Purpose

“There’s gold in them ‘thar bills”
The benefits of being an active consumer

Overview

- Provide an overview of the utility industry
- Review components of a utility bill
- Discuss strategies to reduce utility expenses
- Review emerging factors and how they may impact utility costs
The “Business” of Utilities

- “Production” the campus generates and “sells” electricity, chilled water, steam and water/waste water and distributes them to campus facilities
- “Consumption” the campus purchases a large percentage of their utility requirements from either regulated or deregulated companies

The majority of campuses operate as consumers; as a result this presentation will focus on that element of the “business of utilities.”

Higher Education Context

- Energy intensity higher than most other industries
- Reliability essential to support institutional mission
- Natural resource management one of most complex issues on a campus
- Majority of resource needs driven by existing building inventory
- Energy market increasingly complex and volatile

HEPI Cost Change (%)

<table>
<thead>
<tr>
<th>Year</th>
<th>Utilities</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>-30.5</td>
<td>1.9</td>
</tr>
<tr>
<td>2003</td>
<td>33.5</td>
<td>5.1</td>
</tr>
<tr>
<td>2004</td>
<td>11.9</td>
<td>3.7</td>
</tr>
<tr>
<td>2005</td>
<td>13.5</td>
<td>3.9</td>
</tr>
<tr>
<td>2006</td>
<td>27.7</td>
<td>5.1</td>
</tr>
<tr>
<td>2006</td>
<td>-13.7</td>
<td>2.8</td>
</tr>
<tr>
<td>2008</td>
<td>14.2</td>
<td>5.0</td>
</tr>
<tr>
<td>2009</td>
<td>-15.1</td>
<td>2.3</td>
</tr>
<tr>
<td>2010</td>
<td>-9.5</td>
<td>0.9</td>
</tr>
<tr>
<td>2011</td>
<td>4.1</td>
<td>2.3</td>
</tr>
<tr>
<td>2012</td>
<td>-4.9</td>
<td>1.7</td>
</tr>
</tbody>
</table>
Utility Companies – How they work

- Rate base
- Rate of return – based on cost of capital and amount of risk assumed by utility company
- Operating expenses versus capital expenses
- Various fees - energy conservation, renewable energy, etc.
- Imbalance of fixed and variable fee structures

Major Components of US Average Electrical Price, 2011

- Generation (58%)
- Transmission (13%)
- Distribution (31%)


Components of Power Pricing
Utility Companies

Rate base: $100M

- 10% Rate of return: $10M
- Operating expenses: $7M
- Total Cost Recovery: $17M

Customers Bills
- Fixed charges: $10M
- Variable charges: $7M
- Revenue from rates: $17M
- Operating expenses: -$7M
- Interest expense: -$4M
- Company Profit: $6M

Yin and Yang – New Service

Rate base: $120M

- 10% Rate of return: $12M
- Operating expenses: $10M
- Total Cost Recovery: $22M

Customers Bills
- Fixed charges: $12M
- Variable charges: $10M
- Revenue from rates: $22M
- Operating expenses: -$10M
- Interest expense: -$5M
- Company Profit: $7M

Yin and Yang - Renewables

Rate base: $100M

- 10% Rate of return: $10M
- Operating expenses: $5M
- Total Cost Recovery: $15M

Customers Bills
- Fixed charges: $10M
- Variable charges: $5M
- Revenue from rates: $15M
- Operating expenses: -$5M
- Interest expense: -$4M
- Company Profit: $6M
**Yin and Yang - Renewables**

- Rate base: $100M
- 10% Rate of return: $10M
- Operating expenses: $5M
- Total Cost Recovery: $15M

**Customers Bills**
- Fixed charges: $5M
- Variable charges: $10M
- Revenue from rates: $15M
- Operating expenses: -$5M
- Interest expense: -$4M
- Company Profit: $6M

---

**Variable Charges**

- Demand fees to collect for cost of capacity – minimum with ratchet
- Energy charge – on peak and off peak
- Taxes (often termed franchise fees)
- Other fees – safety fees, fuel adjustment clauses, renewable energy, energy conservation, etc.
Dissecting Your Bills

Finding the Gold

Strategies
- Legislative
- Regulatory
- Technology
- Donors?

Rate Structures
### Rate Structures

<table>
<thead>
<tr>
<th>Year</th>
<th>Current Electricity Charges</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>Non-Peak Large Power TDU</td>
<td>$0.9618/kWh</td>
</tr>
<tr>
<td>2016</td>
<td>Off-Peak Load Charge</td>
<td>$0.9618/kWh</td>
</tr>
<tr>
<td>2017</td>
<td>Customer Charge</td>
<td>$0.9618/kWh</td>
</tr>
<tr>
<td>2018</td>
<td>Service Charge</td>
<td>$0.9618/kWh</td>
</tr>
<tr>
<td>2019</td>
<td>Demand Charge</td>
<td>$0.9618/kWh</td>
</tr>
<tr>
<td>2020</td>
<td>Total Charge</td>
<td>$0.9618/kWh</td>
</tr>
</tbody>
</table>

### Customer Charge

<table>
<thead>
<tr>
<th>Year</th>
<th>Current Electricity Charges</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>Non-Peak Large Power TDU</td>
<td>$0.9618/kWh</td>
</tr>
<tr>
<td>2016</td>
<td>Off-Peak Load Charge</td>
<td>$0.9618/kWh</td>
</tr>
<tr>
<td>2017</td>
<td>Customer Charge</td>
<td>$0.9618/kWh</td>
</tr>
<tr>
<td>2018</td>
<td>Service Charge</td>
<td>$0.9618/kWh</td>
</tr>
<tr>
<td>2019</td>
<td>Demand Charge</td>
<td>$0.9618/kWh</td>
</tr>
<tr>
<td>2020</td>
<td>Total Charge</td>
<td>$0.9618/kWh</td>
</tr>
</tbody>
</table>

### Public Service Company of New Mexico

<table>
<thead>
<tr>
<th>Year</th>
<th>Current Electricity Charges</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>Non-Peak Large Power TDU</td>
<td>$0.9618/kWh</td>
</tr>
<tr>
<td>2016</td>
<td>Off-Peak Load Charge</td>
<td>$0.9618/kWh</td>
</tr>
<tr>
<td>2017</td>
<td>Customer Charge</td>
<td>$0.9618/kWh</td>
</tr>
<tr>
<td>2018</td>
<td>Service Charge</td>
<td>$0.9618/kWh</td>
</tr>
<tr>
<td>2019</td>
<td>Demand Charge</td>
<td>$0.9618/kWh</td>
</tr>
<tr>
<td>2020</td>
<td>Total Charge</td>
<td>$0.9618/kWh</td>
</tr>
</tbody>
</table>

### Notes
- **Customer Charge** includes $0.50/kWh of fixed demand.
- The Customer Charge recovers the fixed costs of providing service to this customer class.

---

**Customer Charge**

PUBLIC SERVICE COMPANY OF NEW MEXICO
ELECTRIC SERVICES

---

**Notes**

- The rate for electric service shall be for the use of the R.E.C. D.E.P. (for periods through 7/31/2018)
- Off-peak period is the same as the service period (198 hours per season).

---

**Customer Charge**

PUBLIC SERVICE COMPANY OF NEW MEXICO
ELECTRIC SERVICES

<table>
<thead>
<tr>
<th>Year</th>
<th>Current Electricity Charges</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>Non-Peak Large Power TDU</td>
<td>$0.9618/kWh</td>
</tr>
<tr>
<td>2016</td>
<td>Off-Peak Load Charge</td>
<td>$0.9618/kWh</td>
</tr>
<tr>
<td>2017</td>
<td>Customer Charge</td>
<td>$0.9618/kWh</td>
</tr>
<tr>
<td>2018</td>
<td>Service Charge</td>
<td>$0.9618/kWh</td>
</tr>
<tr>
<td>2019</td>
<td>Demand Charge</td>
<td>$0.9618/kWh</td>
</tr>
<tr>
<td>2020</td>
<td>Total Charge</td>
<td>$0.9618/kWh</td>
</tr>
</tbody>
</table>

---

**Customer Charge**

PUBLIC SERVICE COMPANY OF NEW MEXICO
ELECTRIC SERVICES

<table>
<thead>
<tr>
<th>Year</th>
<th>Current Electricity Charges</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>Non-Peak Large Power TDU</td>
<td>$0.9618/kWh</td>
</tr>
<tr>
<td>2016</td>
<td>Off-Peak Load Charge</td>
<td>$0.9618/kWh</td>
</tr>
<tr>
<td>2017</td>
<td>Customer Charge</td>
<td>$0.9618/kWh</td>
</tr>
<tr>
<td>2018</td>
<td>Service Charge</td>
<td>$0.9618/kWh</td>
</tr>
<tr>
<td>2019</td>
<td>Demand Charge</td>
<td>$0.9618/kWh</td>
</tr>
<tr>
<td>2020</td>
<td>Total Charge</td>
<td>$0.9618/kWh</td>
</tr>
</tbody>
</table>
"Demand" is the maximum flow of power a customer uses at any one time.

**Demand Charge**

### Demand Charge

**ON-PEAK PEAK DEMAND CHARGE**

- **Customer Demand Protection** (for residential, exclusive of 2 kW or less):
  - Off-Peak Demand Charge: $70.80/MW
  - **$12.58/MW**

- **Premier Service Customer**:
  - Off-Peak Demand Charge: $177.47/MW
  - **$4.28/MW**

**OFF-PEAK PEAK DEMAND CHARGE**

- On-Peak Rates:
  - **$138.32/MW**
  - Off-Peak Rates:
  - **$30.86/MW**

**POWER FACTOR ALLOWANCE**

The allowance is based on a power factor of 0.90 or higher. Errors or omissions are subject to adjustment. A maximum of 0.90 or higher is allowed; the actual power factor will be corrected to 0.90 for each kWh in excess of the allowed 0.90/kWh per kW of actual demand.

**EFFECTIVE**

**AUG 1 2011**

**Reg. No. 040-00301**

**电价监管局**

**Energy Charge & Power Factor**

### Energy Charge & Power Factor

**OFF-PEAK PEAK DEMAND CHARGE**

- **Premier Service Customer**:
  - Off-Peak Demand Charge: $177.47/MW
  - **$4.28/MW**

- **Energy Charge**:
  - **$8.28/MW**

**OFF-PEAK PEAK DEMAND CHARGE**

- On-Peak Rates:
  - **$138.32/MW**
  - Off-Peak Rates:
  - **$30.86/MW**

**Power Factor Allowance**

The allowance is based on a power factor of 0.90 or higher. Errors or omissions are subject to adjustment. A maximum of 0.90 or higher is allowed; the actual power factor will be corrected to 0.90 for each kWh in excess of the allowed 0.90/kWh per kW of actual demand.
### Energy Charge & Power Factor

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy Charge</td>
<td>$15.8654</td>
</tr>
<tr>
<td>Power Factor</td>
<td>$12.8654</td>
</tr>
</tbody>
</table>

**Effective**

Signed by: [Signature]

[ Stamp]

[Stamp]

### Other Fees

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Renewable energy, fuel costs, energy conservation programs, and local taxes</td>
<td>$2,100.00</td>
</tr>
</tbody>
</table>

**PUBLIC SERVICE COMPANY OF NEW MEXICO**

**ELECTRIC SERVICES**

**6TH REVISION RATE NO. 46**

**CANCELING 57TH REVISION RATE NO. 48**

**LARGE POWER SERVICE — TIME-OF-USED RATE**

**Page 2 of 4**

**FUEL AND PURCHASED POWER COST ADJUSTMENT:** The above rates are based on a 1.0126 rate per kWh of fuel cost. Effective July 1, 2011.

**APPLICABLE FOPC FACTOR:** Any other FOPC factor that may apply to this tariff shall be applied in accordance with the terms of those rates.
Finding the Gold

- Regulatory
- Legislative
- Donors
- Amended Renewable Energy Act
- Partnered with a donor

Emerging Issues

- Low cost of natural gas and oil
- Regulatory pressure
  - fracking
  - wind power
  - solar
- External prices pressures on electricity
  - Pressure on coal
  - Renewable energy
- Energy exports

The Business of Utilities

Questions, Comments, Observations

Sign-in Sheet & Evaluations