Evaluation of Viability for Natural Gas Fired Combined Heat and Power Projects in Florida

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CHP Background / Project Introduction

• FPU electric retail rates are close to the highest in Florida
  – Base rates are among the lowest.
  – Fuel rates are the highest.

• FPU Wholesale Purchase Power Agreements (PPA)
  – Energy Prices range from $95 - $100 per MWH

• Existing Industrial Customers
  – Produce energy well below the wholesale PPA rates
  – Steam requirements constrained
  – Additional energy possible with steam constraint eliminated

• Customer Requests
  – Reduction in total rates possible with PPA reduction
  – Electric reliability improvements during storms
  – Produces positive impact on environment
Next Steps

• Assemble an experienced team of professionals to review the engineering, financial and environmental aspects
  – Determine Objectives
  – Gather Information
  – Identify Projects

• Review of all CHP Technology – One size does “NOT” fit all
  – Turbine – lower efficiency, higher electrical and thermal output
  – Reciprocating Machine - higher efficiency, lower electrical and thermal output

• Analyze the electrical and thermal loads and match with the appropriate CHP technology
  – Electrical Load
  – Steam and Waste Heat Requirements
  – Load Profiles
  – Offsite Sales
Next Steps

• Evaluate Electric Utility and Natural Gas Utility requirements
  – Interconnection Requirements – Voltage, Pressure, Costs
  – Natural Gas and Electric Cost Factors
  – Electricity Sales

• Investigate regulatory, environmental and permitting issues
  – Existing Contracts, Tariffs, State Electric Reliability Compliance Standards
  – FERC, FPSC, DEP, EPA, Local Governments

• Financial Modeling
  – Multi-year sensitivity analysis using appropriate ROI/ROE
  – Ownership Structure – private, utility, joint ownership
  – Consider design, construction, operating, and maintenance cost
  – Factor in tax, revenue stream, productivity, investment benefits
  – Intangible benefits related to reliability, security, environmental improvements

• Risk Mitigation Strategies
  – Fuel supply/costs, electricity costs, equipment costs
  – Construction delays, economy downturn
  – Construction overruns, unexpected maintenance
Conclusions

• Cover all your bases
  • People and Technology
  • Analyze load and utility requirements
  • Investigate regulatory, environmental, permitting issues

• Model, model and more modeling
  • Consider multiple project financial model scenarios
  • Initial and long term cost
  • Includes cost benefits
  • Quantify intangible benefits
  • Mitigate risks to the extent practical

• Win - Win – Win outcomes are possible
  • Owners Can Benefit
  • Investors Can Benefit
  • Even Utilities Can Benefit