

Utah Public Service Commission

Regarding alternative fuel vehicles and
conversions in relation to Questar Gas
Company's refueling services

October 8, 2009

Purpose of Testimony

- Additional background as to Questar's presentation Sept 2, 2009 – final slide
 - Home refueling
 - OEM involvement in natural gas vehicles
 - EPA Certification of vehicle conversions
- *The presentation focuses on compressed natural gas (CNG), not Liquefied Natural Gas (LNG)*

Home Refueling

Note: “gge = “Gasoline Gallon Equivalents” approx. 114,118 BTU (there are 8.76 gge per DTH)



Saratoga Springs, UT home refueling experience

Since June 2007 – Fuelmaker FM-Q2-36 unit (\$10k)

Received \$1k federal tax credit (now \$2k)

Dispensed over 1,200 gge to date

Own 3 NGVs, mostly refuel at home

Larger outdoor unit, 2 hoses: 1 gge / hr

(in-garage “Phill” would have provided only ½ gge / hr)

Economics

Residential gas rate = \$6.81 / DTH

Raw fuel = \$0.78 / gge

Compression = \$0.11 / gge

Fuelmaker amortization¹ = \$0.40

Total approx. \$1.29 per gallon equiv.

Considerations

Public stations not convenient for many trips

Time-saver

Increased driving distance vs. public fast-fill

Fueling vehicles with local resource

Significant air quality benefits

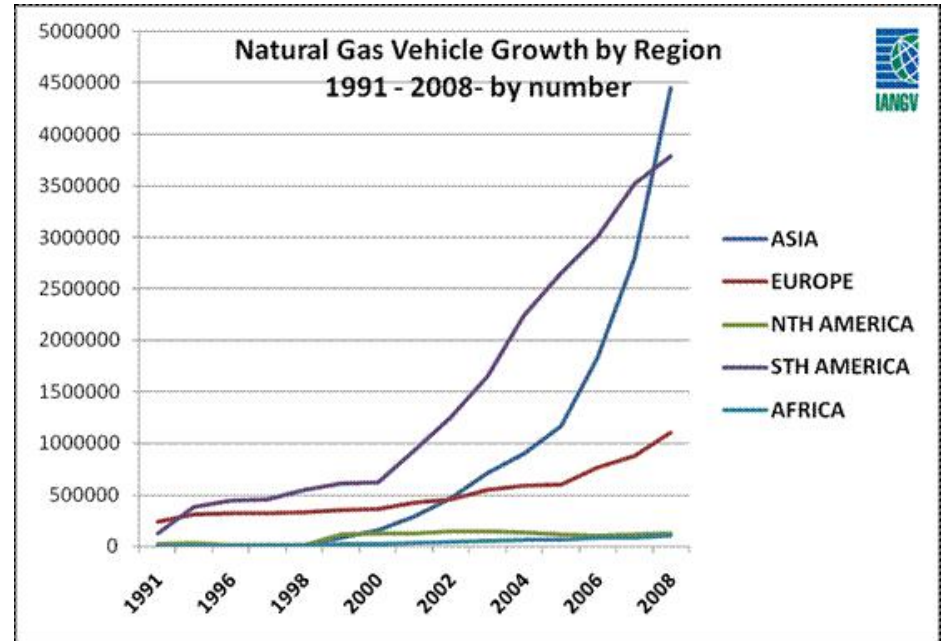
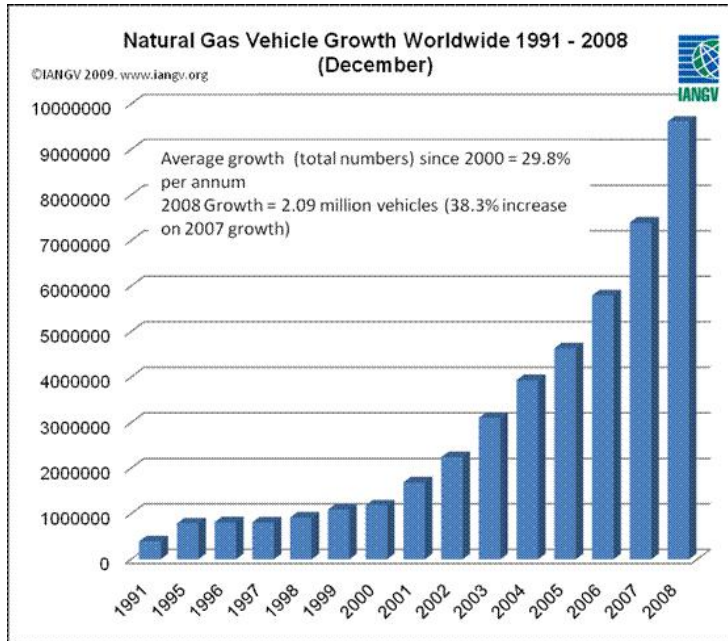
“Tethers” teen drivers to home

No idea how to pay fed & state road taxes

Not applying for \$0.50 / gge fed tax credit

1. Assumes 4 compressor head rebuilds @ \$1,000 ea per 6,000 gge dispensed

Automakers (“OEM”s) & Natural Gas Vehicles



Fewer than 150,000 natural gas vehicles in US vs. almost 10,000,000 worldwide
 US ranked 10th in the world behind countries like India, Italy, China, Bangladesh
 Only light-duty automaker in US with CNG vehicles is Honda
 Heavy-duty CNG vehicles are available by US OEMs (school & transit buses, refuse trucks, etc.)

Companies who offer light-duty CNG vehicles outside of USA include:



OEM NGV Programs in USA 1994 ~ 2005

Time period when natural gas vs. petroleum price differential was insignificant

Programs were largely driven by federal EPCACT fleet requirements

Limited numbers were produced, mostly by 3rd party Qualified Vehicle Modifiers

These former govt. & gas co. fleet vehicles predominate Utah's market



Trucks, vans, sedans



Trucks, vans, sedans



Camry sedan



CHRYSLER

Passenger & cargo vans



HONDA

Civic subcompact (still in production)

EPACT Fleet Requirements

Energy Policy Acts of 1992, 2005

- Covers federal, state and “alternative fuel provider” fleets
- Questar & other gas utilities fall under mandate
- 75% of light-duty vehicle (LDV) acquisitions in covered fleets must be alternative fuel vehicles. *LDV is less than 8,500 pounds GVWR*
 - Fleets earn one credit for every bi- or flexible-fuel AFV acquired
 - An additional credit is earned for acquiring dedicated AFVs as these vehicles operate exclusively on alternative fuels
 - Three credits are earned for dedicated medium duty vehicles
 - Four credits are earned for dedicated heavy-duty vehicle acquisitions
 - Fleets also earn one credit for every 450 gallons of neat biodiesel (B100) or 2,250 gallons of B20 (20% biodiesel and 80% petroleum diesel) used
- EPACT credits may be bought and sold
- “Flex-fuel” E-85 LDV’s cover EPACT mandates now (even if not a drop of E85 is used by the fleet), are cheaper for OEMs to produce

See:

http://www1.eere.energy.gov/femp/program/fedfleet_requirements.html
http://www1.eere.energy.gov/femp/pdfs/fs_federal_fleets.pdf



Fleets Demanding CNG from OEMs



AT&T to convert 8,000 cargo vans to natural gas

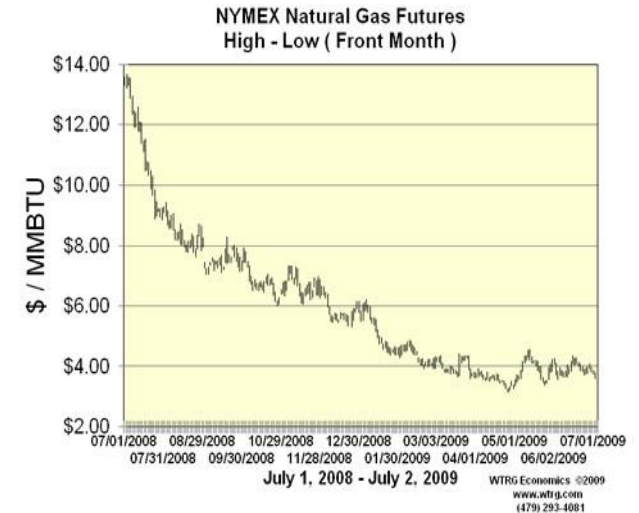
Waste Management investing \$29 million to run all Seattle refuse trucks on CNG & bio-methane



UPS deploys 168 delivery vans on natural gas in Dallas, Atlanta, California markets



State of Oklahoma to acquire 100+ NaturalDrive CNG Impalas



Next Wave of NGV's at Utah's Stations

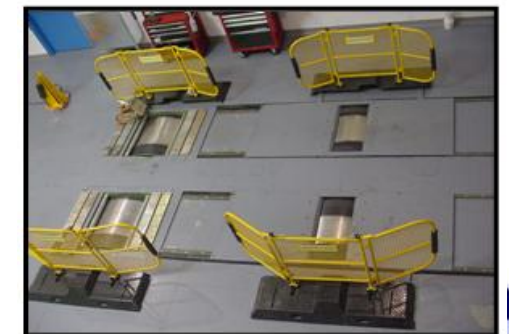
- Heavy duty OEM vehicles (*not* conversions, direct from factory)
 - Refuse trucks (Ogden City, ACE Disposal, etc.)
 - Delivery vehicles (Cisco Foods, UPS, etc.)
 - Transit (UTA?)

- Eventual return of OEM light & medium duty vehicle production

- Light & medium-duty conversions by EPA-certified small volume manufacturers such as ourselves

The EPA Hurdle – Our Experience

- Requires use of ultra-sensitive emissions equipment in special automotive labs
- Obtained 4 certifications from EPA in 18 months
- Certs cover dedicated CNG conversion of:
 - most all 2008 ½ ton GM vehicles
 - all 2009 ¾ ton GM vehicles
 - all 2008 & 2009 Chevrolet Impala sedans
- Approx. \$110,000 in total laboratory fees
 - First certification: \$40,000 in 4 months
 - Most recent certification: \$18,000 in 33 days
- Most difficult hurdle is ensuring OBD II system is functional on alternative fuel
 - New fuel = new chemistry & calibrations
 - No false “check engine lights”
 - Correct diagnostic codes are set when vehicle emissions exceed 1.5 x standard



EPA Working to Streamline Process

New grouping policy provides broader coverage for our data

Example: model year 2008 GM ½ ton platform

Old Policy: test vehicle GM group only

Engine: 5.3 liter flex-fuel

Sierra

Silverado

Tahoe

Yukon

Suburban

Avalanche

New Policy: all similar GM engines

Engines: 4.8 liter & 5.3 liter any fuel

Sierra

Silverado

Tahoe

Yukon

Suburban

Avalanche

Express

Colorado

Savana

Canyon

Hummer H3



What EPA's Streamlining Means for Utah NGV Owners

- Wider choice of certified conversion systems from which to replace aging high-mileage OEM natural gas vehicles
- Lower conversion costs as lab work amortized over more vehicles
- Increased federal assistance to cover cost of conversions
 - Only dedicated alternative fuel vehicles may take federal credits
 - Must be EPA certified

Example: 2009 GM $\frac{3}{4}$ ton truck or van conversion to dedicated CNG

Cost of conversion with 21 gge fuel storage ¹	\$10,950
Federal income tax credit	(8,000)
Utah state income tax credit	(2,500)

Net cost after credits	\$ 450

1. Recent quotation from Lancer Automotive, SLC for NaturalDrive conversion of Silverado 2500 truck



How EPA can improve

- Broader allowance of carrying-forward lab data to next model year
- Simple web-based input of data and application without dizzying formats required of the OEMs
- Elimination of alternative fuel converter certification fees
 - Double-dipping: the OEM already paid fees to EPA for every vehicle we convert
 - Pre-payment is onerous when annual volume uncertain
 - Overage re-applications cause needless paperwork burden on EPA, converters
 - Discloses our sales volume to competitors and would-be competitors
- Additional staff and budget to ensure innovation and national energy security are not hamstrung by the process

How Utah's Public Service Commission Can Help

- First and foremost “do no harm” in the implementation of recently-approved \$14.9 million DOE grant for alternative fuel infrastructure and vehicles in Utah
- Foster state's vision for increased use of natural gas in the transportation sector
- Enact policies which ensure those who wish to use this fuel are subject to market risk *in the pricing of natural gas* – not relative to gasoline pricing as is the case in many CNG markets
- Should Questar Gas leave the CNG dispensing business, ensure no unregulated monopoly takes its place