Progress on the USVI Propane Project

Virgin Islands Water and Power Authority

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Virgin Islands Water & Power Authority

- Government Owned Utility
- Primary Source of Water & Power Production & Distribution in the Territory
  - Power Generation Capability – (92% fuel oil / 8% renewable -solar)
    - St. Thomas/ St. John - 189 MW
    - St. Croix - 122 MW
- Water Production Capability (R.O.)
  - St. Thomas/St. John – 3.3 MGD (current ) w/1.1 MGD option
  - St. Croix - 3.7 MGD (current ) w/1.1 MGD option
- Customers
  - Water - 12,300
  - Electric – 55,000
- Territorial Peak Power
  - St. Thomas/St. John - 58 MW min. - 65 MW max. (seasonal avg.)
  - St. Croix - 33 MW min. - 39 MW max. (seasonal avg.)
- Fiscal Year 2014 Operating Expense: $330,710,000 (unaudited)
  - $231,479,000 - Fuel Oil Cost
  - 70% Fiscal Year 2014 Operating Expense
Cost of Power

- Fuel cost is $0.28 per kwh; customer cost is $0.39 - 0.42 per kwh
- This is the highest cost for electricity compared with any other U.S. state, territory or possession
- Two independent power generating facilities that are not able to be interconnected due to very deep water depths between islands
- Closure of the HOVENS refinery resulted in loss of approximately $50 million in fuel oil savings from incentive pricing
  - Significant adverse impact on Territory’s residents and economy
  - Currently exposed to fuel price of 50% Platts/50% Argus USGC No2 WBM Indices + a negotiated premium
Propane Project Agreement

- In July 2013, the Authority entered into a 7-year power purchase contract (now revised to 10-year contract) with Vitol
- Project entails conversion of 7 gas turbines, supply of propane in conjunction with the design, construction and operation of the required infrastructure to receive, store, vaporize, measure and deliver LPG on the Islands of St. Thomas and St. Croix
- Vitol - responsible for engineering, procurement, construction (EPC), and commissioning of the projects
- Project cost - approximately $150 million
- All upfront costs - paid by Vitol
- WAPA repays Vitol over a 10-year amortization (option to repay in 7 years), built into the fuel cost
- The 30% reduction in fuel cost still expected based on agreed adjustments to the contract between WAPA and Vitol to the amortization (from 7 years to 10 years)
Project Overview

- First class project
  - Safety measures
    - Monitoring and detection, w/ state-of-the-art technologies
  - Best industry practices
  - Environmental benefits
    - Reduce NOx, SOx, and CO2 emissions
  - Economic benefits
    - Fuel savings derived from low propane prices compared to diesel and savings in working capital for WAPA as fuel inventory is carried by Vitol
    - $100 Million invested by Vitol to date
- More than 200,768 man hours expended on both STT and STX, with approximately 130,000 hours of local USVI man hours
  - Contracted directly or indirectly numerous local contractors for various parcels of scope
- Construction duration: 12-14 months after initial FEED and permitting
  - FEED completed October 2014
Project Status

- Throughout the propane conversion process, complicated and unforeseen circumstances impacted the project progress and completion schedule
  - Adverse weather conditions
  - Undocumented soil conditions
  - Underground obstacles
  - Volume of rock needed to be removed was much greater than anticipated
- Notwithstanding, the projects progressed positively and have already achieved many accomplishments
  - St. Croix project is expected to be completed by the end of 1st quarter 2015
  - St. Thomas project to be completed 6-8 weeks after

- Other circumstances which contributed to the project schedule adjustments
  - Greater challenges than anticipated in coordinating the conversion of the power plants to safely burn propane while simultaneously operating the facilities to meet daily electricity demand
Project Status

- Extended work required for the design, procurement and installation of the necessary resources to upgrade existing fire protection, controls and other systems for the safe use of propane
- Complexity in permitting, contracting, demolishing and disposing of structures with lead-based paint
- Reality of global sourcing of all the materials and equipment for the project
- Additional regulatory requirements to further assure compliance with safety and security of the project’s marine scope, which included new engineering and redesigns
Procurement

- Sourced & delivered long lead items (Storage Tanks, Valves, Vaporizers, Emergency Generators, etc.)
  - 80% delivered and other 20% in transit
- Contractor for marine works (jetty, docking facilities and the permanent mooring for the VLGC) retained and will mobilize upon receipt of ACOE permit
  - Only phase of project work not commenced
    - 4 weeks of work anticipated on St. Croix
    - 6-8 weeks of work anticipated on St. Thomas

Fabrication of 18 propane storage tanks completed and delivered to WAPA

- 8 storage tanks for the St. Croix project are in permanent installation phase
- 10 tanks for St. Thomas project are currently stored at the St. Croix Container Port
  - Scheduled for transport and installation beginning February 2015

<table>
<thead>
<tr>
<th>Tank Size</th>
<th>St. Croix (8 tanks)</th>
<th>St. Thomas (10 tanks)</th>
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</thead>
<tbody>
<tr>
<td>Total Storage Capacity</td>
<td>10,400 m³</td>
<td>14,000 m³</td>
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<tr>
<td>Effective Supply</td>
<td>19.2 days</td>
<td>18.3 days</td>
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Project Status

- CZM Major Land and Water Permits for both projects are approved

- Initial storm water permits for construction activities for both terminals have been issued
  - Operating storm water permit will be issued after completion of construction

- Federal Water Permits: U.S. Army Corps of Engineers (COE) continues to review applications for both sites
  - No unforeseen obstacle in preventing COE granting of permit
  - Continue to stress importance of the project schedules and commitment associated with them, but have no control of timing of agency review and approval process

- Emergency Response Plans modified & updated to reflect use of LPG
  - Awaiting USCG and US EPA approval. (No issues anticipated)
  - Local emergency response agencies involved in review process

- Waterway Suitability Assessment (WSA) Plan, focuses on the water side safety & security, submitted to USCG and in final approval stage
Project Status

- Completed Comprehensive Fire Risk Assessment and Hazardous Area Classification Study

- Completed Phase 1 design/engineering for upgrade to the facilities fire protection and control system
  - Phase 1 includes all detectors, monitoring and control systems, hazardous area classification changes, etc.
  - Phase 2 includes all upgrades to the plants’ fire water suppression system to bring into regulatory and insurance codes compliance, including API and National Fire Protection Association (NFPA).

- Orienting local first response agencies on plans and design of fire detection and protection systems at facilities.
  - Fire safety features will have 100% redundancy
Project Status

- VITEMA and U.S. Department of Homeland Security - Finalizing an independent vulnerability assessment study to ensure compliance with local and federal mandates for safety and security
  - Ensure all precaution taken to protect the wellbeing of general public, employees and first responders
  - Structured partnership to expand communication on public awareness, safety and security measures of the project

- GE - Mobilized conversion works on turbines
  - 1 unit converted in each district
  - 1 unit per district currently in conversion process

- Two new propane delivery vessels are built and commissioned to deliver liquefied propane to WAPA’s facilities
  - Conducted advance navigation simulation with VI Port Authority marine harbor pilots to ensure safe transit of vessels into and out of WAPA docking facilities
Project Status – St. Thomas

Project Site Prior to Construction Activity

Current View of Project Site
Project Status – St. Croix

Project Site Prior to Construction Activity

Current View of Project Site
Project Status – St. Thomas

Vaporizer Building Construction

Terminal Control Room Under Construction
Raising Utility Lines for LPG Tanks Transport (Feb. 15)

Construction Activity on Tank Mound Side Walls
Project Status – St. Croix

Terminal Control Room Under Construction

All 8 Tanks Permanently Placed for Installation
Backfilling of 4 LPG Tanks

Vaporizer Building Construction
Project Status

Feeder Supply Vessels

Epic Curacao

Epic Caledonia
The LPG Project represents the best near-term option for the US Virgin Islands to significantly reduce the cost of fuel for power generation while ensuring widespread benefits for the Territory.

**St. Croix**
Targeted completion
End of 1st Quarter 2015

**St. Thomas**
Targeted completion
End of 2nd Quarter 2015