Estimating the Value of Your Landfill Gas to Energy Project

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Why Estimate Project Value?

- Critical for capital investment decisions
  - Minimum return threshold to secure financing
  - Demonstrate accountability to taxpayers and constituents
- Identify and quantify risks
  - Varying revenue streams (REC's, carbon, indexed fossil fuels)
  - O&M (collection, utilization, transmission, conditioning)
  - Escalating costs and revenues
- Self-develop or partner with third-party
Key Questions: Technical Feasibility

- Is the Gas There? - Generation
  - Use conservative generation and collection factors
- Can the Gas be Captured?
  - Choose constituents based on end-use
  - Consider pressure & moisture as well
- What are the End Use Options?
- What Conditioning is Required?
- Where is the End-Use? - Transmission
Revenue Streams

- Avoided Cost – Power Generation
  - $/MW
  - Published rates for QFs

- Fuel Sales
  - $/MMBtu
  - May be indexed to fossil fuel

- Royalty Payment
  - From end-user or developer
  - Inclusive of credits/incentives?
Credits and Incentives

Combined Effect to Increase Interest in LFG E

- Renewable Energy Credits
- Carbon Credits
- State and Federal Tax Credits
- Grants and other Incentives
Capital Costs

- Collection System
  - Include periodic expansion?
  - Flare equipped to generate carbon credits?

- Energy Conversion
  - Gensets
  - Retrofit to boilers/process heaters
  - Conditioning/treatment
  - Transmission costs

- Other Costs
  - Engineering/design/permitting
  - Construction/installation
  - Interconnection/R.O.W
O & M

- Collection system
- Gensets/Boilers
  - Determines availability
  - Weigh O&M against treatment costs
- Transmission Pipeline
- Treatment/Conditioning Skid
- Include Power Usage
  - Electrical demands of blowers, chillers, etc.
  - Offset from project or buy from grid?
Economic Analysis

- **Beyond Simple Cashflow and Payback**
- **Net Present Value**
  - Compare today’s dollar to tomorrow’s
  
  \[
  NPV = \sum_{t=1}^{T} \frac{C_t}{(1+r)^t} - C_0
  \]
- **Internal Rate of Return**
  - The expected project rate of growth
  - Can be adjusted to “zero out” NPV
- **Simple Spreadsheet Tools to Calculate NPV and IRR**
  - LMOP LFG Cost Model
  - Customized Workbook Models
Results of Analysis: Should Project Proceed?

- Is the project technically and economically feasible?
  - Does the project meet minimum return on investment?
  - Is project a wise use of taxpayer money?

- Are project risks identified and understood by stakeholders?
  - Can owner assume risks?
  - Should development partner be solicited?
Questions?

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