

History, Challenges and the Future

...lessons from the past and promise for tomorrow for personal mobility and transportation in the U.S.

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My Background and Perspectives

- DOE Clean Cities program
- Industrial Siting Council
- Jackson-Teton County Energy Efficiency Board
- Experience in local government and with conservation groups



Wisdom from the Past

This we know. All things are connected like the blood that unites one family. All things are connected. Whatever befalls the Earth befalls the sons of the Earth. Man did not weave the web of life; he is merely a strand in it. Whatever he does to the web, he does to himself.

Chief Seattle, 1854.

Transportation: Integrating What We Know

- Conservation
 - Biofuels
 - Hybrid technology
 - Electric vehicles
 - Natural Gas (CNG and LNG)
 - Propane
 - Hydrogen
-all advocated by the Clean Cities program

Conservation

- Idle reduction-local student has taken the lead.
 - Fuel Efficiency standards-is \$1300 a good investment?
 - Public transit advances.
 - Use non-motorized alternatives
- an easy 30% reduction in petroleum use.

Biofuels

- Biodiesel blends from animal fats and vegetable oils. 80% of soy plant used for human and animal food. Camelina, rapeseed, sunflower in northern tier of U.S..
- Ethanol blends: potential for utilizing forest waste, portion of corn stover, sorghum, sugar beets and more.
- Distribution challenges in our region.
- Potential to be a component in hybrid technology- if manufacturer's move that way.

Hybrid Technology

- Smart Grid for plug-in hybrids: wind, solar, natural gas, existing hydro for electric motor. Biodiesel, CNG or flex fuel for internal combustion engine.
- Current hybrids: combination of gasoline (how about biodiesel, ethanol or CNG?) and electric.

CNG & LNG for the Intermountain West?

- Regionally available for many decades to come.
- Lowest cost per gasoline gallon equivalent- currently \$1.63/gge.
- Existing distribution infrastructure.
- GH emissions reduced by 20-30%.

More about CNG

- Honda Civic GX has been rated the “greenest” vehicle for 5 consecutive yrs. by American Council for an Energy Efficiency Economy-Phill units may be installed in private garage if served by gas line.
- 93-95% less toxics than gasoline and diesel

(NGV America)

....and more

- Capture and purify biomethane from sewage lagoons, landfills, animal waste-potential for capturing 10 B metric tons CO₂/yr. for a 500 M metric ton reduction of CO₂ emissions/yr. or removing 90 M light duty vehicles from the road. (USDOE)
- Converting one refuse truck to CNG=removing pollution from 325 cars off the road.
- World wide reserves greater than petroleum. Reserves being added to for 14 of last 16 years.

CNG/LNG in Summary

- Renewed interest in CNG on the part of fuel distributors, fleets and retailers.
- High profile in a recent fueling corridor proposal from 5 Clean Cities coalitions in NW.
- Higher initial investment, but lower ongoing fuel cost.

Investigate, compare, collaborate

- Go to www.eere.energy.gov/cleancities to gather more information about alternative fuels and advanced technologies and where to find them.
- Please take information from our coalition and Clean Cities-2009 Buyer's Guide, informational booklet, coalition information including website www.yellowstonetetoncleanenergy.org.
- ..and remember, all things are connected. We have more power when we consider consequences and work together to make progress.