City of Kingsport

Tennessee

Propane as Vehicle Fuel: Where the Rubber Meets the Road in a Municipal Environment
HISTORY

FY07 – BMA mandated a directive to reduce fuel consumption, seek cost cutting strategies and GREEN the fleet

FY07 – Biodiesel – State of Tennessee Grant Match
FY07 – First Hybrid purchased

FY08 – First full electric vehicle purchased - ZAP 3 Wheel for Waste Treatment Plant

FY10 – First Propane Conversions with Virginia Clean Cities Grant – 2 VCC Grant Conversions

FY11 – Second Propane Conversions with Virginia Clean Cities Grant – 10 VCC Grant Conversions – 3 State of Tennessee
FY11 – Propane fuel became part of new unit specifications on applicable units – Discontinued Practice in FY13

FY 12 – 7 Propane Conversions

FY13 – Awarded Grant - Tennessee Emission Reduction to purchase three electric sedans to replace gasoline models –
FY13 – 9 Propane Conversions
FY13 – Electric Salt Spreaders replaced gasoline counterparts

FY14 – 12 Propane Conversions
FY15 – 25 Propane Conversions
FY16 – 9 Propane Conversions
FY19 – 21 Propane Conversions – In Planning
ALTERNATIVE ENERGY FLEET APPLICATIONS

- Electric – Rechargeable Electric 3 Wheeled unit for Waste Treatment Plant
- Dedicated Electric – Nissan Leaf- Fleet Motor Pool, Water Department Admin, Police - Code Enforce (3)
- Dedicated Electric – Pickup Truck Salt Spreaders (10)

- Hybrid – Gas/Electric – Administrative Vehicles used by Public Works, Police, Schools – (27)
- Hybrid – Diesel/ Electric – Transportation Bucket Truck (1)

- Bi-fuel – Gasoline/ Propane PRINZ Systems– Police Cruisers, Pickup Trucks, Utility Body Trucks
- Dedicated Propane ROUSH – Building Maintenance Cargo Van
- OEM Propane Zero Turn Mowers – Skag Turf Tiger, John Deere
Current Propane Equipped Fleet

- 1 – Dedicated Propane Equipped Van
- 17 – Bi Fuel – PRINZ - Utility Body Trucks
- 16 – Bi Fuel – PRINZ - Pickup Trucks
- 48 – Bi Fuel – PRINZ - Police Cars
- 11 – Dedicated Propane Zero Turn Mower
  - Skag, John Deere
- 4 – Dedicated Propane Forklifts

97 Total
Calculating Potential Savings

- Savings calculations based on 100% propane consumption consideration
- Propane consumption has to be monitored
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$2.91/pt Avg. Gas Price $1.6654 Avg. Propane Price
54,377 663,337 761,413 98,076 707,036 2,806 9,976 12,282 78.78%
PROPANE PROS

KINGSPORT’S EXPERIENCE

• Environmental Benefits
• Fuel Savings
• Improved Vehicle Performance
• Employee Appreciation
• Public Perception
• Creates American Jobs
Benefits

• Since 2011, Kingsport has used 333,121 gallons of propane as a motor fuel which has reduced CO2 emissions by 289 short tons
• Since 2011, Kingsport has saved the local taxpayer an estimated $250,000 in refueling costs
AND CONSIDERATIONS
KINGSPORT’S EXPERIENCE

• Unrealistic Expectations
• *Availability for Applications in a Fleet are Limited*
• Operating - Employee Trepidation and Concerns
• *Vendor Participation*
• Vendor Support
• *Potential Extended Delivery or In Service Times*
• Warranty Issues
• *Technician Training Needs and Costs*
• Maintenance Facility Upgrades for Gaseous Fuels
• *Vehicle Storage Issues*
• Emergency Response Issues
• *Issues arising due to the Nation’s transition of energy types*
TIPS FOR SUCCESS

• Cultivate, Cultivate, Cultivate Your Vendors, Supplier, and Upfitter Relationships
• Train and Educate Your Vendors, Suppliers, and Upfitters
• Be Clear and Definitive About Objectives & Expectations
• Understand All the Processes Involved
• Host Pre-bid Conferences if Conversions Included in Vehicle Specifications
• Introduce Your Vendors, Suppliers and Upfitters to Each Other
• Don’t Expect The Impossible
• Sell The Cost Savings Upward and the Performance Downward
• Provided User Support and Customer Service
• Address Vehicle Performance Issues Quickly
• ABOVE ALL - BE PATIENT
2011 Ford F150 Bi Fuel
2014 Ford F450 Bi Fuel
2013 Dodge Charger Bi Fuel
2014 F350 Ford Bi Fuel
THANK YOU

CONTACT INFORMATION

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