Request for Proposals:

Smart Grid Business Case Analysis

Business Modeling Including:
- Smart Grid Capability Definition
- Cost Identification
- Benefit Valuation
- Assumption Definition
- Business case modeling
- Probability Analysis
- Scenario Analysis
- Final Recommendation
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1. Company Information

Northeast Utilities (NYSE: NU), (NU) a Fortune 500 and Standard & Poor’s 500 energy company based in Connecticut, operates New England’s largest energy delivery system. It is among the 20 largest electric utility systems in the country and the largest in New England with over 7,000 employees serving customers in Connecticut, New Hampshire, and Western Massachusetts. This 11,000 square mile service territory stretches from Long Island Sound to the Canadian Border.

NU’s operating subsidiaries include The Connecticut Light and Power Company (CL&P), Western Massachusetts Electric Company (WMECO), Yankee Gas Energy Services Company (YES), and Public Service Company of New Hampshire (PSNH), furnishing electric and gas service to more than 2.1 million customers. In addition to its regulated operating companies, the NU system also includes a support subsidiary, Northeast Utilities Service Company (NUSCO), and real estate holdings through four companies.

NU’s service territory includes:

<table>
<thead>
<tr>
<th>Operating Company</th>
<th>Square Miles</th>
</tr>
</thead>
<tbody>
<tr>
<td>CL&amp;P</td>
<td>4,400</td>
</tr>
<tr>
<td>WMECO</td>
<td>1,490</td>
</tr>
<tr>
<td>PSNH</td>
<td>5,445</td>
</tr>
<tr>
<td>YES</td>
<td>1,995</td>
</tr>
</tbody>
</table>

NU’s total number of gas and electric customers are approximately 2,100,000, and by operating company are:

<table>
<thead>
<tr>
<th>Operating Company</th>
<th>Number of Customers</th>
</tr>
</thead>
<tbody>
<tr>
<td>CL&amp;P</td>
<td>1,200,000</td>
</tr>
<tr>
<td>WMECO</td>
<td>200,000</td>
</tr>
<tr>
<td>PSNH</td>
<td>490,000</td>
</tr>
<tr>
<td>YES</td>
<td>200,000</td>
</tr>
</tbody>
</table>

To learn more about NU, visit www.nu.com

2. RFP Schedule & Timeline

CL&P has proposed the following RFP timeline, with a goal of a vendor selection by the end of July and consulting resource commencement as soon as possible thereafter.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Duration/Dependency</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Request for Proposal Issued</td>
<td></td>
<td>June 10, 2009</td>
</tr>
<tr>
<td>Deadline for Respondent Questions</td>
<td>RFP + 3 business days</td>
<td>Mon, June 15</td>
</tr>
<tr>
<td>Proposal Submission Deadline</td>
<td>RFP + 10 business days</td>
<td>Wed, June 24</td>
</tr>
<tr>
<td>Notification to Potential Selected Vendors</td>
<td>Submission + 5 business days</td>
<td>Wed, July 1</td>
</tr>
<tr>
<td>Selected Vendor Presentations</td>
<td>Notification + 5 business days</td>
<td>Wed, July 8 - Wed, July 15</td>
</tr>
<tr>
<td>Vendor selection</td>
<td>Presentations + 5 business days</td>
<td>Wed, July 20</td>
</tr>
</tbody>
</table>
3. Background
On May 2, 2008, the Connecticut Department of Public Utility Control (DPUC) approved The Connecticut Light and Power Company’s (“CL&P or “Company”) plan required by the December 19, 2007 decision in Docket No. 05-10-03RE01 to perform an AMI metering study (“Meter Study”) and conduct a Rate Pilot (“Plan-It Wise Energy Pilot” or “Rate Pilot”), under which it could achieve the DPUC’s objectives as set forth in Public Act 07-242, *An Act Concerning Electricity and Energy Efficiency* (“Act”).

The primary focus and value of our “Plan-It Wise Energy” Pilot is to test our unique Connecticut customer interest in, and response to, peak time-based rates. The Rate Pilot is running from June 1, 2009 through August 31, 2009 and offers approximately 3,000 customers various peak rate options. Half of the customers in the Rate Pilot also have an “enabling technology”. CL&P’s DPUC filings on Advanced Metering in Docket No. 05-10-03RE01.

The DPUC reasoned that, since CL&P did not advise making a full deployment AMI recommendation at this time, the metering requirements of the Rate Pilot need only support the activities required to enable a statistically valid Rate Pilot in the summer of 2009. A full deployment AMI solution will be determined based on the business case analysis to be performed outside the scope of this Rate Pilot and required to be completed by December 2009.

In early 2008, CL&P engaged The Brattle Group to design the Rate Pilot, provide analysis on the Rate Pilot demand response results based on rate and technology treatment and quantify the demand response value. In late 2008, CL&P engaged Accenture to provide project management and delivery over the Rate Pilot solution.

4. Objectives
To ensure CL&P has the information necessary to make a well-informed and thorough recommendation for an AMI deployment to the DPUC, the cost benefit analysis must:

1. Identify the economic parameters in which AMI and Smart Grid will be cost effective;

2. Precisely define the different smart grid capability to be modeled, as well as define different value propositions based on the selected smart grid capabilities. Also, one of the value propositions should be the status-quo.

3. Identify the benefits associated with each capability that is identified.

4. Identify the relevant costs for each capability in the context of CL&P’s processes and structure. Graphically illustrate cost effectiveness by capability.

5. Identify relevant macro-assumptions, including the economic parameters. Identify cost and benefit assumptions.
6. Develop a reusable business case model to quantify the unique value of smart grid in delivering new capabilities. The business model should allow for dynamic changes in key assumptions.

7. Illustrate cost effectiveness over optimal deployment timeline to optimal customer segment. Determine probability of different outcomes.

8. Conduct scenario analysis to determine value of different value propositions, including a non-AMI solution or status quo.

9. Evaluate the benefits to customers as a whole as well as customers with smart grid capabilities?

10. Develop final recommendations.

5. Scope of Services

As part of this RFP, CL&P and its parent company Northeast Utilities are seeking a qualified consulting partner to facilitate, develop, analyze and quantify the scenarios in which a Smart Grid will be cost effective for Connecticut.

NU is committed to a collaborative partnership with the qualified consulting partner. The selected vendor will be required to work with key CL&P resources and The Brattle Group to develop costs, benefits and assumptions.

The Brattle Group will provide analysis and final demand response results based on rate and technology treatment. The Brattle Group is also responsible for quantifying the value of demand response based on the Rate Pilot results, which will be made available to the business case analysis partner.

To ensure timely completion by December 1, 2009 of a recommendation for CL&P on advanced metering, the scope of services in this RFP is limited to a Smart Grid evaluation for CL&P. It should also be noted that we expect future Smart Grid analysis efforts for WMECO and PSNH. Therefore, the company expects that any financial analysis models used to develop the Connecticut business case analysis can be shared internally, as needed.

Smart Grid Capability Value

To determine the value of each smart grid capability, the following areas and questions must be addressed:

1. AMI technology maturity implications: What are the changes in value assuming different AMI technologies?

2. Accounting treatments: What is the impact of reduced accounting life of the AMI meter (7 years)?

3. Unknown future: What is the impact of unknown values like Pluggable Hybrid Electric Vehicles, carbon cap & trade and “smart appliance” requirements?
High and low costs and benefits must be developed for each Smart Grid capability, including the evaluation of distribution, transmission, system, environmental and customer benefits derived from:

Advanced Metering Infrastructure:
- Two-way metering communications
- Remote activation
- Home Area Network integration
- Operational Gateway Applications
- Demand Response operation
- Peak Time Rates offering

Advanced Distribution Operations
- Distribution Management System with advanced sensors
- Advanced Outage Management ("real-time")
- Distributed Energy Resource (DER) Operations
- Distribution Automation
- Distribution Geographic Information System
- Micro-grid operations (AC and DC)
- Advanced protection and control
- Advanced grid components for distribution

Advanced Transmission Operations
- Substation Automation
- Geographical Information System for Transmission
- Wide Area Measurement System (WAMS)
- Hi-speed information processing
- Advanced protection and control
- Modeling, simulation and visualization tools
- Advanced grid components for Transmission
- Advanced regional operational applications

Advanced Asset Management
- Advanced sensors

**Deployment Scenario Analysis**
The cost benefit analysis narrative must be written in a way that can be included as an appendix in a DPUC filing. The scenario analysis must include evaluation of the following scenarios:

1. Optimal peak rate customer deployment: Which customers, at which prices, with which technologies could benefit from Day 1?
2. Least cost solution: Which targeted benefits can be achieved with no new AMI technologies?
3. Maximum near-term value solution: Which is the optimal deployment given the capabilities we need over the next 1-4 years?
4. Stimulus grant subsidized value solution: If a 50% federal matching grant is received, which additional capabilities are pushed under the cost-effective curve?

5. Full deployment solution: Which is the optimal deployment to enable the capabilities needed over the next 4 - 7 years?

6. Others to be defined jointly once the project starts.

**Final Recommendation**

Business case information collected during the analysis and scenario development which will provide CL&P with final recommendations around the following key questions:

1. What are the values of each scenario?

2. What is the recommended deployment timeline for each scenario?

3. What is the overall cost-benefit of a full deployment of smart grid capabilities?

4. What are the key assumptions that drive this value?

5. What are the biggest unknowns?

6. How should AMI and Smart Grid costs be allocated to our customers?

**DPUC Filing and Testimony Support**

It is expected that the selected partner will provide written filing, discovery and testimony support at the DPUC in the existing or a future docket in which the DPUC will evaluate our results, analysis and recommendations.

**6. Expected Project Timeline**

The final recommendation from CL&P is due to be reported to the DPUC on December 1, 2009. The initial results of the business case analysis, absent the pilot results, should be available by early August, so that internal iterations can be performed to strengthen and solidify the assumptions. Placeholder values for the CL&P’s demand response values can be used until the Pilot results are available after Pilot completion at the end of August. The selected consulting partner will work jointly with CL&P to determine an interim milestone schedule.

**7. Proposal Requirements**

CL&P is requesting two pricing options to be provided for RFP responses for consulting activities required and described within this RFP:

1) Time and materials with a cap that includes expenses not to exceed 17% of the total professional services.

2) A fixed price. Fixed price should include all professional services, travel, and other direct and indirect costs.
In order of importance, the proposals should clearly and concisely describe:

a) Prior experience in Smart Grid or AMI business case analysis for a utility with description of the prior projects in this area.

b) References for prior experience. We will notify you prior to contacting references.

c) Proposed approach and methodology to be used.

d) Proposed timeline.

e) Proposed team structure, including bios of the key team members.

8. Preventing Conflict of Interest

To minimize the potential for conflict of interest in developing the business case models for CL&P, the Company may prohibit the selected consulting partner from being the future selected system integration provider in the ultimate deployment recommendation.