

Local Government Alternative Fuel & Vehicle “Extent Practicable” Rulemaking

Meeting Notes – February 13, 2015

Introductions

Participants in the room recorded their names and organization on a sign-up sheet (see roster following these notes). Participants on the phone, as best as could be captured, included:

- Jan Allen, Impact Bioenergy
- Ken Baily, Community Transit
- Steve Blaska, Spokane Transit
- Mike Bozzo, Whatcom Transit
- Frank Castro, Snohomish PUD #1
- Todd Daniel
- Ron Green, City of Kent
- Nathan Isaacs
- Allan Jones, OSPI
- Ernie Jones, Emerald Energy NW
- Ryan Kenny, Clean Energy
- Alan Kies, Pierce County
- Tom Krabbenhoft, Western Washington University
- Colleen Murphy, Community Transit
- John Noble, City of Kennewick
- Kurt Patterson, City of Arlington
- Andrea Pratt, City of Seattle
- Matt Stewart, Jefferson County
- Ron Stuart, Port of Tacoma
- Brandi Vena, Washington Public Ports Association
- Michael Wagner
- Timothy Wagner

Overview

Peter Moulton, Washington Department of Commerce, reviewed the purpose of this meeting, that is, to describe and discuss the opportunities for using fossil natural gas, renewable natural gas, and propane as alternative fuels. This follows a meeting this morning of the Alternative Fuels and Vehicles Technical Advisory Group, which is supporting agency efforts to use more alternative fuels.

Peter noted we are still working with local government associations regarding fuel consumption to ensure we are reaching out to jurisdictions that may be affected by a reporting threshold in the forthcoming rules.

Natural Gas

The natural gas portion of the meeting included two presentations:

Future of Natural Gas and RNG in Vehicle Fueling (*Sean Wine, Clean Energy Fuels*)

Sean Wine provided an overview of the growth in the natural gas industry and its use in transportation. He noted there is no one fuel that is ideal for every application or fleet. Natural gas vehicles are not as popular in the U.S. as in other parts of the world. Things are changing as vehicle manufacturers are now producing natural gas vehicles for many different applications, and the fueling infrastructure grows. Natural gas use is popular around airports and among transit agencies, and is a major player in fueling of refuse fleets. Other developing applications include heavy-duty and long-haul trucking, as well as rail and marine.

Fleets in Washington using natural gas include Port of Seattle, Pierce Transit, Valley Transit, Clallam Transit, Waste Management and CleanScapes/Recology refuse fleets, Potelco, Puget Sound Energy, Doug Fox Parking, Click Distributing, Ocean Beauty Seafood, and more. Market drivers include economics and cost effectiveness, energy independence, emission controls, and a lower well-to-wheel carbon footprint.

Fuel price data from the past decade shows the uncoupling natural gas and oil pricing. The retail price for natural gas has been close to \$2.50 per gasoline gallon equivalent (GGE) for the past five years.

In terms of carbon footprint, fossil natural gas offers a 28% reduction compared to gasoline. Renewable natural gas (RNG) derived from biogas originating at waste water treatment plants, on-farm digesters and landfills offers close to a 90% reduction in GHG emissions. You can even realize a carbon negative footprint by using biogas from food waste collection and digestion. RNG is available in Washington from the King County South Treatment Plant and the Cedar Hills Landfill. Pierce Transit is using RNG from Cedar Hills.

Though oil prices have fallen in recent months, new U.S. exploration is slowing and prices are expected to rise again soon. Natural gas pricing is more stable due to long-term shale gas development.

In summary, Sean concluded:

- Natural gas fueling is happening; economics are the primary driver
- Nearly all major OEM's have natural gas vehicles; engines are available and they work
- Abundant domestic fuel source
- Emission reductions and sustainability
- RNG available in Washington
- Oil prices will climb in late 2015 or early 2016

Questions for Sean covered vehicle conversions, fueling infrastructure (both public and private), safety, and how RNG meets pipeline quality standards.

Natural Gas/RNG: A Utility Perspective (*Ben Farrow, Puget Sound Energy*)

Ben Farrow began with a brief video showing how PSE's natural gas distribution system works – gathering natural gas from interstate resources, storing it at a large facility in Jackson Prairie, Oregon, and distributing it through gate stations and thousands of miles of pipeline to individual customers in six Washington counties.

Natural gas plays a large role in the US, having overtaken coal as the primary fuel for electrical generation. We use as much natural gas as we do liquid transportation fuels. Natural gas is fairly ubiquitous in major metropolitan areas, especially in Western Washington, but not in rural areas of the state. Using the USDOE's Alternative Fuels Data Center [website](#), it's possible to see where all the public fueling stations are located.

PSE uses many types of fuels, including gasoline, diesel, biodiesel, electricity and natural gas to fuel many types of vehicles. They use natural gas for a variety of utility trucks, including new Ford F-550 line/boom trucks. These trucks are high-volume fuel users—typically 40,000 miles per year— used in emergency situations with gasoline/natural gas dual fuel configurations that offer a 700-mile range. This combines a desired cost advantage during day-to-day operations with excellent reliability in emergencies and the option to fuel in the field. PSE also has three-quarter ton service vans with a 200-mile range that run on natural gas, and they've explored natural gas passenger vehicles and SUVs.

Renewable natural gas has a major role in PSE's future. They currently handle 13.3 million GGE of natural gas annually from King County's South Treatment Plant and the Cedar Hills Landfill. PSE currently uses about 7 million GGE of natural gas for transportation. RNG is currently used by Pierce Transit and the Port of Seattle; the rest is sent to California. PSE is looking to file a proposed tariff with the Utilities and Transportation Commission for a specific rate that would allow biogas producers to move their RNG through PSE's system to end users.

Fleet size and operational profile are key factors when siting CNG fueling infrastructure. PSE has a new "Schedule 54" tariff regarding installation of turnkey compression and fueling equipment. Customers then purchase the natural gas on a volume or fixed monthly basis. Public fueling would be allowed under this tariff. Ben reiterated the cost advantage and reduced emissions of natural gas, and noted fuel taxes are fairly comparable to those on petroleum fuels.

Propane

The propane portion of the meeting featured the presentation:

Future of Propane in Vehicle Fueling *(by Darren Engle, Blue Star Gas)*

Darren Engle introduced himself, along with John Bush and Cristina Suarez from Blue Star Gas. Darren introduced the many different uses of propane, many of which are well-known to the general public. Propane is the top alternative transportation fuel in the world, fueling 21 million vehicles worldwide. Propane is a product of natural gas extraction (~75%) and petroleum refining (25%).

Darren reiterated an oft-repeated point that there is no single silver bullet for alternative fuels. Each of the alternative fuels has their “sweet spot” across the different vehicle classifications. The challenge for fleet managers is to look at their entire fleet, even to individual routes as UPS has done, to identify the best fits.

Propane has its sweet spot in the light- to medium-duty sector. OEM vehicles, as well as more than 350 EPA-certified conversion kits, are available. In light-duty, fleet managers will want to look at propane for pick-up trucks, SUVs, cargo and passenger vans, and even the Ford interceptor vehicle for law enforcement. In medium-duty applications, look at Bluebird school buses, T59 chasses from Ford, and Freightliner custom chasses.

There is widespread adoption of propane for vehicles in Washington state, including UPS, Franz Bakery, MasterPark, WSDOT, Seattle Children’s Hospital, and the City of Edmond’s police department.

Propane produces 60% less carbon monoxide, 20% less nitrogen oxide, and 12% less carbon dioxide. Police departments have saved as much as \$2,500 per year per vehicle, while vans can save as much as \$10,000 per year. The fueling infrastructure is very scalable, and new nozzle developments are making refueling easier.

Questions about propane covered a range of issues, such as some loss of fuel economy, autogas providers, the implications of using the state contract for fuel procurement, and the potential to develop “bio-propane” or blends of propane with DME to produce a less carbon intensity fuel.

Fuel economy with propane is very vehicle dependent. For example, you might see an 11% loss of mileage with light-duty vehicles, but only a 3% loss on medium-duty. A transit representative indicated only a 1-2 mile per gallon difference. Transit also reported very low prices for propane fuel, less than a dollar per gallon. Like other alternative fuels, propane users can receive a \$0.50 per gallon fueling rebate, whenever Congress approves it.

Review Criteria for “Practicability”

As a next step in the process, Peter proposed development of a matrix of different vehicle classes and fuels that explores the “practicability” criteria in the legislation. The matrix could be reviewed first in early March with the advisory committee of local government association representatives, then later in the month with the broader group of stakeholders. These discussions will inform development of the draft rule for public review and comment. Concerns were raised about the legislative directive to look at electricity and biofuels first when no one alternative fuel solution works for a whole fleet. Hopefully the matrix will help delineate the “sweet spots” for different fuels.

Future Meetings

Future meetings in March will be schedule via polling with the local government association representatives.

Public Meeting – February 13, 2015

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