $500,000 for the City once Surrey’s biofuels plant is operating and the refuse fleet is powered by RNG.

Because Surrey planned to carry out its project as a Public Private Partnership (PPP), it was able to apply, in the summer of 2011, for a grant through PPP (P3) Canada, a Crown Corporation with an independent Board of Directors reporting through Canada’s Federal Minister of Finance. Canada’s PPP mandate is to improve the delivery of public infrastructure by achieving better value, timeliness and accountability to taxpayers, through P3s. If the City’s application is approved, it will receive a federal grant of up to 25 percent of the capital cost of the waste-to-biofuels facility. This facility will initially be funded by Surrey’s future private-sector partner, with the City covering 25% of the capital costs if its grant application to P3 Canada is approved. The City will then pay back the capital over a 25-year period via the contractual disposal rates. Regional programs provide guidelines that Surrey is following.

New Fact Sheet: Reducing Oil Reliance in New York State?

Energy Vision’s new fact sheet, A Greener Transportation Future for the Empire State? reports that less than 1% of the State’s 11.2 million cars, buses and trucks – a total of 31,325) have adopted any alternative fuel or advanced technology. And, of those, just a third (10,017) have shifted to the only widely available 100% petroleum-free option: natural gas. “This suggests the tremendous challenge the State faces,” said Alexandra Tung, who prepared this factsheet.

EV found a good news story on Long Island, a region that is way out front with almost half its 2.9 million population served by over 900 refuse trucks and transit and school buses powered by cleaner quieter compressed natural gas (CNG).

New Faces Enrich Energy Vision’s 2012 Work

EV Welcomes New Research and Outreach Associate Matt Tomich

Matt Tomich, before joining Energy Vision, worked for a high-growth NYC tech-startup in 2011 as well as a fermentation chemistry company in Kansas City from 2009-2011. He came with experience in business development, operations, marketing and technical research. At Energy Vision, he will be combining his dual interest in entrepreneurship and renewable energy, promoting the adoption of sustainable solutions for the transportation sector. Tomich earned a B.A. in Geology from Haverford College, where he focused on Geochemistry, and an M.B.A. from Kansas State University with an emphasis on Technology and Entrepreneurship. His favorite past time is fly-fishing – catch and release of course.

Many Thanks to EV’s Terrific Interns

Spring interns Nora Schmitt (Bryn Mawr) who planned EV’s release of The City of Surrey report and Lydie Costes (Haverford) who drafted this newsletter (top left). Summer interns (left to right) include: Nick Michel (Vassar), who worked on EV’s website; Ann Lu (Cornell) who has prepared profiles on dairy-related waste to vehicle fuel projects in the US (shown left with Matt), Reid Jenkins (Columbia) who analyzed the growing use of the MV-1 taxi, and Angel Genares (Bryn Mawr) identifying the midsized cities in NYS that will be a focus of EV’s fall "Renewable Natural Gas" workshop. Not shown: Alexandre Guttman, (Conn College) who is researching hydrofracking companies and Ailin Jin (Cornell), from Beijing, who is researching initiatives in China, and Tejal Jamidar (Princeton), who is preparing profiles on landfill gas-to-fuel projects in the U.S.
Underwood testified at hearings before the NYC Taxi and Limousine Commission last fall in support of this vehicle and again in May. She emphasized that “The MV-1 stands to improve the quality of life for 60,000 disabled New Yorkers, including many veterans to whom we owe so much, and the natural gas model will mean healthier air for all New Yorkers. The City has only 233 wheelchair accessible taxis at present. The disabled have long needed a safe, quiet comfortable vehicle in which to get around.”

“In London,” Underwood notes, “all taxis are wheelchair accessible. And while no US city is equally equipped, we congratulate Mayor Bloomberg and Governor Andrew Cuomo for conceiving a new three-year program in New York City in which 2000 new taxi medallions will be sold strictly for drivers of wheelchair accessible taxis in Manhattan and 3,600 more in the outer boroughs. New York City’s Access-A-Ride Program, a door-to-door service that provides transportation to the disabled, has added 30 MV-1s (15 gasoline-powered and 15 CNG-powered) to its fleet.

Underwood lauds VPG for responding to market needs with a social cause in mind, calling the MV-1 “an exciting example of business leadership crafting a new product aimed at meeting a very real need. The MV-1 is also appearing in West Haven and Bloomfield, CT, Chicago, IL, Dallas, TX, as well as other cities across the country. Underwood predicts it may soon be on city streets coast to coast.

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Mr. Singh and Brian Perone from Clean Energy, a partner in the VPG venture, showing off the roomy luggage space.

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