

ECO Fuel Systems Inc.

Advanced Canadian Light Duty CNG Conversion Technology for India



Presented by Markus Wenzel
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Company History

- ECO Fuel Systems was founded in 1983, when the use of CNG as an alternative transportation fuel in Canada began.



ECO Fuel Systems Inc.

Company Location



Located in Vancouver, Canada

Company Overview



Airport Shuttle - Edmonton, Canada



Grand Caravan Zurich, Switzerland

Over 25,000 vehicles have been converted
with technology from ECO Fuel Systems

Company Overview



Black Top Taxi – 500,000,000 km on CNG since 1983



2003 GM Truck with ECO CNG Injection

ECO Supplies Advanced, Engineered CNG Conversion Solutions to Government, Utility, and Private fleets

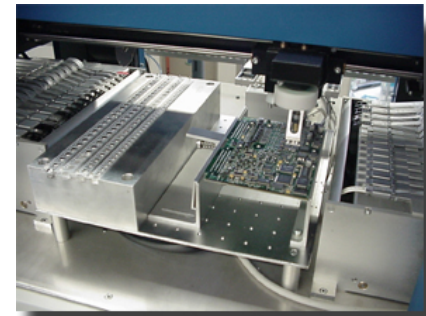
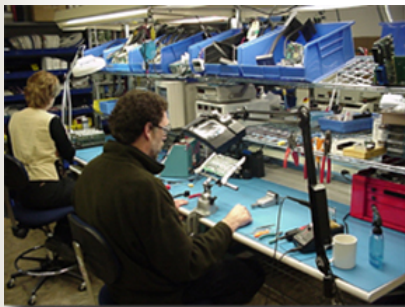
Company Overview



ECO Conversion technology meets the world's most stringent performance and emission criteria

Staff, Equipment & Facility

- ECO houses manufacturing, shipping, R & D, and administration at its headquarters near Vancouver.
- Engineering is conducted offsite through a team of electronic, mechanical, and software engineers



NGV Growth Worldwide



ECO Technology for the President of Fuelmaker

- Like other parts of the world where NGV is successful, economic and environmental motivators will create and sustain growth of NGV's in new markets

Favorable Taxation for NGV



Dodge Caravan in Prague with ECO Conversion System

- The main motivator of NGV use in transportation is economic \$\$\$
- Success of NGV in any market is based on “payback” related to the spread of CNG price to gasoline or diesel

Favorable Taxation for NGV



- The lower cost of CNG in most countries is because of favorable taxation policies for the cleaner, lower carbon fuel

Favorable Taxation for NGV



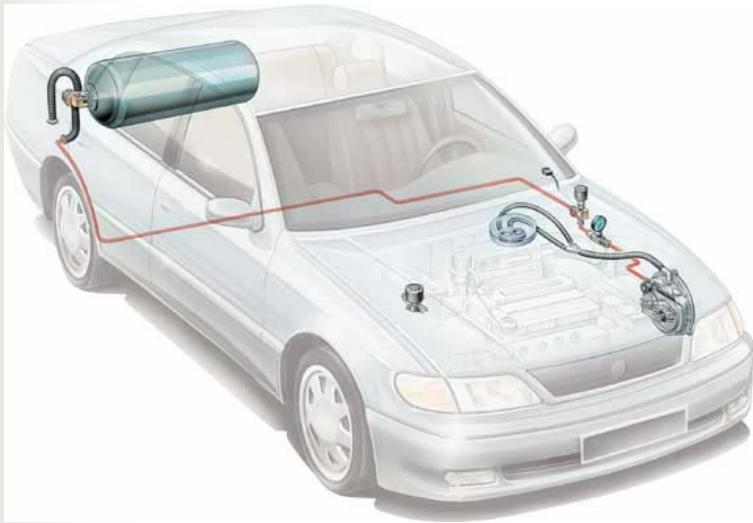
- If NGV's are unable to demonstrate lower emissions than existing gasoline or diesel vehicles, these taxation benefits may not be sustainable

NGV Must Maintain its Emissions Advantage



- New Technology Gasoline and Diesel Vehicles are much cleaner compared to 20 years ago
- They also have very advanced electronics and fuel injection systems

NGV Must Maintain its Emissions Advantage



- The use of old NGV conversion technology on new vehicles can result in NGV's with poor performance and higher tailpipe emissions than when running on gasoline or diesel

A Chance to Avoid the Mistakes of the Past



- For economies now beginning to embracing alternative fuels, it is a very good opportunity to begin with the most advanced conversion technology available
- For example, California embraces a strategy to use only the cleanest, available commercial technology

A Chance to Avoid the Mistakes of the Past



- In Canada, a mandatory tailpipe emission testing program, AirCare, revealed a failure rate on CNG / LPG double that of gasoline, when poor conversion technology used in the late 1980's



ECO Digital Injection



- the *edi* is the most advanced digital sequential injection controller available today for the CNG / LPG aftermarket



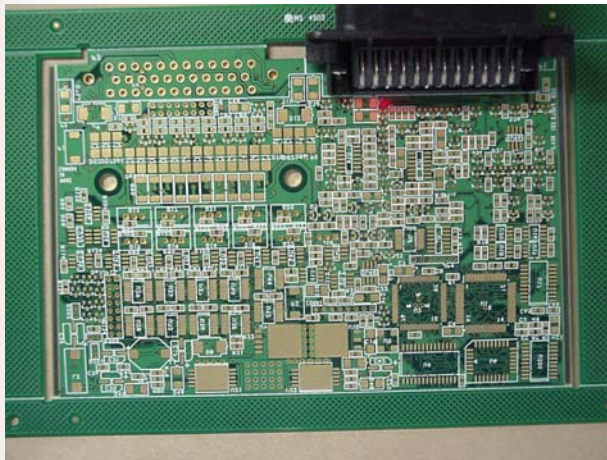
ECO Digital Injection



- *edi* uses advanced Motorola 6812 automotive-grade processors to provide a “smart” piggyback injection strategy to optimize operation on alternative fuel



ECO Digital Injection



- *edi* uses a 4 layer PCB design to optimize injection control and simulate gasoline injection pulse feedback for bi-fuel operation



ECO Digital Injection



- *edi* uses proprietary bus/OBDII communications protocol to establish link to vehicle's on-board diagnostic systems
- Ability to monitor OBDII features such as LTFT and STFT



ECO Digital Injection



- *edi* components are designed and built to rigorous SAE automotive specifications (-40 to +125C) – for long- term reliability in hot or cold operating environment



Software-Controlled



- the *edi* can be custom-calibrated through software to optimize fuel and component combinations on many modern vehicle / engine applications



Product Support



- the unrelenting automotive environment requires technical support – including documentation, technical support processes, and training programs



Product Support



- ECOPRO software link and SmartCable interface enables trained technicians to use PC diagnostics, graphing, and programming capabilities



Product Support



- ECOPRO software can be supported remotely through “GlobeLink” modem-based support-assist
- ECO’s technical support staff can “dial-in” to support a linked-up vehicle worldwide



Hardware Flexibility



- *edi* does not use dedicated injector drivers; rather, uses programmable PIC processors



- can be used with a large variety of injectors and pressure regulators on the market to suit local conditions and economics



Hardware Flexibility



- *edi* has been used successfully with a variety of high-precision CNG / LPG and H2 injectors:
 - Bosch
 - Siemens
 - Quantum
 - Keihin
 - others



Hardware Flexibility



- The *edi's* injector versatility engineering allows the ability to optimize injector selection based on suitability, availability, and pricing



Hardware Flexibility



- ECO has chosen to specialize in the “brain,” or ECM of the conversion system
- Not “one stop shopping” but as supplier of key fuel system component



Hardware Flexibility



- ECO can assist in recommending complementing hardware components to suit market characteristics and budgetary concerns



Emission Control



- This technology is used on CNG and LPG certified vehicles meeting the stringent US Environmental Protection Agency (US EPA) emission standards





Export Markets



- While chief markets are in the US and Canada, the product is currently exported and promoted to other growing NGV markets including Japan, Australia, Mexico, and parts of Europe and the Middle East





Export Markets?



ECO Fuel Systems Inc.

- ECO Fuel Systems is interested in licensing this advanced injection system technology for localization and lower-cost production in growing CNG markets like India

Thank You!



ECO Fuel Systems Inc.

- Please contact me for more information on our alternative fuel solutions
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