Electricity Quality

Reliability

Resource Adequacy

Refined
The MicroGrid

Generation mix including heat

Storage

Customers=Investors

Variable Quality
Value of Lost Load

- Midwest ISO VOLL Estimates
- Consistent with 70+ N. America & UK Estimates

Median Outage Cost

<table>
<thead>
<tr>
<th>Type</th>
<th>Median Outage Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>1,470</td>
</tr>
<tr>
<td>Large C&amp;I Services</td>
<td>15,560</td>
</tr>
<tr>
<td>Large C&amp;I Other</td>
<td>24,830</td>
</tr>
<tr>
<td>Large C&amp;I Manufacturing</td>
<td>42,090</td>
</tr>
</tbody>
</table>

Distribution of Residential Willingness to Pay (Event of 1 hour Duration)
MacroGrid

- Micro1: High quality
- Micro2: Low Quality
- Micro3: Res Quality
Issues

• Is the MicroGrid a Public Utility?
• Low Voltage System versus High Voltage
• Alternative Suppliers
  – Opt-in, opt-out
• Investment dollars
• Risk