NYSERDA Anaerobic Digestion Nitty Gritty Workshop

Project Management from Conception to Completion

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## Comparison Summary Costs ($) for the Four Options Analyzed

<table>
<thead>
<tr>
<th></th>
<th>Option I</th>
<th>Option II</th>
<th>Option III</th>
<th>Option IV</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Capital Cost</strong></td>
<td>215,100</td>
<td>482,000</td>
<td>615,850</td>
<td>782,700</td>
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<tr>
<td><strong>Total Capital Cost Per Cow</strong></td>
<td>269</td>
<td>603</td>
<td>770</td>
<td>978</td>
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<tr>
<td><strong>Total Est. Annual Capital Cost</strong></td>
<td>18,400</td>
<td>45,100</td>
<td>59,700</td>
<td>78,300</td>
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<tr>
<td><strong>Total Est. Annual Capital Cost Per Cow</strong></td>
<td>23</td>
<td>56</td>
<td>75</td>
<td>98</td>
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<tr>
<td><strong>Total Est. Annual Operating Cost</strong></td>
<td>12,000</td>
<td>23,700</td>
<td>35,100</td>
<td>51,100</td>
</tr>
<tr>
<td><strong>Total Est. Annual Operating Cost Per Cow</strong></td>
<td>15</td>
<td>30</td>
<td>44</td>
<td>64</td>
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<tr>
<td><strong>Total Est. Annual Cost</strong></td>
<td>30,400</td>
<td>68,800</td>
<td>94,800</td>
<td>129,400</td>
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<tr>
<td><strong>Total Est. Annual Cost Per Cow</strong></td>
<td>38</td>
<td>86</td>
<td>119</td>
<td>162</td>
</tr>
<tr>
<td><strong>Total Est. Annual Revenues</strong></td>
<td>----</td>
<td>66,000</td>
<td>130,000</td>
<td>143,600</td>
</tr>
<tr>
<td><strong>Total Est. Annual Revenues Per Cow</strong></td>
<td>----</td>
<td>82</td>
<td>162</td>
<td>180</td>
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<tr>
<td><strong>Total Est. Annual Cost or Benefit$^1,^2</strong></td>
<td>-30,400</td>
<td>-2,800</td>
<td>35,200</td>
<td>14,200</td>
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<tr>
<td><strong>Total Est. Annual Cost or Benefit Per Cow</strong></td>
<td>-38</td>
<td>-3.50</td>
<td>44</td>
<td>17.80</td>
</tr>
</tbody>
</table>

$^1$ Does not include treatment system electrical use (parasitic power)

$^2$ Negative numbers mean that the farm incurs a net loss from the digester system.
Contract Documents

- Plans
- Specifications
Three Key Words...

- Scope
- Schedule
- Cost
Scope

• Needs to be defined

• Needs to be understood by all

• Needs to be reflected in the contract
Change in Project Scope

- Before contract execution
- After contract execution - $$$
Schedule

• A written articulation of the beginning and ending of the project
  –Ghant Charts
Schedule

• Contracts can be written to require contractors to stay on schedule

• Can be changed if agreed on by both parties, sometimes at a cost
Cost

• Needs to be fixed before signing the contract

• Established based on scope and schedule

• Can change
Payment

• Establish a payment schedule before construction starts

• Establish a retainer for each payment: 5 to 10 percent
Warranty

• Is there a warranty?
• If so, understand is SCOPE of coverage
• Who will service the warranty?
• Understand its implications
Somatic Cell Count
Three Key Words...

- **Scope**
- **Schedule**
- **Cost**
Thank You for Your Attention!

QUESTIONS???