Panel 3

Where Are Rates Going, And What Can You Do About It?
Where are Rates Going and What Can You Do About It?

An LDC & EDC’s Perspective
Topics

- Who Are We
- A Gas LDC perspective
  - Supply Outlook
  - Recent History of Retail Natural Gas Commodity Rates
  - How Rates Vary by Customer Class (R, C, I)
- An Electric EDC’s perspective
  - Power Procurement process
  - How Rates Vary by Customer Class (R, C, I)
Who Are We

Connecticut

Western Massachusetts

Berkshire Gas
Conn. Natural Gas
Southern Conn. Gas
The United Illuminating Co.
A Natural Gas LDC Perspective

Procure sufficient capacity to meet peak load of “design day”, which is the coldest day in a rolling 30-year period.

Peak Day needs are met through Primary firm pipeline capacity and on-site peaking (LNG) resources.
CNG+SCG Combined Firm Peak Day Demand & Supply Forecast

- Peak Day Requirements
- Peak Day Supply


MMBtu: 100,000 to 900,000
A Natural Gas LDC Perspective

How have natural gas commodity rates varied through the past two winters?

CNG Residential Heating PGA Rates

[Graph showing cost per ccf from Sep-13 to Mar-15, with peaks in Jun-14 and Jul-14, and a decline in Sep-14 to Jan-15, followed by a rise in Feb-15 and Mar-15.]
Percentage of Typical C&I Bills that are Volumetric, Demand-based and Fixed

Based on Current CNG Rates....

Typical Medium General Service Customer

- Volumetric: 66.0%
- Demand: 17.0%
- Basic Service Charge: 17.0%

Typical Large General Service Customer

- Volumetric: 74.0%
- Demand: 21.0%
- Basic Service Charge: 5.0%
An Electric EDC Perspective

- *Procurement of Standard Service* (for those customers who do not choose to receive their generation services from a licensed retail supplier).

- Process is fairly prescriptive and is contained in the PURA-approved Procurement Plan.

- Overarching principle is **laddering**.

- Multiple procurements for a given delivery period, done at various times.

- Similar to “dollar-cost-averaging” in the investment world.
## Laddering of Standard Service Procurement

**United Illuminating**

**Procurement of Standard Service - Filled Tranches**

<table>
<thead>
<tr>
<th></th>
<th>1st half 2014</th>
<th>2nd half 2014</th>
<th>1st half 2015</th>
<th>2nd half 2015</th>
<th>1st half 2016</th>
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<tbody>
<tr>
<td>100%</td>
<td>10/22/2013</td>
<td>4/22/2014</td>
<td>10/21/2014</td>
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<tr>
<td>90%</td>
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<td>80%</td>
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<tr>
<td>50%</td>
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<td>10/21/2014</td>
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<tr>
<td>30%</td>
<td></td>
<td></td>
<td>4/22/2014</td>
<td>7/22/14</td>
<td>2/10/2015</td>
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<tr>
<td>20%</td>
<td>1/29/2013</td>
<td>9/10/13</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10%</td>
<td></td>
<td></td>
<td>4/22/2014</td>
<td>7/22/14</td>
<td>2/10/2015</td>
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What makes up Full Requirements Service?

Therefore, the EDC’s Standard Service prices will generally follow the natural gas futures prices.
An Electric EDC Perspective
Procurement of Standard Service

Average Standard Service Rate

<table>
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<tr>
<th>Year</th>
<th>Rate</th>
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<tr>
<td>2H13</td>
<td>7.65</td>
</tr>
<tr>
<td>1H14</td>
<td>8.92</td>
</tr>
<tr>
<td>2H14</td>
<td>8.61</td>
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<tr>
<td>1H15</td>
<td>12.94</td>
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</table>
An Electric EDC Perspective
Procurement of Last Resort Service

Last Resort Generation Service Rates
(c/kWh)

- Oct-13
- Nov-13
- Dec-13
- Jan-14
- Feb-14
- Mar-14
- Apr-14
- May-14
- Jun-14
- Jul-14
- Aug-14
- Sep-14
- Oct-14
- Nov-14
- Dec-14
- Jan-15
- Feb-15
- Mar-15
UI System Average Electric Rate
Based on Rates effective 1/1/2015

- Generation: 56%
- Transmission: 10%
- Distribution: 25%
- Non-bypassable FMCC: 4%
- Combined Public Benefits Charge: 5%

March 11, 2015
Percentage of Typical C&I Bills that are Volumetric, Demand-based and Fixed

Based on Current UI Rates......

Typical Commercial Customer

76.20%
21.50%
2.30%

Energy
Demand
Basic Service Charge

Typical industrial Customer

74.90%
24.40%
0.70%

Energy
Demand
Basic Service Charge

March 11, 2015
Thank You!
Where are Rates Going and What Can You Do About It?

Connecticut Energy, Environment and Economic Development Conference
March 11, 2015
Where are prices going?

- Official disclaimer: I don’t know!
A Few Snapshots of Prices
A Few Snapshots of Prices
A Few Snapshots of Prices
Where are prices going?

• **Influencing factors:**
  • Gas capacity
  • Treatment of demand response
  • Environmental regulation
  • Other policy decisions
    • Treatment of behind-the-meter resources will affect economics of some options
    • Carryover issues from Patrick administration
What can you do about it?

• Buy some
• Make some
• Save some
Energy Management Options

• Unofficial disclaimer: Shamelessly Direct Energy-branded materials used as examples only.
• Many other excellent companies offered similar services.
Total Energy Management

Managing Both Sides of the Equation

Supply Management

- Advisory Services
- Gas Solutions
- Solar Generation

Demand Management

- Demand Management
- Energy Efficiency

Full Benefit Potential

Supply: 
Price ($) × Demand: 
Usage (MWs) = Total Cost ($/MWh)
Total Energy Management Propositions

**Advisory Services**: Best-in-class risk management energy products, sold across all markets, that tailor a customer’s procurement strategy to their risk & cost preferences – 15 TWh under contract in 2013 with a customer retention of 96%

**Demand Response**: Offering customers the ability to participate in demand side markets & generate returns for curtailing load during peak times – 356 MW of capacity under contract in 2013

**Solar**: Leveraging a tax & capital efficient investment with an industry-leading partner, to unlock affordable renewable energy opportunities – Invested $8M to date against $50M plan

**Efficiency**: Enabling customers to become smarter, more efficient users of energy through building audits, retrofit engineering, & project management – Reduced customer usage on average by 6% with over $1M in annual savings

**Gas Solutions**: Creating market leading fuel solutions in oil conversions, & CNG services, to accelerate the benefits of natural gas to customers – Generated 5 BCF of gas demand via conversions, reduced emissions from oil, & saved customers $14.5M annually
Direct Energy’s Managed Products

**Load Following Block and Index**

- Advisory Services & Customized Reporting
- Layering Capability
- Index Market Access (optional)
- Ability to create a fully-fixed energy price
- Limited bandwidth risk
- Fixed price premiums

**Product Comparisons**

**Block & Index**

- Advisory Services & Customized Reporting
- Layering Capability
- Index Market Access (always)
- Transparent access to wholesale market
- No shaping/hedging premium
- Customer owns bandwidth risk

Both products offer flexibility in retail adder configurations
Panoramic Power by Direct Energy

- A sub-metering solution
- Hundreds of sensors can be installed in a few hours with no disturbance of daily operations.

1. Snap
   - Easy install
   - Wireless
   - No disruption
   - No maintenance
   - Unlimited scale

2. Connect
   - Plug & Play
   - Cellular or WiFi

3. Set Up
   - Role definition
   - Executive reports and alerts
   - Set goals
   - Measure benchmarks

4. Start Saving
   - Scheduled reports
   - Real time alerts
   - Online analytics
   - Manage chain-wide

Ongoing customer engagement
On-Bill Financing for Energy Efficiency

- On-bill financing with Direct Energy for energy efficiency projects can reduce your overall energy spend
  - Can be combined with other DE product offerings, Demand Response
  - Common projects include lighting and HVAC retrofits

- Direct Energy handles your efficiency projects from start to end
  - Detailed analysis of your energy needs and efficiency opportunities
  - Project and contractor management including installation of improvements
  - Consolidate efficiency project and energy charges into one invoice

- Energy efficiency projects may be eligible for rebates, potentially lowering your overall costs

Additional opportunities and products may exist to meet your specific needs. Please inquire.
DEB and SolarCity

Tax equity partnership worth $125 million

- DE contributes $50 million (minority owner)
- SolarCity contributes $75 million (majority owner)
- Partnership finances, constructs and owns PV systems

No upfront costs via long-term PPA
Or cash option
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Onsite and remote alternatives
Thank you for your attention!
Where are Rates Going and What Can You Do About It?

Energy Conservation & Renewable Energy
Areas of Discussion

- Economic Benefits of Conservation and Renewable Energy
- Opportunity Cost of Delayed Action
- Review of Available Programs and Vehicles
  - Utility Programs
  - C-PACE
  - Lead-by-Example
  - ZREC / LREC
Why Energy Conservation?

- In any utility rate climate, which is the cheapest kW or Therm you can buy?
  - The one you don’t use!

- Lower usage and overall cost
- Improve Operations and Performance of Asset
- Upgrade Facility and Add Asset Value
- Secure Long-Term Price Stability
## Opportunity Cost

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
<th>Note</th>
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<tbody>
<tr>
<td>Size of Facility</td>
<td>50,000 sf</td>
<td>General C&amp;I</td>
</tr>
<tr>
<td>Annual Energy Cost</td>
<td>$100,000</td>
<td>$2/sf</td>
</tr>
<tr>
<td>Annual Savings Opportunity</td>
<td>$25,000</td>
<td>20%-40% Reduction</td>
</tr>
<tr>
<td>Total Capital Benefit Over Term</td>
<td>$500,000</td>
<td>20 Year Term</td>
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Leverage Utility Programs

- Programs
  - SBEA (Small B)
  - PRIME
  - RCx – Retro-Commissioning
  - Multi-Family
- Financing Partner
  - On-Bill Programs
  - Low to No Cost of Capital
Commercial Property Assessed Clean Energy

Drive Improvements to Facility and Bottom Line

- ECM 1 - Premium Efficiency Lighting System Upgrades & Lighting Controls
- ECM 2 - Energy Management Control System
- ECM 3 – Building Envelope Improvements
- ECM 4 – Water Conservation
- ECM 5 – Kitchen Hood Controls
- ECM 6 – Replace Electric Dishwasher Booster with Gas Unit
- ECM 7 – Solar Heating System for Pool
- ECM 8 – Pool Cover
- ECM 9 – Chlorine Generator for Pool
- ECM 10 – Steam to Hot Water Heating Conversion
- ECM 11 – PV Solar Array
- ECM 12 – Steam Trap Replacement & Thermostatic Radiator Valves (TRV)
Lead-By-Example

- State Performance Contracting Program
  - State Agencies
  - Municipals
Renewable Energy Deployment

- ZREC / LREC Programs
  - Variety of Technology Specific Solutions
  - Integrate with Energy Efficiency
  - Secure Long-Term Price Stability
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Thank You!