The Low – Hanging Fruit of Energy Cost Savings:
*Alternative Fuel Vehicles and LED Lighting Projects*

**Event Energy Partners LLC**

---

**Moderator:**
Joy Kramer, CEO Event Energy Partners LLC 678-390-2737
Event Energy Partners is a meeting and event contractor focused on economic development and sustainability initiatives for government, transportation and commercial organizations.

**Presenters:**
- Ian Skelton, Atlanta Gas Light - Southern Company Gas
- Chris Strippelhoff, Municipal Gas Authority of Georgia
- Jenna VanHarpen, Blue Bird Bus
- John Noel, Energy + Environment
- Peter Floyd, Esq, Alston + Bird

---
Learning Objectives

At the end of this session, you will be able to
• Discuss ROI analysis for vehicle conversion projects
• Recall considerations for on-site fueling infrastructure
• Evaluate the costs and benefits of LED lighting for facilities, roads, and parks
• Recall the financing tools for energy efficiency projects

Getting to Know Natural Gas

- Vehicles
- Efficiency
- Fueling
- ROI

Ian Skelton – Director of Natural Gas Vehicles, AGL
Chris Strippelhoff – Municipal Gas Authority of Georgia
Poll Question
Does your government currently use alternatively fueled vehicles?

Yes

No

Market Drivers for NGVs

Abundant Domestic Energy Supply
• 98% produced in North America
• Development of shale has increased supply to > 100 years

Reduced Emissions
• Reduces emissions up to 90% over diesel and gasoline
• Meets EPA requirements without Diesel Particulate Filters (DPF), Diesel Exhaust Fluid (DEF), etc.

Reduced Greenhouse Gases
• NGVs emit 13 - 21% less GHG than diesel and gasoline

Cost Savings
• Last 12 months NYMEX settlement price = $0.31/therm
• $0.31 x 1.25 therms/Gasoline Gallon Equivalent = $0.38/GGE
• Underlying commodity is $0.38/Gallon!
**CNG Units and Conversions**

**State of Georgia Rule 560-9-1-.07**

Equivalency table:

1 Therm = 100,000 BTUs
1 gallon of regular-grade gasoline = 124,000 BTUs
1 Therm = .8 gallons of regular-grade gasoline

“To calculate the gallon-equivalent basis of compressed natural gas, multiply the amount of Therms by 0.8, then multiply result by applicable motor fuel excise tax.”

Note: 1 gallon of diesel is approximately 138,000 Btus, or 1.38 therms

---

**Typical CNG Vehicles**

**Ford - Qualified Vehicle Modifier (QVM)**

Gaseous prep option on:

- F-150 thru F-750
- Transit Connect
- Transit
- E-series cutaway
- F-53/F-59 stripped chassis

**Refuse trucks from McNeilus, Heil, etc.**

- Cummins-Westport Low NOx engine reduces NOx emissions by 90% compared to diesel
- Various tank configurations

**Class 8 Tractor-Trailers**

- New Cummins-Westport 12L engine can haul 80,000 lb. loads
- New CNG tank packages provide the required range
PRICING CHARACTERISTICS

- Natural gas is only about 1/4 of the total cost of CNG vs. 2/3 of the total price for gasoline, giving CNG a dampener against price volatility.

- Also, this means more of our fuel dollars stay in the state of Georgia which is better for our local economy.

CNG Proforma

<table>
<thead>
<tr>
<th>Year</th>
<th>Escalator</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>10,000</td>
<td>150,000</td>
<td>200,000</td>
<td>200,000</td>
<td>200,000</td>
<td>200,000</td>
<td>200,000</td>
<td>200,000</td>
<td>200,000</td>
<td>200,000</td>
</tr>
<tr>
<td>Heavy Duty Vehicles</td>
<td>Diesel Gals/yr/vehicle</td>
<td>$2.25</td>
<td>$234,000</td>
<td>$365,040</td>
<td>$506,189</td>
<td>$526,436</td>
<td>$547,494</td>
<td>$567,110</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Crude Oil</td>
<td>$1.20</td>
<td>$24,336</td>
<td>$37,964</td>
<td>$52,644</td>
<td>$54,749</td>
<td>$56,939</td>
<td>$59,275</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total Fuel Cost</td>
<td>$258,336</td>
<td>$403,004</td>
<td>$558,832</td>
<td>$581,186</td>
<td>$604,433</td>
<td>$628,149</td>
<td>$652,385</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total Gasoline Gals (GGE)/Yr</td>
<td>$122,000</td>
<td>$183,000</td>
<td>$244,000</td>
<td>$244,000</td>
<td>$244,000</td>
<td>$244,000</td>
<td>$244,000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total Gasoline/Diesel Cost ($/GGE)</td>
<td>$2.12</td>
<td>$2.20</td>
<td>$2.29</td>
<td>$2.38</td>
<td>$2.48</td>
<td>$3.01</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# CNG Proforma

<table>
<thead>
<tr>
<th>NYMEX $/mmbtu</th>
<th>$3.10 Escalator</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gas Cost $/GGE</strong></td>
<td>$0.54</td>
<td>$6.88</td>
<td>$10.23</td>
<td>$13.92</td>
<td>$14.19</td>
<td>$14.80</td>
<td>$15.98</td>
<td>$159.87</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>CNG Station Cost</strong></td>
<td>$1,500,000</td>
<td>$101,973</td>
<td>$101,973</td>
<td>$101,973</td>
<td>$101,973</td>
<td>$101,973</td>
<td>$101,973</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Station Maintenance</strong></td>
<td>$33,760</td>
<td>$38,640</td>
<td>$43,520</td>
<td>$43,520</td>
<td>$43,520</td>
<td>$43,520</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Average Electricity Cost ($/GGE)</strong></td>
<td>$0.15</td>
<td>$18.48</td>
<td>$28.00</td>
<td>$37.71</td>
<td>$38.09</td>
<td>$38.47</td>
<td>$40.43</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Software Expense</strong></td>
<td>$3,000</td>
<td>$3,000</td>
<td>$3,000</td>
<td>$3,000</td>
<td>$3,000</td>
<td>$3,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Telecom Expense</strong></td>
<td>$4,000</td>
<td>$4,000</td>
<td>$4,000</td>
<td>$4,000</td>
<td>$4,000</td>
<td>$4,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Insurance Expense</strong></td>
<td>$15,000</td>
<td>$15,000</td>
<td>$15,000</td>
<td>$15,000</td>
<td>$15,000</td>
<td>$15,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Merchant Card Charges</strong></td>
<td>2.5%</td>
<td>$6.08</td>
<td>$7.32</td>
<td>$8.62</td>
<td>$8.68</td>
<td>$8.76</td>
<td>$9.19</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>CNG Cost (not incl. taxes)</strong></td>
<td>$249,180</td>
<td>$300,274</td>
<td>$352,988</td>
<td>$356,228</td>
<td>$359,529</td>
<td>$376,988</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>CNG Cost ($/GGE)</strong></td>
<td>$2.04</td>
<td>$1.64</td>
<td>$1.45</td>
<td>$1.46</td>
<td>$1.47</td>
<td>$1.55</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total Annual Savings</strong></td>
<td>$9,156</td>
<td>$102,730</td>
<td>$205,844</td>
<td>$224,958</td>
<td>$244,904</td>
<td>$358,398</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Savings ($/GGE)</strong></td>
<td>$0.08</td>
<td>$0.56</td>
<td>$0.84</td>
<td>$0.92</td>
<td>$1.00</td>
<td>$1.47</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Cumulative Savings</strong></td>
<td>$9,156</td>
<td>$111,886</td>
<td>$317,730</td>
<td>$542,688</td>
<td>$787,592</td>
<td>$2,342,980</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Potential Funding for CNG

**Federal Volumetric Excise Tax Credit (VETC)**
$0.50 per GGE
Available even if entity doesn’t pay federal excise tax
Expired 12/31/16 but could be reinstated as in years past

**Grants** - Work with your Clean Cities Coalition, MPO and Regional EPA Collaborative!
DOE Clean Cities - Alternative fuels, petroleum reduction
EPA DERA “Clean Diesel Campaign” - CNG is eligible
DOT Congestion Mitigation & Air Quality (CMAQ)
FAA VALE grants for airports
FTA grants for transit

**VW Settlement**
$60 Million for Georgia NOx mitigation
Funds up to 100% for Class 4 – 8 CNG vehicles replacing diesel
Diesel and gasoline prices are more volatile, but natural gas provides long-term fuel cost savings.

**Natural Gas vs. Oil:**
- 3:1 price advantage over oil on a Btu basis
- Pump prices $0.75 to $1 lower than diesel

**Natural Gas Provides Fuel Price Stability**

- Natural Gas: Decades of affordable domestic reserves, Natural gas sourced from North America, Commodity cost makes up 23% of sales price
- Diesel: History of volatile price swings, Crude oil sourced from high-conflict regions, Commodity cost makes up 60% of sales price

Projected Fuel-Price Differential

Source: U.S. Energy Information Administration
Depending on range and application, fleets can realize a pay back in as little as 18–24 months due to:

- Lower fuel costs
- Lower maintenance costs

Incentives reduce the pay back time frame
School/Transit Bus and NGV Availability

Refuse Vehicles and NGV Availability
Natural gas vehicles are up to 3x quieter than their diesel counterparts and significantly reduce noise and air pollution in the local community.

KEY ACTION STEPS

ACTION I: Review your fleet operations and determine:
1) Which vehicles are consuming the most fuel.
2) Which vehicles are returning to base daily.
3) Where is the overlap?

ACTION II: Research other fleet operators in your community and consider them as potential partners in building a CNG fueling station.

ACTION III: Contact your natural gas provider, or one of us for assistance.
Getting to Know **PROPAINE AUTOGAS:**

- Vehicles
- Efficiency
- Fueling
- ROI

*Jenna VanHarpen – Director of Alternative Fuels, Blue Bird*
What is Propane Autogas?

- Abundant Domestic Fuel:
  - 90% of propane used in the U.S. comes from the U.S.
  - 7% of propane used in the U.S. comes from Canada
  - Major natural gas shale found in northeast U.S.

- Growing Acceptance:
  - Largest public refueling infrastructure of any alternative fuel
  - Powers over 23 million vehicles worldwide
  - Price gap continues to widen

- Environmentally Friendly:
  - 60% reduction in Nitrogen Oxide (NOx) emissions
  - 80% reduction in Hydrocarbon emissions
  - 100% reduction in Particulate Matter (PM) emissions

- Fuel Safety:
  - Low operating pressure (150-250 psi)
  - Narrow flammability range

Where Does it Come From?

- U.S. Natural Gas Shale Deposits
Benefits: Environmental

- Propane poses no harm to groundwater, surface water, or soil
- Propane autogas is a nontoxic, non-carcinogenic, and non-corrosive fuel
- Emissions reductions compared to diesel:
  - 60% less NOx emissions
  - 80% reduction in Hydrocarbons
  - 100% reductions in Particulate Matter
- Today we meet the next level of EPA emissions for 2016
Benefits: Cold Weather Performance

- Brandon winter runs
  - In-city lift bus route
  - Ambient temp: Start -24°F End -11°F
  - Wind chill: Start -47°F End -34°F
  - Cabin temp: 69°F within 20 mins

- Starts in -50°F temperature

- Does not require a block heater

- Quicker cabin heat than diesel

- Drivers report rear windows remain clear

Our Partnership

Blue Bird
Roush Clean Tech
Blue Bird Propane History

✓ Propane is a by-product of natural gas and petroleum, occurring naturally during domestic oil refining and natural gas processing.
  ✓ 97% Produced in North America

- **GEN 1** - Launched in 1992 - Vapor System Technology
- **GEN 2** - Launched in 2007 - First liquid injection system with the GM8.1L /PTI/Clean-Fuel Technology
- **GEN 3** - Launched in 2011 - Ford / ROUSH CleanTech technology
- **GEN 4** - Launched in 2014 - This is our current Ford / ROUSH CleanTech system

We have listened to the owners and technicians and made considerable improvements regarding maintenance accessibility, performance and emissions.

Blue Bird Propane Deployments

- Over 10,000 propane powered Blue Bird Visions sold since introduction
- 275 Propane Blue Bird Buses in GEORGIA (Bibb, Valdosta, Fulton, Paulding)
Why Propane?

- **COST SAVINGS**
  - Districts report savings of up to $0.37 per mile

- **NOISE REDUCTION**
  - Up to 40% quieter

- **COLD STARTS**
  - Starts in temperatures as low as -30°F

- **LOWEST EMISSIONS**
  - Incredibly reduced emissions

Maintenance Components
Real World Savings with Propane

- Our customers report
  - $0.77 per mile on diesel buses
  - $0.43 per mile on propane buses

- That's a savings of $0.34 per mile, which means.....

- If you drive 12,000 miles per year and operate for 15 years...
  - 1 bus saves $4,080 in 1 year
  - 1 bus saves $61,200 in its lifetime

**Total Cost of Ownership (TCO) Calculator available for YOUR fleet**

Our Propane Buses win when it comes to Total Cost of Ownership!

Emissions/Green House Gas (GHG)

- Blue Bird’s Gen 4 Ford/ROUSH propane system is 50% cleaner than Gen 3 without any intensive after treatment systems

- Blue Bird’s Gen 4 is in the best place to meet future GHG emission standards, without significant changes

- Now that NOx and PM emissions have been achieved, GHG emissions are the next to be regulated
  - Carbon Dioxide (CO₂)
  - Nitrous Oxide (N₂O)

- GHG emission changes
  - 2017
  - 2020
  - 2023
  - 2027 (possibly)

Changes in Regulations Means We can Expect Higher Vehicle Costs with More Equipment to Maintain
What Customers Should Know

Complexity and costs are estimated to continue increasing over the next few years as the new Green House Gas emission standards come into play.

EPA and NHTSA, on behalf of the Department of Transportation, are each proposing rules to establish a comprehensive Phase 2 Heavy-Duty (HD) National Program that will reduce greenhouse gas (GHG) emissions and fuel consumption for new on-road heavy-duty vehicles including buses. This technology-advancing program would phase in over the long-term, beginning in the 2021 model year and culminating in standards for model year 2024 or 2027 depending on the final rule.

The agencies estimate that the additional costs to meet the proposed standards for vocational vehicles is in the range of $1,150 to $1,990 per vehicle in the first year (2021) and $1,770 to $3,590 per vehicle in years 2024-27.

Infrastructure

- **Public Stations**
  - Over 3,000 nationally
  - Higher per-gallon price

- **Private Stations**
  - Buy or lease equipment (500, 1000, 2000, 5000 Gallon + Tanks)
  - Lower per-gallon price
  - Lock in fuel price with annual contract
  - $.36 Rebate for 2016

- **Temporary Options**
  - Wet-Fueling (Delivery truck)
  - Quickest to get customer fueling
  - Usually a short-term strategy
Building a Strong Foundation

- Certified to a .05 g/bhp-hr NOx
- Reliable Technology & Robust Service Program
- Committed Industry leading partners
- 700 plus Customers & 300 Million Miles of Data

What is Nox and what does it mean?
VW Update

- Volkswagen must contribute $2.925 billion to the Environmental Mitigation Trust (EMT)
  - The purpose of this trust is to fund actions that reduce NOx emissions

- Each state receives a set amount based on number of affected vehicles sold in the state: Georgia’s Share: $58M

- Eligible projects include:
  - Class 4-8 school bus, shuttle bus or transit bus replacement
  - Class 4-7 medium duty truck replacement
  - Class 8 freight and drayage (port) trucks
  - Airport ground service equipment (electric only)
  - Forklifts (electric only)

EMT Funding Timeline

10.25.16 Settlement Effective Date
8.15.17 Wilmington Appointed Trustee
8.31.17 Trustee Effective Date (potentially)
10.30.17 State Beneficiary Named
1.8.18 State Files Mitigation Plans (must be public, for 30 days)
2.7.18 Trustee Approval

60 days 90 days 30 days
### Clean School Bus Program Example

<table>
<thead>
<tr>
<th>Clean School Bus Program Assumptions</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Buses Operating in Example State (# Units)</td>
<td>50,000</td>
</tr>
<tr>
<td>Est. Pre-2009 Buses in Operation (# Units)</td>
<td>17,500</td>
</tr>
<tr>
<td>Est. Cost of 2018 Model Year Diesel Bus ($)</td>
<td>$90,000</td>
</tr>
<tr>
<td>Est. Cost of 2018 Model Year Propane Bus ($)</td>
<td>$98,000</td>
</tr>
<tr>
<td>Est. Cost of 2018 Model Year CNG Bus ($)</td>
<td>$125,000</td>
</tr>
<tr>
<td>Clean School Bus Incentive (% of bus cost)</td>
<td>25%</td>
</tr>
<tr>
<td>Total Example State EMT Allocation ($)</td>
<td>$100,000,000</td>
</tr>
<tr>
<td>School Bus, One-Quarter Funding Allocation Scenario ($)</td>
<td>$25,000,000</td>
</tr>
<tr>
<td>Propane Bus Incentive ($), Based on 25% of Total Bus Cost</td>
<td>$24,500</td>
</tr>
<tr>
<td>CNG Bus Incentive ($), Based on 25% of Total Bus Cost</td>
<td>$31,250</td>
</tr>
<tr>
<td>Number of Estimated Bus Replacements, Propane Scenario</td>
<td>1,020</td>
</tr>
<tr>
<td>Number of Estimated Bus Replacements, CNG Scenario</td>
<td>800</td>
</tr>
</tbody>
</table>

### Diesel Displacement

<table>
<thead>
<tr>
<th>Metric</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Miles Per Year</td>
<td>12,600</td>
</tr>
<tr>
<td>MPG</td>
<td>7</td>
</tr>
<tr>
<td>Gallons Per Year</td>
<td>1,800</td>
</tr>
<tr>
<td>Petroleum Displacement Impact Per Year, 1,020 Buses (Gallons of Diesel Displaced)</td>
<td>1,836,000</td>
</tr>
<tr>
<td>Total Program Petroleum Displacement Impact, 1,020 Buses over 15 Year Service Life (Gallons of Diesel Displaced)</td>
<td>27,540,000</td>
</tr>
</tbody>
</table>

### Getting to Know Energy Efficient Lighting:

- **Street lights**
- **Building Exteriors**
- **Parking Lots**
- **Parks**

*John Noel– CEO Energy + Environment, Candidate for Public Service Commission*
Poll Question

Does your government have any energy efficient lighting projects?

Yes

No

The Low Hanging Fruit: Energy Efficient Lighting
About Us

- Founded in 1999
- Energy efficiency experts
- Transform environments with LED lighting solutions
- Save money on bills and maintenance
- Projects throughout US, including Hawaii & Alaska

People, Planet, Profit

Why Efficient Lighting Matters

Report: Efficiency is a More Important Economic Driver Than Energy Supply

A new analysis concludes that economic productivity is driven more by energy efficiency than energy production.
Lighting Upgrade Benefits

- Reduce operating costs
- Reduce HVAC “load”
- Reduce maintenance
- Reduce carbon footprint
- Improve quality of light

Do I Need a Lighting Upgrade?

- Do you have older lighting technology? Metal halide, high pressure sodium, even T12/T8 fluorescent?
- Has your facility layout changed but lighting layout hasn’t?
- Do sustainability initiatives factor in?
Lighting Upgrade Overview

- **Lighting Assessment**
  Evaluation of your current lighting output and energy use – what’s working and what’s not.

- **Lighting Design**
  Design should address lighting needs found during assessment – may reduce number of fixtures, definitely reduces wattage

- **Installation**
  A crew installs your new lighting solution - may include lighting controls or electric vehicle charging stations

- **Transformation**
  Better light quality, improved safety on site and even increased productivity

Evolution of Lighting Efficiency

- Rapidly changing technology
- Large efficiency gains from incandescent to CFL to LED
- Significant reduction on electric bills
- Technology affordable
- Rebates
Impact of Lighting Upgrade

![Before and After Lighting Photos]

Energy Efficiency Options

- Domestic Water Consumption (Bathroom, Sinks/Toilets)
- Hot Water (Tanks & Boilers) Systems (Kitchens, Industrial Processes)
- Building Envelope ("Skin", Roof, Windows, Insulation)
- Mechanical Systems & Controls
- Appliances (Copiers, Refrigerators, Computers)
- Window Film (Solar Gain)
- Waste Heat Recovery
- HVAC optimization (BesTec Motor Control)
Financing Tools

- Alternatively Fueled Vehicles (AFVs)
- Fueling Infrastructure
- Lighting Retrofits
- Renewable Energy

Georgia AFV & Other Operating Cost Savings Opportunities – Local Government Financing

Innovative Intergovernmental & Public Private Partnerships

Peter K. Floyd, Esq.
Alston & Bird, LLP
Get to the Point

**Decide:** whether Lighting Retrofits, AFVs, fueling charging stations, or Renewable Energy is right for you
- operational cost savings
- sustainability strategy

**The Bigger the Better:** There are more financing tools and efficiency savings available for larger projects

**Collaborate:** Multiple local governments should consider working together and with local business regionally to define a cohesive plan and take advantage of economies of scale

---

**All Financing Options Available**

*For efficiency/operational savings projects, including AFV projects*

- Traditional “non-appropriations” lease financing:
  - GMA or ACCG COPs programs and ESCO/GEPS

- Revenue bonds:
  - sales to the public or as one component of a larger revenue system

- Back door general obligation (GO) revenue bonds:
  - intergovernmental contract or intergovernmental contracts (two versions: gov. customer or true backdoor GO)

- Traditional GO Bonds:
  - Full tax base pledged bonds

- Special Option Sales Tax (SPLOST) Bonds

- TADs and Community Improvement Districts (CID)
Federal Loans: Up to $25,000,000  
State Funded: Up to $3,000,000  
Georgia VW Settlement: $58,000,000

Georgia Environmental Finance Authority

- Low Interest Loans
- State Energy Programs: The State Energy Program (SEP) provides financial assistance and technical support to Georgia's energy efficiency and renewable energy programs.
  - Solar Program
  - Biogas Technical Assistance Program
  - School Technical Assistance Program
  - Building Operator Certification
- Performance Energy Contracting
- Fuel Storage Tank Program
- Georgia Energy Challenge State Utilities Program

www.gefa.ga.gov
Other Back Door GO Lease Financing Obligations

- City of Covington Compressed Natural Gas Station – principal amount $1.6 million

- City of Douglas Compressed Natural Gas Station – principal amount $1.2 million

Landfill Gas-to-Energy Projects

- Conversion of landfill gas to natural gas for direct use or to feed into gas pipeline

- Conversion of landfill gas to renewable fuels and chemicals from biogas using gas-to-liquids (GTL) technology
  - Compressed Natural Gas (CNG)
  - Liquefied Natural Gas (LNG)
Public Private Partnerships

amp Trillium, LLC Opens First Public CNG Station in Perry, Ga. to Serve Frito-Lay’s Fleet - CHICAGO, IL--(Marketwired - Mar 26, 2014)

Local government can:
1. Finance and own station and lease to operator
2. Be a customer
3. Be a natural gas supplier
4. Finance/negotiate economic incentives

Joint Action

• Sharing in the investment risks and now rewards through the Joint Development Authority (JDA) is a great example of intergovernmental relationships used effectively

• Infrastructure is also being developed with the share risk/reward model
  • e.g., Covington, Madison and Social Circles joint funding, development, ownership and operating of the Stanton Springs Gas System
Knowledge Check

Which of the following are acceptable financing methods for energy efficiency projects?

A. SPLOST  
B. Revenue bonds  
C. GO bonds  
D. Lease financing  
E. All of the above are acceptable financing methods
Connect With Us!

Facebook
facebook.com/VinsonInstitute

Twitter
@CVIOG_UGA

LinkedIn
Carl Vinson Institute of Government

www.cviog.uga.edu