

**STATE OF NEW YORK  
PUBLIC SERVICE COMMISSION**

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**Proceeding on Motion of the Commission Regarding  
Expedited Implementation of Mandatory  
Hourly Pricing for Commodity Service**

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**Case No. 03-E-0641**

**MANDATORY HOURLY PRICING  
SIX MONTH EVALUATION**

**July 30, 2007**

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**Introduction**

On April 24, 2006, the Public Service Commission (“the Commission”) issued an Order (the “April Order”) approving Niagara Mohawk Power Corporation’s, d/b/a/ National Grid (“National Grid” or the “Company”), proposal to develop a Phased-Approach for implementing hourly pricing to the SC-3 rate class. Under this approach, National Grid would move customers with billing demands (>500 kW) to hourly pricing by September 1, 2006.<sup>1</sup> As part of the evaluation process, the Commission also directed National Grid to “survey new hourly pricing customers after the first six months of program implementation and submit a report to the Director of the Office of Electricity and the Environment within 60 days thereafter, or as the Secretary may require, summarizing the short-term results, customer reactions, party complaints and issues and areas for improvement or action”. As part of the report, the utilities were further directed

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<sup>1</sup> Order Denying Petitions for Rehearing and Clarification in Part and Adopting Mandatory Hourly Pricing Requirements,” issued by the New York Public Service Commission (the “Commission”) on August 24, 2006 in Case No. 03-E-0641

to describe their experience in implementing hourly pricing and to suggest improvement opportunities and issues that require further analysis. The Commission also indicated that NYDPS Staff (“Staff”) would provide assistance to the utilities in developing the customer surveys

Accordingly, in collaboration with the Utilities, Staff developed a survey of new hourly pricing customers tailored to address the unique circumstances of each utility. Staff administered this survey to customers using customer contact information provided by each utility. (See Appendix 1) The results of the customer survey were compiled by Staff and provided to National Grid on June 12, 2007. In order to ensure that it had sufficient time to fully evaluate the results of the customer survey, and review its implementation process, the Company requested an extension of time until July 30<sup>th</sup>, 2007. The petition was granted on July 11, 2007

National Grid hereby respectfully submits the following report to comply with the requirements of the Commission’s April Order.

## **Background**

In its September 23, 2005 Order in this proceeding (the “September Order”), the Commission directed the company to file draft tariff leaves within 60 days to extend mandatory hourly pricing (“MHP”) to the SC-3 customers and a plan to install the interval meters needed to support this rate. Because National Grid’s SC-3 parent class includes 4,592 medium-sized C&I customers with maximum billing demands in the 100 to 1,999 kW range, on October 21, 2005, the Company filed a petition for rehearing and clarification (the “Petition”). As part of this filing, the Company requested permission

to work with Staff to develop a “Phased-Approach” whereby the Company would extend MHP to the largest SC-3 customers as soon as possible, and to the remainder of the SC-3 class in a series of phases, as long as the expected benefits from each phase could be shown to outweigh the implementation cost.

In follow up discussions with Staff, the Company outlined a plan to install interval meters and to extend hourly pricing to the largest SC-3 customers (>500kW) and extend hourly pricing to these customers before the 2006 Cooling Season (“Phase 1”). On November 22, 2005, the Company filed materials to support a plan to extend MHP to SC-3 customers (> 500 kW) in compliance with the Commission’s September 2005 Order described above. The filing included draft tariff leaves, a plan to install interval metering, perform outreach and education and to move eligible customers (including those who participate in economic development programs) to hourly pricing by June 1, 2006, preliminary cost estimates, and estimated bill impacts. When the Company called PSC Staff in early December to discuss next steps, Staff indicated that National Grid should begin to implement Phase 1 (“the Plan”) and that an official Commission order supporting the Plan would be forthcoming. Staff encouraged the Company to move forward with the Plan because most of the ~800 customers who would become eligible for hourly commodity billing as part of Phase 1 did not yet have the requisite metering/communication equipment.<sup>2</sup>

Immediately following those discussions, the Company began to implement “Phase 1”. As it began to flesh out its plan for outreach and education, the Company, in consultation with Staff decided to delay the “Go Live” date for hourly commodity billing

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<sup>2</sup> New metering would also be required for 160 customers designated to become part of the new load sample for the portion of the SC-3 Class that would not move to hourly commodity billing in Phase 1.

until September 1, 2006. The requisite metering and communication technology would not be installed until June 1, 2006. So, postponing the “Go Live” billing date to September 1, 2006 would allow customers to see their hourly commodity costs on a daily basis and consider alternative strategies for three months before being subject to hourly commodity billing. Postponing the billing date would also avoid transitioning customers to hourly commodity billing during the summer months when hourly prices can be high and volatile. A later “Go Live” date would also provide more time for customers to adapt to the increase in the Company’s T&D Rates in January 2006—especially since T&D rates were slated to rise again in January of 2007. Pushing back the start-date would also provide more time to involve New York State Energy Research and Development Authority (“NYSERDA”) and the Energy Service Companies (“ESCOs”) in Customer Workshops.

On April 24, 2006, the Commission issued its Order approving the Company’s proposal to develop a phased in approach for implementing hourly pricing to the SC-3 rate class and to move customers with billing demands (>500 kW) to hourly pricing by September 1, 2006.<sup>3</sup> The Commission also endorsed National Grid’s proposal to recover meter related costs through an incremental customer charge and to recover the remaining implementation costs from all other ratepayers through delivery rates.

The Commission further directed National Grid to conduct an assessment of the impact of hourly pricing on customers receiving economic development incentive rates and file a report detailing the outcome of the assessments and proposing any needed exemptions by July 1, 2006. As part of that filing, National Grid recommended that only those SC-3 customers (> 500 kW) with existing SC-11 or SC-12 contracts be permitted to

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<sup>3</sup> Order

elect to participate in hourly commodity billing. In follow up discussions, Staff suggested that the Company consider extending this choice to all 209 SC-3 customers (> 500 kW) who meet the size requirement and who currently participate in one or more economic development rate program. Staff also suggested that the Company consider subjecting economic development customers to the incremental customer charge to pay for metering, whether or not they opt into the rate prior to the expiration of their economic development rate contract.

On August 2, 2006, the Company filed the requisite tariff leaf changes to implement hourly commodity billing for large SC-3 customers on September 1, 2006. The tariff leaves also indicated that the customers who meet the size requirement and who also currently participate in economic development programs would be subject incremental customer charge to pay for the interval meter, but only be subject to hourly commodity billing if they explicitly opted into the rate or when their contract expires. To date, 796 of National Grid's SC-3 customer accounts have met the size threshold for hourly commodity billing. Only 638 of these accounts are currently billed for commodity based on their hourly usage because the remaining 158 accounts still participate in economic development programs and have not affirmatively opted in to hourly commodity billing.

## **I. NATIONAL GRID'S EXPERIENCE IMPLEMENTING MANDATORY HOURLY PRICING (PHASE 1)**

The following review draws on the MHP Project Charter (“the Charter”) and periodic progress reports generated by the project manager between January and September of 2006, based on input from the core implementation team. We also incorporate the results from an anonymous web-based survey of 30 National Grid employees involved in the more technical implementation process (See Appendix 2) and from a second anonymous web-based survey of 68 Customer Service employees who were involved in the education and outreach effort (See Appendix 3).

### ***A. Summary of Overall Implementation Process***

The Project Charter was developed in early December 2005, shortly after Staff encouraged the Company to begin implementing the Phase 1 Plan. The purpose of the Charter was to organize and coordinate the efforts of the eight functional areas that would be required to implement the Plan; Meter Engineering, Field Operations, Meter Data Services, Billing & Systems, Finance, Electric Pricing, Program and Policy, and Legal. The Charter described the purpose and need for the MHP project, expected results, key assumptions, required reviews and approvals, and the roles and responsibilities of team members. In its initial inception, the Charter identified the following Expected Results:

1. Install interval recorders that can support hourly billing for commodity and the ability of “meter service data providers” to develop/market tools that better enable customers to respond to hourly market prices by June 1, 2006. This

includes the installation of new sample meters required for the portion of the SC-3 Class that would not move to hourly commodity billing,

2. Ensure that hourly data from the new meters is sent to the Company's billing system in time to generate a July bill based on hourly usage recorded for June. The hourly data should also be made available to appropriate ESCos for billing purposes and be used in the settlement process with the New York Independent System Operator ("NYISO"),
3. Ensure that the commodity portion of small SC-3 customer (<500 kW) bills is based on a revised load shape that excludes the impact of the large SC-3 customers that will be moved to MHP. The revised load shape should also be made available to ESCos for billing purposes and considered in the NYISO settlement process,
4. Recover all incremental costs associated with the extension of MHP to SC-3 Customers to the extent allowed by the regulator (from SBC funds, via NYSEDA PON, or from RTP customers through an incremental customer charge),
5. Ensure that customers are aware of the change in billing method, the incremental customer charge and the methods/products available to help them take advantage of the new rate.

These Expectations were changed slightly after the project got underway. First, Expected Result #2 was modified in late February when, as described above, the "Go Live" billing date was pushed to September 1, 2006 to give customers more time to prepare for MHP. Second, Expected Result #1 was expanded when the Company decided to develop and offer a load management software package to eligible customers on a free-trial basis from June 1, 2006 through December 2006.<sup>4</sup> This package would better enable customers to develop strategies to respond to hourly prices

The Charter delineated both the general responsibilities of the core team members (mainly related to communication, attendance at meetings, responsiveness to requests and

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<sup>4</sup> Although the Company already offered a load management software to customers for a fee, the Company decided to augment this software to enable customers to view the hourly cost of commodity based on market-based prices.



adherence to deadlines) and the specific obligations of specific members. (See Appendix

4) The eight person Core team segmented naturally into the following four sub-teams:

1. Meter Installation/Activation
  - Meter Engineering,
  - Field Operations
  - Meter Data Services,
  - Program and Policy
2. Out-reach and Education
  - Program and Policy,
  - Customer Service
  - Electric Pricing
  - Information Technology
3. Billing and Settlements
  - Billing & Systems,
  - Accounts Processing,
  - Meter Data Services,
  - Program and Policy
4. Tariff Development
  - Program and Policy,
  - Billing & Systems,
  - Electric Pricing
  - Legal.

The time line contained in the Charter included only the most important project milestones; June 1, 2006, the date by which all eligible customers were needed to have interval meters and access to hourly interval data and September 1, the “Go Live” date for hourly commodity billing . Even though they agreed to the proposed time line, the Meter Installation Team stated quite clearly that the proposed schedule to order, receive, install and activate ~1000 new state-of-the-art wireless interval meters contained no slack to allow for unforeseen developments. Because there seemed to be no other reasonable way to meet the June 1<sup>st</sup> installation deadline, the Project Manager, Core Team and

Project Sponsor signed off on the Charter and began to implement the Plan. However, the team was well aware that any delay in receiving new meters would compress the latter part of the installation schedule

### ***B. Feedback from the Technical Implementation Team***

Almost 90% of the 18 National Grid employees who participated in the technical implementation team (Sub-Teams #1, 3, & 4) and who responded to the internal survey thought the overall implementation went well.

### **Meter Installation/Activation**

The Meter Installation/Activation team met the June 1<sup>st</sup> deadline for 99% of the 780 customers that were eligible for the move to hourly pricing. (Expected Result #1) The data from the meters was up-loaded into Energy Profiler On-line by June 8<sup>th</sup>. After a three day window to allow Account Managers to check the data for accuracy, customers were provided access to their hourly load data and associated cost at the Company's Rule 46 prices.

The only customers who did not have access to their hourly data by June 13<sup>th</sup>, were those who were identified as needing an antennae or a phone line. Antennae were on back order because more customers ended up needing antennae than the Company had anticipated (200) and the normal lag time to install a phone line is generally 8-to-10 weeks. This equipment was installed by the end of July so that these customers could view their data in EPO by the beginning of August 2007.

The success of the team in meeting this goal was remarkable given a substantial delay in receiving the new state-of-the-art meters from vendors. Several factors were responsible for the delay. First, the lack of an official PSC Order approving the Company's November 22<sup>nd</sup> filing slowed the purchase and internal approval process for new interval meters<sup>5</sup>. Second, the meters ordered from one vendor were substantially delayed due to software difficulties and the meters that did arrive on time were also found to contain a substantive programming error from the vendor.

These delays caused substantial strains on the Field Operation and Meter Data Services Team who then needed to multiply effort several-fold during May to meet the June 1<sup>st</sup> deadline. The stress on the folks in Meter Data Services was amplified by a staffing shortage that resulted in existing employees working over time and on weekends for a six week period to meet the June 1<sup>st</sup> installation deadline. These pressures were evident in the responses to the internal survey. Almost 20% of the respondents said that they thought this part of the meter installation process implementation faced challenges.

As expected, most identified the aggressive schedule and late delivery of equipment as an issue. However, one respondent also noted the slow response time of wireless carriers as a challenge to the installation process and another respondent said that field communication with customers could have been improved. A third respondent was frustrated that EPO was enabled for 780 Customers on a very short time-line, yet

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<sup>5</sup> The Company Ordered two new meters to implement this project; the Landis+Gyr S4e and the Itron Sentinel. These meters have the same or better storage and diagnostic characteristics as the interval meters that the Company deployed for its SC-3A class who moved to MHP in 1999. But the new meters also include communications modules that perform "packet switched communications"— a technology that is better suited to transfer digital meter data than the land-line telephone system.<sup>5</sup> Specifically, the wireless communication technology, embedded in these meters employs Internet Protocol (IP) addressable technology, connects seamlessly to the Company's MV90 System and can transmit data as frequently as every 15 minutes. The communication capabilities of these meters combined with an up-grade to the company's MV 90 system will enable the company to provide customers with secure and economical access to interval meter data in near real-time so they can better monitor energy use and evaluate load shifting/shedding scenarios.

only 185 of these customers ultimately registered for EPO, and a much smaller number actually logged into the program more than once.

Despite these challenges, the Meter Installation/Activation Team still believes that it made the correct choice in purchasing the new meters. The next best alternative was to upgrade existing meters with recorder boards and phone lines. This approach would have required the Company to coordinate meter up-grades with the telephone company and this would likely have delayed meter installation well beyond the June 1, 2006 date for many more customers. Back office and telephone service charges related to a land-line based system are four times as great as for the digital solution. In addition the wire-based approach creates three times maintenance calls than wireless connections (\$45 per year per meter vs. \$15 per year per meter). More important, the land line solution would have limited the frequency and granularity at which the customer could access the meter data and limit the potential for learning how best to engage customers to respond to price signals.

### **Billing & Systems & Tariff Development**

The Billing and Settlements Team met Expectations # 2 and #3 by the September 1, 2006 deadlines for all eligible customers. The Tariff Development Team met all filing deadlines and developed a tariff that collects all of the incremental costs associated with the mandatory hourly pricing program (Expectation #4). Still, more than 20% of the respondents (4) said they thought that there were challenges in the billing and systems (including accounts processing and IT support) aspect of the implementation process.

Several members of these teams said that the short notice (two weeks before the Compliance filing was due and six weeks before the “Go Live” billing date), to make the program optional for 209 of the 785 customers who met the size threshold, created a lot of last minute stress and opportunity for error, that could have been avoided with earlier notice.

### ***C. Summary of National Grid’s Outreach and Education Effort***

The O& E team established the following more specific objectives to meet Expected Result #5:

- Make sure that customers understand how hourly billing for commodity is different from the way customers are presently billed for commodity.
- Help customers view the move to hourly commodity billing as creating an additional tool for them to manage their commodity bills.
- Maximize the number of customers who shed load during peak hours and/or shift to hours when prices are lower.
- Acquaint customers with the tools and programs that are available to help them manage the loads and usage.
- Manage customer expectations and maximize customer satisfaction.

Because the plan to move approximately 780 large SC-3 customers (greater than 500 kW) to hourly commodity billing required the installation of new interval meters and communication links, National Grid’s outreach and education program began two months prior to the meter installation effort. In January 2006, National Grid began to include articles to familiarize customers with hourly pricing in an electronic newsletter

called “Business and Energy” that National Grid distributes to the largest non-residential customers on a monthly basis.

Just prior to the beginning of the meter installation effort in March, National Grid sent letters to affected customers to let them know they were eligible for the new program and that a new meter would soon be installed. National Grid also held internal meetings to make sure that Account Managers understood hourly commodity billing, why the Company was extending it to SC-3 customers, which customers would have to work harder to save money on the new rate, and the important role that Account Managers would play in outreach and education efforts.

As National Grid began to install meters in April 2006, the Company also began to work with an outside vendor to develop an enhanced version of a load-management software, Energy Profiler On-line (“EPO”), to enable customers to see how their energy costs vary by hour and day of the month and to evaluate the potential cost savings from forgoing or shifting usage. The Company developed a plan to offer eligible customers access to this tool from June through December 2006, so that customers would be able to better prepare for the implementation of hourly pricing on September 1, 2006.

National Grid also developed a plan to deliver half day Workshops to all eligible SC-3 Customers in the West, Central and Eastern regions of our service territory. The Company also met with NYSERDA to solicit funding for the development of presentation materials by outside consultants who focus on how customers adapt to time-of-use pricing for commodity.<sup>6</sup>

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<sup>6</sup> National Grid also settled on the following agenda for the Group Customer Workshops, which were titled, “Understanding Hourly Electricity Pricing”:

8:30 - 8:40 Welcome – [Regional Business Services Vice President]

8:40 - 9:30 What is hourly pricing & what does it mean for you? [Dr. C. McDonough]

The Workshops were very well received. Approximately four hundred customers and ten ESCos<sup>7</sup> attended three seminars held in Amherst, Liverpool and Albany and another thirty customers attended three additional seminars held in the more remote parts of our service territory; Fredonia, Batavia and Ellicottville. As shown in Appendix 5, Table 10, all of the customers who attended the Workshops and who filled out surveys found the Workshops informative and worth their time to attend. It is also notable that 87% of customers indicated that the move to hourly pricing would have a neutral to beneficial impact on their business, although almost half indicated that they wanted even more information. In response to an open-ended question “What else would you like to see National Grid do to help you with this transition?”, a few customers indicated they would like to meet with account managers one-on-one to discuss their specific situation, others indicated that they would like to receive free access to EPO for a longer period of time.

The next, and most important, phase of National Grid’s Outreach and Education was one-on-one meetings with customers. Most eligible customers had interval meters installed by the first week of June and could begin accessing their load data and National Grid’s hourly day-ahead supply price through Energy Profiler On-line on June 13.

Account managers were instructed to review their account data a few days before their

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9:30 - 10:20 How to get the most out of hourly pricing [Dr. Bernie Neenan]  
10:20 - 10:30 Break  
10:30 – 11:00 Testimonials from Experienced Customers  
11:00 - 11:35 Energy Profiler On-line: A tool to help you benefit [J. Stapleton]  
11:35 - 12:05 Ways NYSERDA Can Help [L. Smith]  
12:05 - 12:15 Questions & Final Comments [J. Stapleton/BSVP]  
12:15 - 1:00 Lunch/Networking With ESCo’s and Account Managers

<sup>7</sup> ESCos in attendance included Advantage Energy, Hess Corporation (Formerly Amerada Hess) ConEd Solutions, NY Energy, Constellation New Energy, Energy Services Providers, The Energy Cooperative of NY, NYESG Solutions/ Energetix, Select Energy of New York, and Suez Energy.

customers so that they could check to make sure everything was working as it should. The O &E Team advised Account managers to meet one on one with as many customers as possible once they verified that EPO was working correctly. The purpose of these meetings was to make sure that customers knew how to use EPO to help customers devise strategies to manage their energy use better in response to hourly commodity pricing before the rate became effective in September.

To help account managers work more effectively with customers during spring 2006, the Electric Pricing Department analyzed the static impact of hourly commodity pricing for the approximately 346 large SC-3 customers who had interval meters in 2005.<sup>8</sup> And to enable account managers to better appreciate the likely impact on the customers who did not have interval meters in 2005, the Team generated a table for each customer showing the static bill impacts for a list of “comparable customers” with interval meters that operate in the same industries. These analyses were made available to Account Managers to guide their discussions with customers.

Additional outreach activities were required in August to make economic development rate customers aware that they would be required to affirmatively opt-in to hourly pricing. The O&E Team apprised Account Managers of this development immediately following the August 2<sup>nd</sup> filing and shortly thereafter, sent a letter and opt-in form to the 209 customers who participate in economic development rate programs. By early fall, the Electric Pricing Department, had developed the analytical capability to

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<sup>8</sup> It is important to note that this type of analysis assumes that customers are fully exposed to hourly prices yet do not shed or shift load in response to those prices. Because customers have the incentive to do both under hourly pricing or to seek hedged services from an energy services company (ESCO) or NYPA, the static analysis captures what is considered “the worst case scenario” for a particular stream of hourly prices.



help these customers (and their Account Managers) evaluate whether or not it made sense for them to opt-in to the program

The O & E Team scheduled another well-attended conference call with account managers on September 11, 2006 to review the key aspects of the new tariff, provide a status report on opt-ins by economic development customers and review the tools available to work with economic development customers. The O & E Team also provided a status report on resolution of issues related to metering and EPO and reviewed the materials available on-line to help account managers assist customers. The materials included an example of the new bill format and a static bill impact analysis for the customers who had only recently received new interval meters. The call was also used to address any additional questions that the account managers had before customers began to receive their first bill.

#### ***D. Feed-back from the Customer Service Organization***

The results from an internal survey of the Customer Service Organization (68 employees) suggest that the efforts by the O&E Team to prepare Account Managers and customers for the hourly pricing program were highly effective. Of the twenty one employees who responded, 95% said the implementation process went well and more than 80% said that they understood the program well enough to support their customers. More specifically:

### **Preparing Account Managers to work with Customers**

- 95% of Respondents found the Quarterly Meeting Briefings meetings useful in helping customer service representatives understand the program;
- 80% of Respondents who found the Bill Comparisons and Conference Calls useful;
- 65% of Respondents found the “Business and Energy” Electronic Newsletter Articles useful;
- One Respondent said that it would also have been useful to have more information on market price trends to discuss with customers.

### **Customer Workshops**

- On average 40% of the Respondent’s customers attended the Customer Workshops
- 90% of Respondents thought that the Workshops were a useful way to prepare their customers;
- Respondents said that about 66% of their customers attended the Workshops and the vast majority of customers found the Workshops to be useful;
- 50% of the Respondents thought that more Workshops would have been helpful;
- 50% of the Respondents said they thought it would be helpful to hold the Workshops closer to the “Go Live” billing date;
- 40% of Respondents also thought that meetings should be held in different locations.

### **Individual Customer Meetings**

- Respondents said that they met with 80-to-100% of the affected customers, individually;
- One Respondent indicated that it would be helpful to move a smaller number of customers so they would have more time to work with each customer.

### **Energy Profiler On-line**

- 72% of Respondents thought that Customers found EPO to be a useful tool
- 55% of Respondents said that the main barrier to customers using EPO was that the customer was already convinced that they could not change their usage

### **Other Feedback**

- 40% of Respondents (8) said that Customers had billing questions following the implementation of hourly pricing but most of these questions were quite routine.
- Customers main concern regarding hourly pricing was the potential bill impact
- 90% of Respondents said that customers were satisfied with the new interval meters and the meter installation process
- 80% of Respondents said that implementing hourly pricing program augmented their job responsibilities.

## II. SUMMARY OF STAFF-ADMINISTERED CUSTOMER SURVEY RESULTS

### *A. Profile of Survey Respondents*

The response rate to the customer survey was high. The Public Service Commission Staff mailed surveys to 509 National Grid New York customers who had SC-3 accounts that became subject to hourly commodity billing prior to February 28<sup>th</sup>, 2007. Customers had the choice to mail back a paper copy of the survey to the PSC Staff or fill out the survey electronically. As of June 12<sup>th</sup> 2007, 205 customers (40%) had responded to the survey and 14% had done so electronically.<sup>9</sup>

For the most part, the industrial classification of the survey respondents, shown in Figure 1, mirrors the population of customers who migrated to hourly commodity billing. As shown in Table 1<sup>10</sup>, more than 40% of the respondents are manufacturing companies and half of these companies operate three shifts. Educational Institutions are the only group of customers that seem to be over represented in the survey. Schools account for about 20% of the customers who responded to the survey but only about 10% of the population of SC-3 customers who migrated to hourly pricing.

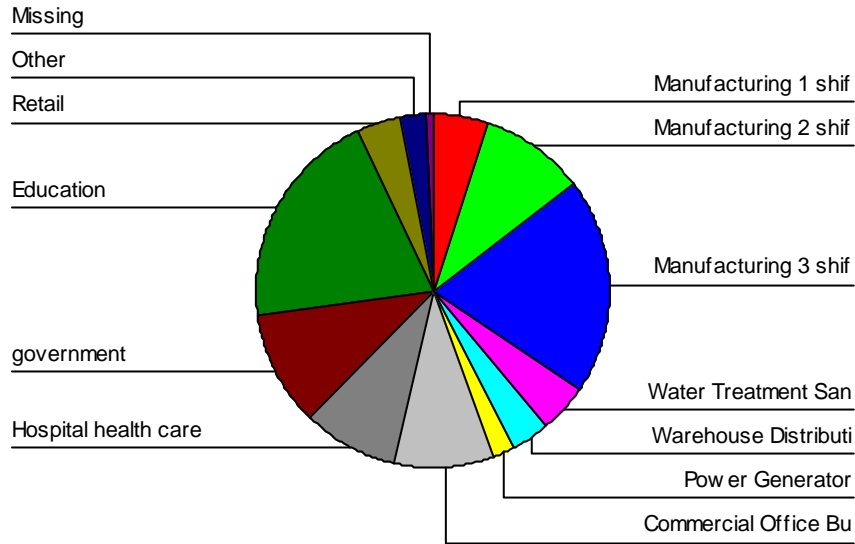
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<sup>9</sup> The 509 customers had 605 National Grid accounts that were eligible for commodity billing as of the end of February. This does not include the customers with 154 accounts that were enrolled in economic development programs and who had not opted in to hourly commodity billing. .

<sup>10</sup> See Appendix 5 for all tables referenced in this section of the report

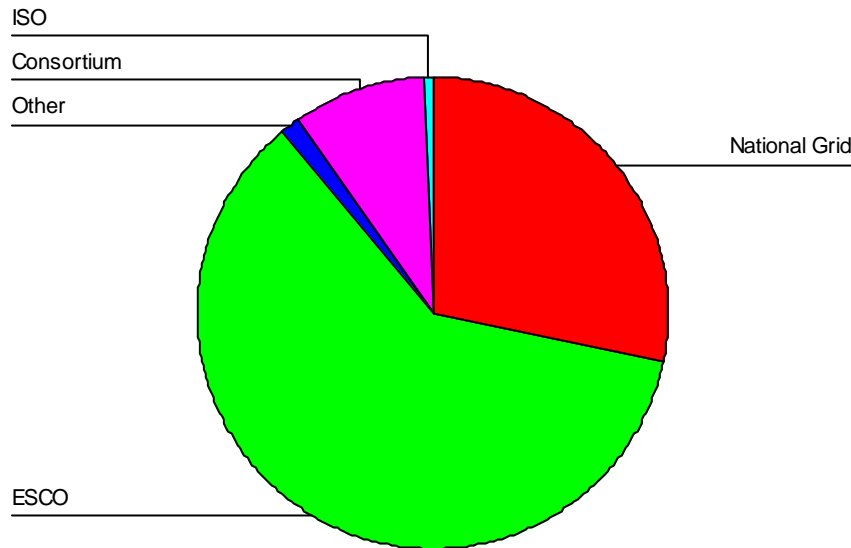
**Figure 1**

## Industry Classification of Survey Respondents



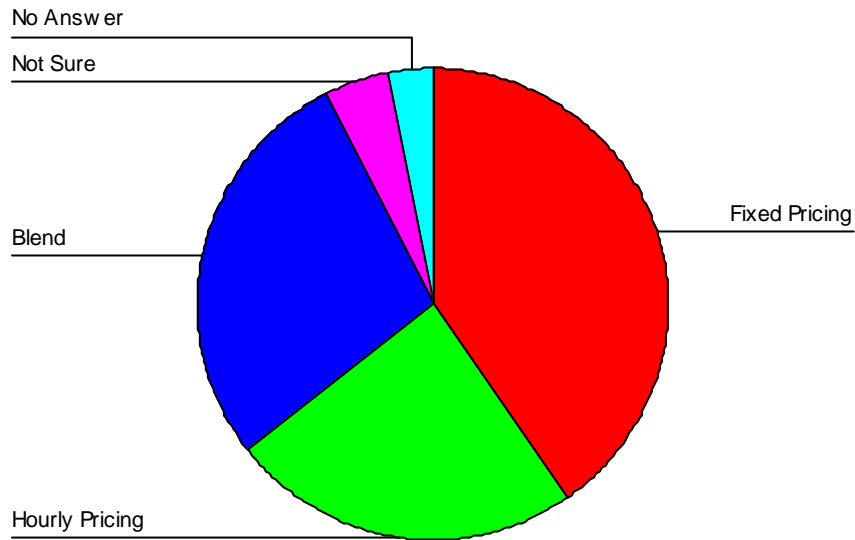
Because customers in the educational sector generally take commodity service from buying consortia, the preponderance of survey respondents from the education sector lowers the proportion of respondents who take commodity from National Grid or ESCos relative to the population. (See Figure 2) As shown in Table 2, 29 respondents (14%) said that they purchase their commodity through a consortium, 119 respondents (57%) said they take commodity service from ESCos, and 57 respondents (28%) cite National Grid as their commodity supplier. For the SC-3 hourly commodity billing population as a whole, the proportion of customers who take commodity service from National Grid is closer to 33% and the proportion of customers who take commodity service from ESCos is closer to 63%.

**Figure 2**  
**Electric Commodity Supplier**



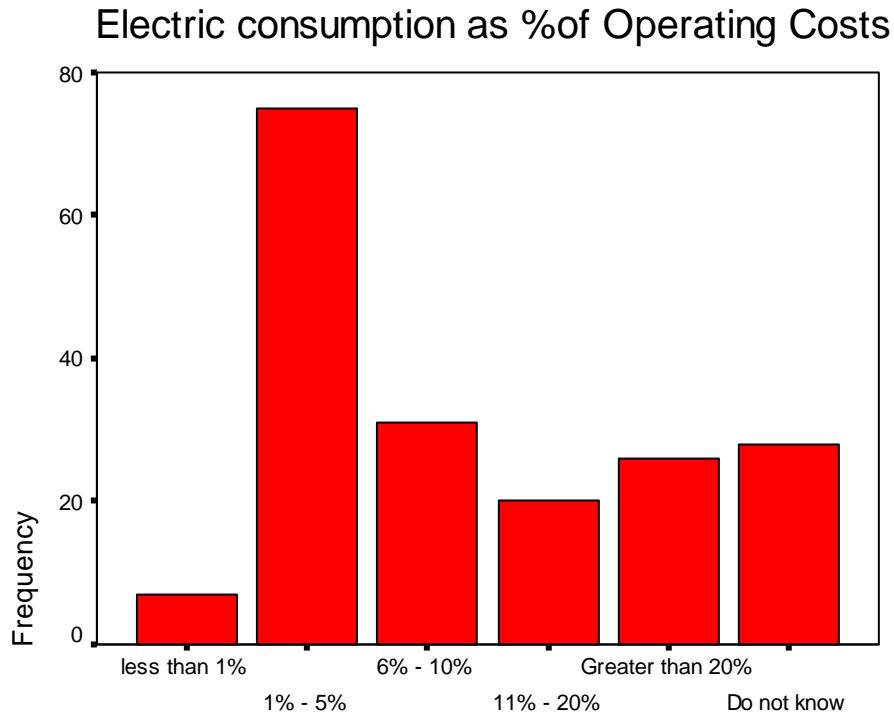
For the most part, SC-3 customers did not migrate to Retail Access to avoid the Company's hourly pricing program. Close to 88% of customers who take service from ESCOs indicate that hourly pricing did not prompt their move to retail access. (See Table 3). Moreover, almost 52% of the ESCo customers who answered this question also reported that their supply arrangement with the ESCo was, at least partially, based on hourly prices. (See Table 4). Indeed, Figure 3 suggests that Customers migrate to ESCos in order to obtain a wider variety of supply arrangements.

**Figure 3**  
**Pricing From Alternative Suppliers**



Electricity accounts for less than 10% of the operating budgets of most of the respondents. About 60% of survey respondents report that electricity consumes 1-to-10% of their operating budget (See Figure 4). Manufacturing companies, commercial office buildings and waste water treatment facilities account for the lion's share of companies who said that electricity consumes more than 10% of the operating budget. (See Table 5)

**Figure 4**



***B. Customer Views of Outreach and Education***

Customers said that National Grid provided the most useful information in orienting them to the program. As shown in Table 6, 72% of 192 respondents found the information provided by National Grid at least somewhat useful. Only 18% of respondents said that National Grid provided no information

It is notable that, 50 of the 55 customers who found the information provided by National Grid either not useful or non existent, also said they did not attend a Customer Workshop. (See Table 7) Of the 50 who did not attend, 34 respondents said that they did not know about the Workshops. The Company sent multiple mailings about the Customer Workshops and Account Managers spoke to all eligible customers individually. So, in all likelihood, these customers did not become eligible for hourly commodity



billing until after the Customer Workshops were held in May of 2006. The presentations from the Customer Workshops are posted on the company web site so customers that are new to hourly commodity billing, are either not aware of this information, or these printed materials are not being leveraged adequately in the on-going O & E effort.

Most respondents (75%) were aware of the Customer Workshops (See Table 8) and the 96% of those who attended (87 customers), said the Workshops were useful in helping to inform them about hourly commodity billing (See Table 8 and 9). This result is consistent with what customers said on exit surveys from the Workshops last May, which are summarized in Table 10.

About 50% of the respondents who attended the Workshops requested additional information from account managers and 98% of the respondents who requested additional information indicated that they had received this information. National Grid Account Managers subsequently followed up with all 41 survey respondents who indicated that they wanted more information and who provided their contact information.

Most respondents understand how their commodity bill is calculated and the Customer Workshops seem to have contributed to this understanding. About 80% or respondents said that they have at least some understanding of this calculation and the 70% of the customers who did not understand this calculation did not attend a customer workshop. National Grid is the commodity supplier for only one of the nine customers who both attended the workshop and said that they did not understand this calculation. Most of the others take commodity service from ESCos. (See Appendix 2, Table 11)

A majority of survey respondents said that they understand how to use the load management software, EPO that the Company offered to all SC-3 customers who migrated to hourly pricing through December 30, 2006. About 185 customers enrolled during the trial period. About 80% of the survey respondents indicated that they had at least some understanding of how to use EPO. More than 70% of the customers who said they had no understanding of how to use EPO did not attend the Customer Workshop. Of the customers who did attend the customer seminars, 80% of those who said they did not understand how to use EPO took service from ESCOs but half of these respondents were billed, at least partially, based on the hourly price. (See Table 11)

The Survey revealed several other notable results regarding customer understanding of key issues related to managing their commodity bill. First, most respondents (~90%) said that they understand the alternative supply options offered by ESCOs and that they were aware of opportunities to increase their energy efficiency. Second, less than 50% of customers said they understand how hedges can be used to offset electricity price risk. Third, about 70% of respondents said that they understand the NYISO Demand Response programs and NYSERDA's Technical Assistance Services and Incentives for energy efficiency advice/demand response measures. But fewer customers (60%) seem to understand NYSERDA programs related to installing on site generation. (Appendix 2, Table 11)

The survey also revealed that respondents who attended the Workshops were no more likely to understand how wholesale prices are determined or how to purchase financial hedges to manage electricity price risk, than those who did not attend the Workshops. Workshop attendees were also no more likely to understand NYSERDA's

Technical Assistance or Distributed Generation Programs or the NYISO's demand response programs

***C. Customer Views about Their Ability to Respond to Hourly Prices***

About 80% of respondents (159 customers) said that they cannot shift operations in response to hourly prices. (See Table 12) Customers in the education and retail industries seem to have even less operational flexible than others. Only 1 of 8 retail establishments said they could change operations in response to hourly prices and, for educational institutions this ratio was 2 of 40.

In their written comments, many schools and retailers were quite passionate about their inability to shift operations. However, one educational institution, most likely a secondary school, said that they didn't expect the program to impact them negatively because they begin to wind down operations at 2 PM--well before the peak in commodity prices during the non-summer months when schools are in session. And one retailer who said that they could change operations in response to hourly price also believed that the program would have a positive impact on their business because their peak demand generally occurs at the off-peak hours for the system.

Customers who operate warehouses, water treatment, and one shift manufacturing operations seem to have more flexibility in responding to hourly prices than others who responded to the survey. About 43% of warehouse customers (3 of 7) said they could shift operations in response to hourly prices and 100% of warehouse customers are billed for commodity at hourly prices either by NG or their ESCo. (See table 12 and 21). In written comments, one price-responsive warehouse customer said that they can pre-cool

refrigeration units when prices are lower. Electricity accounts for more than 10% of operating costs for most of the waste water treatment facilities in the survey and 33% of the respondents (3 of 9) from this industry said they could shift operations in response to hourly prices. In their written comments, two treatment facilities said that they had identified processes that can be moved to less expensive hours. Twenty percent of one-shift manufacturers said they could shift operations in response to price (2 of 10).

The survey also revealed that customers who report that electricity is a higher proportion of operating cost also seem to have more flexibility to shift operations. (See Table 13) This makes sense since these customers have more to gain from shifting operations in response to price. Customers who attended a Workshop also report a slightly greater ability to shift operations (See Table 14).

It is also notable that 50% of the respondents who indicate that their operations are not flexible enough to respond to hourly prices still take at least part of their service at hourly prices either from National Grid or an ESCo. This either confirms that customers do not understand how to purchase a hedge to mitigate electricity price risk, or that customers' view the cost of those hedges as too high.

Customers think it is useful to view day-ahead prices. As one would expect, a large proportion of respondents (82%) who have the ability to shift operations said it is helpful to view hourly day-ahead prices. More notable is the fact that even those who don't have the ability to shift operations find it useful to view hourly day-ahead prices. These customers may be considering conservation measures. (See Table 15) Less than 40% of respondents who are billed for all or part of their load on hourly prices by National Grid or the ESCo think that it is useful to see the day-ahead prices—a share only

slightly higher than that of customers who are billed at a fixed rate by their ESCo. (See Table 16)

Only 35% of respondents said they had the right amount of information to develop strategies in response to hourly price. Close to 75% of these customers indicated that they understood how to use EPO. In contrast, only about 54% of customers who said that they did not (or may not) have the right amount of information understood how to use EPO. (See Table 16) Twice as many customers who said that they had the right information to develop strategies had also attended a Workshop (See Table 18)

Most respondents said that they expected hourly commodity billing to have a small impact on their business. Almost 40% of customers thought that the change to hourly commodity billing would have only a minor impact on their business. Another 40% were unsure how hourly commodity billing would impact their business. (See Table 19)

Twice as many respondents thought that hourly commodity billing would have a negative impact on their business (17%) as those who expected a positive impact (9%). Many commercial office buildings, retail establishments and educational institutions expected a negative outcome. A large proportion (40%) of one shift manufacturers also had this point of view (See Table 20) It is notable, however, that almost 20% of the customers who have flat price commodity service, and who will, therefore experience no impact from hourly commodity billing, expect hourly commodity to have a negative impact..

Even though only 9% of customers expected hourly commodity billing to have a positive impact on their business, a higher proportion of 2-shift manufacturers, warehouses and commercial office buildings had this point of view (See Table 20).

In general, the written comments of three-shift, and especially two-shift manufacturing customers seemed more benign towards hourly commodity billing in written comments than other customers. These customers may have more experience with hourly commodity billing (from having SC-3A accounts) or they could be natural beneficiaries of hourly commodity billing because of their longer hours of operations.

Customers who said they can shift operations in response to the hourly price also tend to remain on hourly pricing (See Table 21) and think that hourly commodity billing will have a positive impact on their business. (See Table 19) However, in written comments, several customers who said they can shift operations also said they were unsure whether the benefit would be worth the cost to shift operations.

#### ***D. Customer Actions***

Inflexible labor schedules and insufficient resources to pay attention to hourly prices were the most prevalent barriers to price response cited by customers. Close to 100 customers cited inflexible labor schedules as a barrier to responding to hourly prices and 84 customers said that they did not have enough resources to pay attention to hourly prices. And 70 customers said either that managing electricity cost was not a priority or that the cost of responding outweighed the savings. Only 24 customers across a variety of industries said that faced no barriers in responding to price. In the written comments, one mining company indicated that they could not shift operations to off-peak hours because of the noise impact on their surrounding community (See Table 21)

The most prevalent response to the hourly pricing program over the past twelve months, according to respondents, has been to obtain energy audits, improve energy efficiency and to participate in NYSERDA programs. More than 80 customers said that they took action to improve energy efficiency over the past 12 months and an equal number said they would do so over the next twelve months. Close to 50 respondents have obtained energy audits over the last year and another 37 will do so the next year. Over 50 customers said they participated in NYSERDA programs over the past 12 months and an equal number said they would participate in these programs over the next 12 months. (See Table 22)

More customers will consider shifting load, using EPO, installing generation on-site and purchasing financial hedges in the year ahead than pursued these actions over the last year. But few respondents have pursued and will consider pursuing these actions. Seventeen customers said that they would shift electricity use to lower price hours in the year ahead, versus thirteen in the past 12 months. More than 25 customers expect to use load management software in the year ahead, compared to the 18 customers who reported using this software last year. Ten customers used on-site generation to respond to hourly prices last year, but eighteen customers said they would take this type of action over the next year. Indeed, only 29 customers said they would take no action in the year ahead versus the 43 respondents who said they did nothing over the last twelve months.

Fewer respondents said they would enroll in NYISO load management programs, switch to an ESCo or do nothing in the year ahead. Only 15 respondents said they would participate in NYISO demand response programs next year compared to the 53 customers

who said they joined these programs last year. And fewer customers (25) said they would consider switching to an ESCo compared to the 45 who said they did so last year.

### ***E. Some Noteworthy Written Comments from Customers***

#### **Responsiveness**

“It doesn't make sense for a school with 3000 kids in it. We cannot shift load so all it does is drive up our costs and the property tax resident must pay.”

“Education must be exempt from this. Children cannot be expected to change their learning time.”

“Housing projects should be exempt from this requirement - loads are not shift able.”

“We have done the items in Q15 [actions taken over the last 12 months] in order to conserve power and save money but not in response to fluctuations in hourly prices.”

#### **ESCos**

“We were with an energy provider and when hourly pricing came about we got an understanding and realized it was cheaper to not have an energy provider”.

“I have a difficult time getting straight answers from ESCos. They all tell me how much money they can save but when I ask what the down side is I get questionable answers. As near as I can tell they betting on market movement but are being conservative so

“It would be useful for ESCos to offer hourly pricing.”

“I have made several attempts to competitively bid for electricity supply for our facilities. It has been difficult to evaluate the various offers from ESCos and the potential savings was deemed to be modest, while there was some risk that the cost could actually be higher than staying with NG. More transparency and the ability to compare various suppliers historical pricing info (like stock prices) would be helpful.”

“I have a difficult time getting straight answers from ESCos. They all tell me how much money they can save but when I ask what the down side is I get questionable answers. As



near as I can tell they betting on market movement but are being conservative so as to make their money. There must be something in it I get calls almost daily.”

### **Process**

“There was not, as far as I am aware, an opportunity for input prior to it being implemented.”

Your process needs to be simplified so the every day consumer understands and can make an informed decision. Speak 'plain' English.

### **Meters**

“New hourly meters were not correctly programmed. Cause huge problem with metered demand and also took 8 months for National Grid to correct and credit.”

We carefully track usage & demand - new meters do not display peak demand (refresh every 15 min.). Compromised our ability to track demand - made our energy management program more difficult. Cost to view account info online (EPO) is exorbitant!

### **Hourly Pricing Concept**

“You need true competition and low cost distributed generation technology along with proper transmission infrastructure in order for reasonable hourly electricity prices, which doesn't exist. The application of marginal pricing theory is flawed in today”

“Nothing is clearer. But my understanding we are not being pooled with other industries to decide our pricing. I suppose that is a good thing.”

### **Hedging**

“Evaluating Fixed Pricing is difficult without readily available futures information as found in the oil and gas markets”.

### **NYSERDA**

“Need NYSERDA programs that will help the mining industries”

## **Distributed Generation**

“Current Tariffs make it difficult or impossible to run our generators to run our generators when the price of power spikes. When we last checked it was not economically feasible for us to sign up for the standby rate. The NYCAP/SCR program does allow us to generate, but only when called on by the NYISO”.

### **III LESSONS LEARNED AND OPPORTUNITIES TO IMPROVE THE IMPLEMENTATION PROCESS**

#### **Meter Installation**

Much of the strain that emerged in the technical part of the Phase 1 implementation was due to the accelerated schedule to install new interval metering. Although the Company met its goal to provide interval metering for most eligible customers three months ahead of the “Go Live” billing date, seven months was simply not enough time to procure, program, test and install ~1000 state-of-the-art interval meters. More time is required to allow for the inevitable issues that arise when employing a new technology. Moreover, with one year lead time, the meter installation process could be more seamlessly incorporated into the work planning process

In addition to the difficulties it created for the meter installation team, the compressed schedule also contributed to communication errors that impacted customers. Under the mistaken assumption that customers would have on-going access to EPO, the meter engineering team did not program the new meter display to include all of the information displayed on customer’s previous meter. Meter Engineering has since adopted a policy that any new meter will display at least as much information as the customer’s previous meter and the meters for any customer who had come to rely on the information from their previous meter have been reprogrammed.

## **Regulatory Direction**

The technical implementation process for Phase 1 would have gone more smoothly with earlier direction from the Commission. If the Commission had requested the Company's Plan to extend hourly pricing six months earlier (March 2005) and issued an Order Approving the Company's Implementation Plan, including cost recovery, before September 2005, the Company could have accelerated the meter procurement process. This would have avoided the difficulties created with the technical implementation process.

It would also have been helpful to resolve much earlier, the question of whether Economic Development Customers should be given the choice to affirmatively opt-in to hourly commodity billing. The late change-- well after the internal training and customer workshops-- created challenges for the O&E and Tariff Development teams and, in all likelihood, suppressed the opt-in rate by these customers. Despite the one-on-one meetings with customers, only 10% of the Economic Development Customers (20 of 209) opted in to the hourly commodity billing program, and 14 of these accounts belonged to one customer. This is troubling especially since the Company's analysis, filed in June 2006, showed that the majority of customers who participate in economic development rate programs would either benefit or experience no noticeable impact from hourly pricing even if they do not shift operations in response to hourly prices.

## **Outreach and Education**

It is clear from the survey responses from the Customer Service Organization and Customers, that the Workshops were an extremely helpful way to prepare customers for the program. As noted above, the customers who attended these meetings had a more favorable view of the information provided by the company and the flexibility of their operation to shift load in response to hourly prices. Even though all of the materials from the Workshops are available to Customers on the Company Web Site, it would have been helpful to also provide access to a video or web cast of the Workshop—for those customers who were unable to attend or who became eligible for MHP after the Customer Workshops.

Based on feedback from Customers, if the Company does another round of Workshops as part of extending MHP to more customers, the O&E Team may want to expand the coverage on energy efficiency, distributed generation, and how to use of financial hedges to mitigate electricity price risk. Customers would also benefit from more information regarding NYISO demand response programs.

EPO appears to be a useful tool for some customers migrating to hourly commodity billing. However, it is somewhat discouraging that 785 customers were enabled and only 185 customers actually used this service and only a small subset of these customers used the tool more than once. In the future, the Company will need to carefully consider the incremental benefit to customers versus the incremental cost of providing this service.

## **Improvements in the Survey**

The survey provided important insight into customer reactions to the program. In the future it may be useful to create a separate industry classification for correctional facilities on the survey form rather than capturing them as part of the “Other” category.

**APPENDIX 1**  
**ELECTRIC COMMODITY PRICING SURVEY**

**APPENDIX 2**  
**SURVEY OF TECHNICAL IMPLEMENTATION TEAM**



In the spirit of continuous improvement, we would like to obtain your feedback on the implementation process for the mandatory hourly pricing (MHP) program

1

How well did the overall implementation process work?

Poorly

Very Well

1 2 3 4 5

2

How involved were you in implementing MHP?

Not Very Involved

Very Involved

1 2 3 4 5

3

Did you have enough information about the MHP project to fulfill your role?

- ☐ Yes
- ☐ No
- ☐ Unsure

4

To what extent, did the MHP implementation add to your job responsibilities?

\_\_\_\_\_

Very little					To a great extent
	1	2	3	4	5

5

Did you see any challenges in any of the following implementation categories? If so, please explain

1 Yes	2 No	3 Unsure	N/A
Meter Selection, Testing Purchasing			

1	2	3	
Additional Comment			

Meter Installation (Field)

1	2	3	
Additional Comment			

Meter Installation (Head-End Communication Connection)

1	2	3	
Additional Comment			

Billing/Systems (including Accounts Processing, Settlements, IT support)

1	2	3	
---	---	---	--

Additional Comment




Legal and Regulatory Support

1

2

3

Additional Comment

Accounting and Finance

1

2

3

Additional Comment


Education and Out-Reach (including ESCo Services)

1

2

3

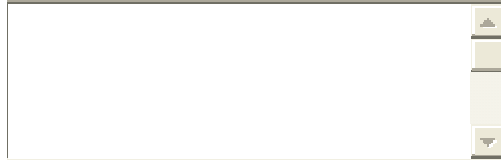
Additional Comment

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6

What would you suggest to help eliminate these challenges?



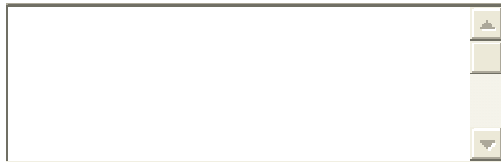
7

If National Grid decided to extend the MHP program to smaller SC3 customers, what challenges would you anticipate?



8

What would you suggest to help overcome those challenges?



9

Should we need to communicate additional program guidelines, what would be the best method to reach you?

- ☐ Email
- ☐ Meetings
- ☐ Interoffice memo
- ☐ Other, please specify



10

What are your recommendations for improving program implementation?



**APPENDIX 3**  
**SURVEY OF CUSTOMER SERVICE EMPLOYEES WHO**  
**SUPPORTED MHP IMPLEMENTATION**

In the spirit of continuous improvement, we would like to obtain your feedback on the implementation process for the mandatory hourly pricing (MHP) program

1

How well did the overall implementation process work?

Poorly					Very Well
1	2	3	4	5	

2

How involved were you in implementing MHP?

Not Very Involved					Very Involved
1	2	3	4	5	

3

How many of your customers were eligible for the MHP program?

4

How many times did you meet with customers one-on-one to discuss the MHP program?

5

Did you understand the program well enough to support your customers?

Yes	No	Unsure
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

6

How helpful were each of the following in enabling you to understand the program?

1 Not helpful      2      3 Helpful      4      5 Very helpful      N/A

Quarterly Meeting Briefing

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------

Business & Energy Articles

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------

Bill Comparisons

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------

Conference Calls

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------

Other

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------

7

What additional information/training would you have liked to receive on the MHP to better support your customers?

8



How effective were the CUSTOMER meetings?

Not effective				Very effective	NA
1	2	3	4	5	6

9

In general, what did your customers think about the customer meetings?

Not helpful				Very helpful	NA
1	2	3	4	5	6

10

Approximately, what percent of your MHP affected customers attended the Customer meeting?

- ☐ NA
- ☐ %

11

Would any of the following improve the effectiveness of the customer meetings?

1 Yes	2 No	3 Unsure	N/A
Additional customer meetings			
1	2	3	
Meetings closer to implementation			
1	2	3	

Different topics

1

2

3

Different speakers

1

2

3

Different format

1

2

3

Different locations

1

2

3

Other

1

2

3

12

How many of your customers enrolled in the 6 month free subscription to Energy Profiler On-line (EPO)?

☐ NA

☐ #

13

How useful did your customers find EPO?

Not useful

Useful

Very useful

1

2

3

4

5

14

What barriers did your customers have in using EPO?

- ☐ Didn't feel they needed it
- ☐ Already convinced they could not change usage
- ☐ Didn't understand how to use it
- ☐ Found it difficult to enroll
- ☐ Not Applicable
- ☐ Other, please specify

15

Did any of your customer have billing questions/concerns following the implementation of MHP?

Yes	No	Unsure	NA
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

16

If so, what?

17

What additional training/materials would be useful to customers in getting the most value from the MHP program?

18

What were customers primary concerns regarding MHP?

19

How satisfied were your customers with the new interval meter?

Not satisfied		Satisfied		Very satisfied	NA
1	2	3	4	5	6

20

How would your customers rate the meter installation process?

Poor				Excellent	NA
1	2	3	4	5	6

21

To what extent, did the MHP implementation add to your job responsibilities?

Very little				To a great extent
1	2	3	4	5

22

Did you see any challenges in any of the following implementation categories? If yes, please explain

1 Yes	2 No	3 Unsure	N/A
Additional Comment			

▲

■

▼

---

Meter Selection, Testing Purchasing

<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/>
-------------------------	-------------------------	-------------------------	-----------------------

---

Meter Installation (Field)

<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/>
-------------------------	-------------------------	-------------------------	-----------------------

Additional Comment

▲

■

▼

Additional Comment

▲

■

▼

---

Meter Installation (Head-End Communication Connection)

<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/>
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Billing/Systems (including Accounts Processing, Settlements, IT support)

<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/>
-------------------------	-------------------------	-------------------------	-----------------------

Additional Comment

Additional Comment

---

Legal and Regulatory Support

1

2

3

---

Account and Finance

1

2

3

Additional Comment

Additional Comment

---

Education and Out-Reach (including ESCo Services)

1

2

3

---

23

What suggestions do you have for any challenges that you discussed?

---

24

If National Grid decided to extend the MHP program to smaller SC3 customers, what challenges would you anticipate?

---

25

What would you suggest to overcome those challenges?

---

26

Should we need to communicate additional program guidelines, what would be the best method to reach you?

- ☐ Email
- ☐ Meetings
- ☐ Interoffice memo
- ☐ Other, please specify

---

27

What are your recommendations for improving program implementation?

**APPENDIX 4**  
**TASK LIST FOR IMPLEMENTATION TEAM**



## **APPENDIX 4**

### ***Implementation Tasks and Responsible Departments***

- Review method used to calculate hourly price
  - [Electric Pricing, Energy Supply]
- Calculate hourly prices and post to web-site (on-going)
  - [Meter Data Services]
- Identify eligible & new load sample customers
  - [Billing & Systems]
- Generate & prioritize meter orders
  - [Billing & Systems]
- Revise load shape used for ISO settlement
  - [Meter Data Services]
- Evaluate, order, test and program interval meters/communication modules
  - [Meter Engineering]
- Install meters and communication links
  - [Field Operations]
- Head-end communication link to enable billing and ISO settlement
  - [Meter Data Services]
- Validate and edit interval meter data (on-going)
  - [Meter Data Services]
- Change billing system/settlements process
  - [Billing & Systems]
- Determine implementation costs, revenue requirement, deferral account adjustments and incremental customer charge
  - [Financial Analysis]
- Identify Tariff Changes
  - [Program Policy, Electric Pricing, Energy Supply]
- Prepare and customer service staff and customers
  - [Program and Policy Administration]
- Customer Impact Analysis
  - [Electric Pricing]
- Modify Energy Profiler On-line (EPO) to Show Hourly Energy Costs
  - [Program and Policy, Meter Data Services and Information Technology]
- Switch customers to new MHP rate
  - [Billing & Systems]
- Policy to Handle Contract Customers
  - [Legal]
- Tariff Filings
  - [Project Manager and Legal]
- Develop Procedure for On-going Project Implementation
  - [Program and Policy]

**APPENDIX 5**  
**RESULTS FROM CUSTOMER SURVEY**

**TABLE 1. INDUSTRIAL CLASSIFICATION OF RESPONDENTS**

	Frequency	Percent	Valid Percent	Cumulative Percent
Manufacturing 1 shift	10	4.9	4.9	4.9
Manufacturing 2 shifts	19	9.3	9.3	14.2
Manufacturing 3 shifts	40	19.5	19.6	33.8
Water Treatment San	9	4.4	4.4	38.2
Warehouse Distribution	7	3.4	3.4	41.6
Power Generator	3	1.5	1.5	43.1
Commercial Office Building	16	7.8	7.8	50.9
Hospital health care	13	6.3	6.4	57.3
Government	15	7.3	7.4	64.7
Education	40	19.5	19.6	84.3
Retail	9	4.4	4.4	88.7
Other	23	11.2	11.3	100.0
Total	204	99.5	100.0	
System	1	.5		
<b>Total</b>	<b>205</b>	<b>100.0</b>		

**TABLE 2. ELECTRIC COMMODITY SUPPLIER OF SURVEY RESPONDENTS**

Supplier	Frequency	Percent
National Grid	57	27.8
ESCO	119	58.0
Other	29	14.1
<b>Total</b>	<b>205</b>	<b>100.0</b>

**TABLE 3. DID YOU SWITCH TO ESCO TO AVOID NATIONAL GRID'S HOURLY PRICING SERVICE?**

	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	14	11.8	12.2	12.2
No	101	84.9	87.8	100.0
Total	115	96.7	100.0	
Missing	4	3.4		
<b>Total</b>	<b>119</b>	<b>100.0</b>		

*\*only asked of respondents who switched to an ESCO*

**TABLE 4. HOW DOES YOUR ALTERNATIVE SUPPLIER CHARGE YOU FOR ELECTRICITY SUPPLY?**

	Frequency	Percent	Valid Percent	Cumulative Percent
Fixed Pricing	41	34.5	35.4	35.4
Hourly Pricing	24	20.2	20.7	56.1
Blend	36	30.3	31.0	87.1
Not Sure	2	1.7	1.7	88.8
Other	13	10.9	11.2	100.0
Total	116	97.5	100.0	
Missing	3	2.5		
<b>Total</b>	<b>119*</b>	<b>100.0</b>		

*\*only asked of respondents who switched to an ESCO*

**TABLE 5. CROSS TABULATION OF RESPONDENTS BY INDUSTRY AND ELECTRICITY AS % OF OPERATING COSTS**

	ELECTRIC CONSUMPTION						
	Less than 1%	1% - 5%	6% - 10%	11% - 20%	Greater than 20%	Do not know	Total
Manufacturing 1 shift	1	2	3	2	1	1	10
Manufacturing 2 shifts	0	7	5	0	3	4	19
Manufacturing 3 shifts	2	17	6	8	1	6	40
Water Treatment San	0	0	2	1	6	0	9
Warehouse Distribution	0	4	2	0	1	0	7
Power Generator	0	2	1	0	0	0	3
Commercial Office Building	0	4	1	3	2	6	16
Hospital health care	1	10	0	0	0	2	13
Government	1	3	1	2	3	5	15
Education	2	22	8	1	2	5	40
Retail	0	6	0	1	1	1	9
Other	0	0	3	2	7	12	24
<b>Total</b>	<b>7</b>	<b>77</b>	<b>32</b>	<b>20</b>	<b>27</b>	<b>42</b>	<b>205</b>

**TABLE 6. CUSTOMER RATING OF THE USEFULNESS OF INFORMATION PROVIDED BY NATIONAL GRID**

	Not at all Useful	Less than Somewhat Useful	Somewhat Useful	Useful	Very Useful	Did not provide information
National Grid O&E	3.5%	6.0%	28.2%	27.6%	16.6%	18.1%
ESCO O&E	4.4%	8.3%	19.9%	17.1%	7.7%	42.5%
NYISO O&E Info	2.4%	1.2%	7.7%	4.8%	1.2%	82.7%
PSC O&E Info	1.8%	1.8%	7.9%	1.2%	1.2%	86.0%
NYSERDA O&E Info	2.3%	4.1%	17.0%	12.3%	2.3%	62.0%
Industry Assoc O&E Info	.6%	4.3%	8.5%	7.3%	3.7%	75.6%

**TABLE 7. CROSS TABULATION OF CUSTOMER OPINION ABOUT INFORMATION PROVIDED BY NG AND CUSTOMER ATTENDANCE AT WORKSHOPS**

	NATIONAL GRID HP INFO				
	Not Very Useful	Somewhat Useful	Very Useful	Did not provide information	Total
No, but I was aware of the workshop	9	21	25	7	62
No, I was not aware of the workshop	7	10	6	27	50
Yes, I attended	3	25	56	2	86
<b>Total</b>	<b>19</b>	<b>56</b>	<b>87</b>	<b>36</b>	<b>198</b>

**TABLE 8. ATTENDANCE AND AWARENESS OF CUSTOMER WORKSHOPS**

	Frequency	Percent	Valid Percent	Cumulative Percent
Yes, I attended	86	42.0	42.6	42.6
No, but I was aware of the workshop	64	31.2	31.7	74.3
No, I was not aware	52	25.4	25.7	100.0
Total	202	98.5	100.0	
System	3	1.5		
<b>Total</b>	<b>205</b>	<b>100.0</b>		

**TABLE 9. HOW USEFUL WERE THE CUSTOMER WORKSHOPS?**

	Frequency	Percent	Valid Percent	Cumulative Percent
Not at all Helpful	1	1.2	1.2	1.2
Not Helpful	1	1.2	1.2	2.4
Somewhat Helpful	28	32.6	32.6	35.0
Helpful	34	39.5	39.5	74.5
Very Helpful	22	25.6	25.6	100.0
<b>Total*</b>	<b>86</b>	<b>100.0</b>		

*\*only asked of respondents who attended workshop*

**TABLE 10. EXIT SURVEY RESULTS FROM CUSTOMER WORKSHOPS**

	Not at all Informative				Very Informative		Total
How informative was this seminar?	0	1	15	92	23		131
	Yes	No	Not Sure				Total
Do you need more information on this topic?	60	35	36				131
How useful were the presentations?							
	Not Useful				Very Useful		Total
"What is mandatory hourly pricing...?"	0	2	29	76	25		132
"How to get the most out of hourly pricing"	0	2	32	79	19		132
Customer Testimonials	6	14	28	27	11		86
"New Online Load Management Software"	0	1	25	71	34		131
"Ways NYSERDA can Help"	3	7	42	56	19		127
	Not worth your time				Very worth your time	Not sure	Total
How worth your time was today's event?	0	0	18	73	37	2	128
	Negatively				Positively	Not sure	Total
How do you feel this program will affect your business?	2	11	17	26	46	29	102

**TABLE 11. HOW CUSTOMERS RATE THEIR UNDERSTANDING OF VARIOUS ISSUES RELATED TO MANAGING THEIR COMMODITY BILLS (PERCENT OF RESPONDENTS)**

	<b>Do not Understand</b>		<b>Somewhat Understand</b>		<b>Thoroughly Understand</b>
How Wholesale Energy Prices are Set	13.8%	14.9%	41.0%	23.4%	6.9%
How Commodity Bill is Calculated	7.4%	9.5%	36.8%	33.2%	13.2%
How to use EPO	19.5%	18.9%	30.8%	20.0%	10.8%
ESCO Alternatives	5.8%	3.7%	23.6%	34.0%	33.0%
Purchasing Financial Hedges	29.9%	20.1%	20.7%	18.5%	10.9%
Energy Efficiency Opportunities	6.9%	5.8%	28.6%	34.4%	24.3%
NYISO DRP	28.0%	10.8%	25.8%	23.7%	11.8%
NYSERDA TAS	20.3%	10.4%	25.3%	26.4%	17.6%
NYSERDA EE	17.2%	11.3%	29.6%	25.3%	16.7%
NYSERDA DG Programs	26.2%	16.4%	29.0%	15.3%	13.1%



**TABLE 12. CROSS TABULATION OF “CUSTOMERS’ INDUSTRIAL CLASSIFICATION” AND “FLEXIBILITY TO SHIFT OPERATIONS IN RESPONSE TO HOURLY PRICES”**

		Can Shift in Response to Hourly Price			
		No	Unsure	Yes	Total
Manufacturing 1 Shift	Count	8	0	2	10
	% within Industry Classification	80.0%	.0%	20.0%	100.0%
Manufacturing 2 Shifts	Count	17	0	2	19
	% within Industry Classification	89.5%	.0%	10.5%	100.0%
Manufacturing 3 Shifts	Count	32	6	2	40
	% within Industry Classification	80.0%	15.0%	5.0%	100.0%
Water Treatment San	Count	4	2	3	9
	% within Industry Classification	44.4%	22.2%	33.3%	100.0%
Warehouse Distribution	Count	3	1	3	7
	% within Industry Classification	42.9%	14.3%	42.9%	100.0%
Power Generator	Count	1	0	2	3
	% within Industry Classification	33.3%	.0%	66.7%	100.0%
Commercial Office Building	Count	13	2	1	16
	% within Industry Classification	81.3%	12.5%	6.3%	100.0%
Hospital Health Care	Count	10	1	2	13
	% within Industry Classification	76.9%	7.7%	15.4%	100.0%
Government	Count	12	1	2	15
	% within Industry Classification	80.0%	6.7%	13.3%	100.0%
Education	Count	36	1	3	40
	% within Industry Classification	90.0%	2.5%	7.5%	100.0%
Retail	Count	8	0	1	9
	% within Industry Classification	88.9%	.0%	11.1%	100.0%
Other	Count	19	3	1	23
	% within Industry Classification	82.6%	13.0 %	4.3%	100.0%
<b>Total</b>	<b>Count</b>	<b>163</b>	<b>17</b>	<b>24</b>	<b>204</b>
	<b>% within Industry Classification</b>	<b>79.5%</b>	<b>8.3%</b>	<b>11.7%</b>	<b>100.0%</b>

**TABLE 13. CROSS TABULATION OF “ELECTRICITY COSTS AS % OF OPERATING COSTS” AND  
“CUSTOMER FLEXIBILITY TO RESPOND TO HOURLY PRICES”**

		Facility Flexibility			
		Not Flexible	Unsure	Flexible	Total
Less than 1%	Count	6	0	1	7
	% within Electric consumption	85.7%	.0%	14.3%	100.0%
	% within Facility Flexibility	3.7%	.0%	4.2%	3.4%
1% - 5%	Count	65	5	7	77
	% within Electric consumption	84.4%	6.5%	9.1%	100.0%
	% within Facility Flexibility	39.9%	29.4%	29.2%	37.6%
6% - 10%	Count	26	2	4	32
	% within Electric consumption	81.3%	6.3%	12.5%	100.0%
	% within Facility Flexibility	16.0%	11.8%	16.7%	15.6%
11% - 20%	Count	15	2	3	20
	% within Electric consumption	75.0%	10.0%	15.0%	100.0%
	% within Facility Flexibility	9.2%	11.8%	12.5%	9.8%
Greater than 20%	Count	18	4	5	27
	% within Electric consumption	66.7%	14.8%	18.5%	100.0%
	% within Facility Flexibility	11.0%	23.5%	20.8%	13.2%
Do not know	Count	25	4	3	31
	% within Electric consumption	78.1%	12.5%	9.4%	100.0%
	% within Facility Flexibility	15.3%	18.1%	12.5%	15.3%
<b>Total</b>	<b>Count</b>	<b>163</b>	<b>18</b>	<b>24</b>	<b>205</b>
	<b>% within Electric consumption</b>	<b>79.5%</b>	<b>8.8%</b>	<b>11.7%</b>	<b>100.0%</b>
	<b>% within Facility Flexibility</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

**TABLE 14. CROSS TABULATION OF CUSTOMER “ATTENDANCE AT WORKSHOPS” AND FLEXIBILITY TO RESPOND TO HOURLY PRICES”**

		Facility Flexibility			
		Not Flexible	Unsure	Flexible	Total
Yes, I attended	Count	67	9	10	86
	% within Workshop	77.9%	10.5%	11.6%	100.0%
	% within Facility Flexibility	41.1%	52.9%	41.7%	42.0%
No, but I was aware of the workshop	Count	54	2	8	64
	% within Workshop	84.4%	3.1%	12.5%	100.0%
	% within Facility Flexibility	33.1%	11.8%	33.3%	31.2%
No, I was not aware	Count	41	6	5	52
	% within Workshop	78.8%	11.5%	9.6%	100.0%
	% within Facility Flexibility	25.2%	35.3%	20.8%	25.4%
<b>Total</b>	<b>Count</b>	<b>163</b>	<b>18</b>	<b>24</b>	<b>205</b>
	<b>% within Workshop</b>	<b>79.5%</b>	<b>8.8%</b>	<b>11.7%</b>	<b>100.0%</b>
	<b>% within Facility Flexibility</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

**TABLE 15. CROSS TABULATION OF “USEFULNESS OF DAY-AHEAD PRICES” AND “FLEXIBILITY TO RESPOND TO HOURLY PRICES”**

Helpful to See Day -Ahead Hourly Prices		Facility Flexibility			
		No	Unsure	Yes	Total
Yes	Count	47	6	19	72
	% within Hourly Pricing	65.3%	8.3%	26.4%	100.0%
	% within Facility Flexibility	28.8%	35.3%	79.2%	35.1%
No	Count	80	4	2	86
	% within Hourly Pricing	93.0%	4.7%	2.3%	100.0%
	% within Facility Flexibility	49.1%	23.5%	8.3%	42.0%
Unsure	Count	36	7	3	46
	% within Hourly Pricing	78.3%	15.2%	6.5%	100.0%
	% within Facility Flexibility	22.1%	41.2%	12.5%	22.4%
<b>Total</b>	<b>Count</b>	<b>163</b>	<b>18</b>	<b>24</b>	<b>205</b>
	<b>% within Hourly Pricing</b>	<b>79.5%</b>	<b>8.8%</b>	<b>11.7%</b>	<b>100.0%</b>
	<b>% within Facility Flexibility</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

**TABLE 16. CROSS TABULATION OF “COMMODITY BILLING METHOD” AND “USEFULNESS TO VIEW DAY-AHEAD PRICES”**

Useful to view day-ahead prices		Billed at least partially on Hourly Prices			
		Yes	No	Unsure	Total
Yes	Count	48	12	12	72
	% within Hourly Pricing	66.7%	16.7%	16.7%	100.0%
	% within HP	39.3%	24.0%	36.4%	35.1%
No	Count	43	31	12	86
	% within Hourly Pricing	50.0%	36.0%	14.0%	100.0%
	% within HP	35.2%	62.0%	36.4%	42.0%
Unsure	Count	31	7	9	47
	% within Hourly Pricing	66.0%	14.9%	19.1%	100.0%
	% within HP	25.4%	14.0%	27.3%	22.9%
<b>Total</b>	<b>Count</b>	<b>122</b>	<b>50</b>	<b>33</b>	<b>205</b>
	<b>% within Hourly Pricing</b>	<b>60.0%</b>	<b>24.4%</b>	<b>15.6%</b>	<b>100.0%</b>
	<b>% within HP</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

**TABLE 17. CROSS TABULATION OF CUSTOMERS “HAVING NECESSARY INFORMATION TO DEVELOP A STRATEGY TO RESPOND TO HOURLY PRICES” AND “UNDERSTANDING OF ENERGY PROFILER ON-LINE (EPO)”**

Understand How to Use EPO		Have Information to Develop Strategic Response to HP			
		Yes	No	Unsure	Total
Do not Understand at all	Count	3	20	13	36
	% within Use EPO	8.3%	55.6%	36.1%	100.0%
	% within Strategic Response to HP	4.7%	26.3%	28.8%	19.5%
Do not Understand	Count	14	13	8	35
	% within Use EPO	40.0%	37.1%	22.9%	100.0%
	% within Strategic Response to HP	21.9%	17.1%	19.5%	18.9%
Somewhat Understand	Count	16	26	15	57
	% within Use EPO	28.1%	45.6%	26.4%	100.0%
	% within Strategic Response to HP	25.0%	34.2%	33.3%	30.8%
Understand	Count	19	9	9	37
	% within Use EPO	51.4%	24.3%	24.3%	100.0%
	% within Strategic Response to HP	29.7%	11.8%	22.0%	20.0%
Thoroughly Understand	Count	12	8	0	20
	% within Use EPO	60.0%	40.0%	.0%	100.0%
	% within Strategic Response to HP	18.8%	10.5%	.0%	10.8%
<b>Total</b>	<b>Count</b>	<b>64</b>	<b>76</b>	<b>45</b>	<b>185</b>
	<b>% within Use EPO</b>	<b>34.6%</b>	<b>41.1%</b>	<b>24.4%</b>	<b>100.0%</b>
	<b>% within Strategic Response to HP</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

**TABLE 18. CROSS TABULATION OF CUSTOMERS “HAVING NECESSARY INFORMATION TO DEVELOP A STRATEGY TO RESPOND TO HOURLY PRICES” AND “ATTENDANCE AT CUSTOMER WORKSHOP”**

Workshops		Have Information Develop Strategic Response to HP			
		Yes	No	Unsure	Total
Yes, I attended	Count	44	26	16	86
	% within Workshop	51.2%	30.2%	18.6%	100.0%
No, but I was aware of the workshop	Count	20	26	18	64
	% within Workshop	31.3%	40.6%	28.2%	100.0%
No, I was not aware	Count	4	35	13	52
	% within Workshop	7.7%	67.3%	25.0%	100.0%
<b>Total</b>	<b>Count</b>	<b>69</b>	<b>87</b>	<b>49</b>	<b>192</b>
	<b>% within Workshop</b>	<b>33.7%</b>	<b>42.4%</b>	<b>23.9%</b>	<b>100.0%</b>

**TABLE 19. CROSS TABULATION OF CUSTOMER “FLEXIBILITY TO SHIFT OPERATIONS IN RESPONSE TO HOURLY PRICES” AND “EXPECTED EFFECT OF HOURLY PRICING ON CUSTOMER BUSINESS”**

Flexible to Respond to Hourly Prices		Effect of HP on Business				
		Positively	Not very much at all	Negatively	Unsure	Total
No	Count	9	63	30	61	163
	% within Facility Flexibility	5.5%	38.7%	18.4%	37.4%	100.0%
Unsure	Count	3	7	1	6	17
	% within Facility Flexibility	17.6%	41.2%	5.9%	35.3%	100.0%
Yes	Count	6	6	2	10	24
	% within Facility Flexibility	25.0%	25.0%	8.3%	41.7%	100.0%
<b>Total</b>	<b>Count</b>	<b>18</b>	<b>76</b>	<b>33</b>	<b>78</b>	<b>196</b>
	<b>% within Facility Flexibility</b>	<b>8.8%</b>	<b>37.1%</b>	<b>16.1%</b>	<b>38.1%</b>	<b>100.0%</b>

**TABLE 20. CROSS TABULATION OF CUSTOMERS' "INDUSTRY CLASSIFICATION" AND EXPECTED EFFECT OF HOURLY PRICING ON CUSTOMER BUSINESS"**

		Effect of HP on Business				
		Positively	Not very much at all	Negatively	Unsure	Total
Manufacturing 1 shift	Count	0	2	4	4	10
	% within Industry Classification	.0%	20.0%	40.0%	40.0%	100.0%
Manufacturing 2 shifts	Count	3	3	2	11	19
	% within Industry Classification	15.8%	15.8%	10.5%	57.9%	100.0%
Manufacturing 3 shifts	Count	4	19	4	13	40
	% within Industry Classification	10.0%	46.2%	10.3%	33.3%	100.0%
Water Treatment San	Count	1	7	0	1	9
	% within Industry Classification	11.1%	77.8%	.0%	11.1%	100.0%
Warehouse Distribution	Count	1	3	1	2	7
	% within Industry Classification	14.3%	42.9%	14.3%	28.6%	100.0%
Power Generator	Count	0	2	0	1	3
	% within Industry Classification	.0%	66.7%	.0%	33.3%	100.0%
Commercial Office Building	Count	2	5	4	5	16
	% within Industry Classification	12.5%	31.3%	25.0%	31.3%	100.0%
Hospital Health Care	Count	0	6	0	7	13
	% within Industry Classification	.0%	46.2%	.0%	53.8%	100.0%
Government	Count	1	6	2	6	15
	% within Industry Classification	6.7%	40.0%	13.3%	40.0%	100.0%
Education	Count	2	12	10	16	40
	% within Industry Classification	5.0%	30.0%	25.0%	40.0%	100.0%
Retail	Count	1	2	2	4	9
	% within Industry Classification	11.1%	22.2%	22.2%	44.4%	100.0%
Other	Count	3	9	4	7	23
	% within Industry Classification	13.0%	39.1%	17.4%	30.4%	100.0%
<b>Total</b>	<b>Count</b>	<b>18</b>	<b>76</b>	<b>33</b>	<b>78</b>	<b>205</b>
	<b>% within Industry Classification</b>	<b>8.8%</b>	<b>37.1%</b>	<b>16.1%</b>	<b>38.1%</b>	<b>100.0%</b>



**TABLE 21. CROSS TABULATION OF “TYPE OF COMMODITY SERVICE” AND “EXPECTED IMPACT ON CUSTOMER BUSINESS”**

		Effect of HP on Business				
		Positively	Not very much at all	Negatively	Unsure	Total
Some Hourly Priced Commodity Service	Count	15	42	15	51	123
	% within HP	12.2%	34.1%	12.2%	41.4%	100.0%
Fixed Price Commodity Service	Count	2	24	8	16	50
	% within HP	4.0%	48.0%	16.0%	32.0%	100.0%
Unsure	Count	1	10	10	11	32
	% within HP	3.1%	31.3%	31.3%	34.4%	100.0%
<b>Total</b>	<b>Count</b>	<b>18</b>	<b>76</b>	<b>33</b>	<b>79</b>	<b>195</b>
	<b>% within HP</b>	<b>8.8%</b>	<b>37.1%</b>	<b>16.1%</b>	<b>38.1%</b>	<b>100.0%</b>

**TABLE 22. CROSS TABULATION OF “INDUSTRIAL CLASSIFICATION” AND “BILLING BASED ON HOURLY PRICES EITHER THROUGH NG OR ESCO”**

		Pricing Type			
		Hourly Pricing	Fixed Pricing	Unsure	Total
Commercial Office Building	Count	10	5	1	16
	% within Industry	62.5%	31.3%	6.3%	100.0%
Education	Count	13	12	15	40
	% within Industry	32.5%	30.0%	37.5%	100.0%
Government	Count	9	4	2	15
	% within Industry	60.0%	26.7%	13.3%	100.0%
Hospital, Nursing Home or other Health Care	Count	10	3	0	13
	% within Industry	76.9%	23.1%	.0%	100.0%
Manufacturing (one-shift operation)	Count	6	3	1	10
	% within Industry	60.0%	30.0%	10.0%	100.0%
Manufacturing (three-shift operation)	Count	26	11	3	40
	% within Industry	65.0%	27.5%	7.5%	100.0%
Manufacturing (two-shift operation)	Count	14	3	2	19
	% within Industry	73.7%	15.8%	10.5%	100.0%
Other	Count	16	5	2	23
	% within Industry	69.6%	21.7%	8.7%	100.0%
Power Generator	Count	2	0	1	3
	% within Industry	66.7%	.0%	33.3%	100.0%
Retail	Count	5	2	2	9
	% within Industry	55.6%	22.2%	22.2%	100.0%
Water Treatment/ Sanitation Facilities	Count	5	2	2	9
	% within Industry	55.6%	22.2%	22.2%	100.0%
Warehouse/Distribution Facilities	Count	6	0	1	7
	% within Industry	85.7%	.0%	14.3%	100.0%
<b>Total</b>	<b>Count</b>	<b>123</b>	<b>50</b>	<b>32</b>	<b>205</b>
	<b>% within Industry</b>	<b>60.0%</b>	<b>24.4%</b>	<b>15.6%</b>	<b>100.0%</b>

**TABLE 23. NUMBER OF CUSTOMERS WHO CITE ITEM AS A BARRIER TO RESPONDING TO HOURLY PRICES**

	Number of Respondents "Yes"	Percent* "Yes"
Insufficient resources to pay attention to hourly prices	83	40.7%
Inflexible labor schedule	104	51.0%
Managing electricity use is not a priority in my organization	24	11.8%
The cost of responding outweighs the savings	37	18.1%
Negative previous experience with day-ahead hourly pricing	5	2.5%
Other	35	17.2%
No barriers have been encountered	23	11.3%

\*percent based on 204 eligible respondents

**TABLE 24. NUMBER OF CUSTOMERS WHO HAVE TAKEN ACTION IN RESPONSE TO HOURLY PRICES OVER PREVIOUS 12 MONTHS AND WHO PLAN TO TAKE THE ACTION OVER THE NEXT 12 MONTHS**

Actions	PREVIOUS 12 MONTHS		NEXT 12 MONTHS	
	Number of Respondents	Percent	Number of Respondents	Percent
Energy Audit	47	22.9%	39	19.0%
Improve Energy Efficiency	81	39.7%	81	39.7%
Shift Electricity Demand	13	6.3%	23	11.2%
Purchase Financial Hedges	17	8.3%	27	13.2%
Use Load Management Software	19	9.3%	28	13.7%
Participate in NYSERDA Program	53	25.9%	53	25.9%
Participate in NYISO load management program	17	8.3%	25	12.2%
Switch to an electricity supplier other than your local utility	45	22.0%	26	12.7%
Install on-site or distributed generation	10	4.9%	18	8.8%
None	43	21.0%	29	14.2%