
Proceeding on Motion of the Commission to Consider Demand Response Initiatives.

CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.
PLAN FOR PROVIDING COMMERCIAL DEMAND RESPONSE DATA ACCESS IN A MANNER THAT SUPPORTS MARKET REQUIREMENTS AND CUSTOMER NEEDS

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1. INTRODUCTION

In its Order issued on April 8, 2009, in Cases 08-E-1463 and 08-E-0176, the Public Service Commission (the “Commission”) approved changes to the Consolidated Edison Company of New York, Inc.’s Rider U, Distribution Load Relief Program (“DLRP”) (the “April 2009 Order”). It also directed Consolidated Edison Company of New York, Inc. (“Con Edison” or the “Company”) to submit a plan for providing meter data access in a manner that supports market requirements and participant needs related to the DLRP. The Company submitted the requested plan on July 7, 2009.

On January 20, 2011, in Cases 09-E-0115, 10-E-0530 and 08-E-1463, the Commission directed the Company to file, within 60 days of the issuance of the Order, a revised meter data access plan for Commission approval that includes updated costs and an expanded scope to include Rider S and Rider T participants.

The Company’s updated plan for providing meter data access to customers participating in the Company’s commercial demand response programs is set out below.

1.1 PROGRAM BACKGROUND

Since 2003, the Company has offered a Distribution Load Relief Program (“DLRP”) under Rider U of its electric rate schedule, Schedule for Electricity Service, P.S.C. No. 9 – Electricity. The program was approved in Case 00-E-2054 by Order Approving Tariff Amendments dated April 23, 2003 (the “April 2003 Order”). Under this program, the Company offers customers financial incentives to reduce load during network/load area emergencies and scheduled tests.

DLRP may be called by Con Edison to reduce strain on local distribution lines in specific networks/load areas when contingencies occur. The program provides customers with two enrollment options: a Voluntary option which rewards participants with “energy” (kWh) payments for voluntarily providing load relief (energy or kW) when signaled by the Company (“Voluntary” Program) and a Mandatory option which provides participants with monthly “Summer Reservation” payments during the NYISO’s Summer Capability period for agreeing to provide load relief (kW) when required (“Mandatory” Program). Mandatory participants also receive energy payments for kWh reductions during tests or events. Voluntary participants are not subject to testing. The program requires a participant in the Mandatory program to respond a maximum of six times during the summer period, any calls after those six are voluntary and a

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1 The NYISO’s Summer Capability period is May through October; it is sometimes referred to as the “summer period.”
participant who responds receives an incremental Summer Reservation payment. Customers may enroll directly with the Company or through an aggregator.2

In the April 2009 Order, the Commission made significant changes to the DLRP. The two most significant changes involved the required use of billing interval meters (“BIMs”) and the change of measurement methodology (baseline) used in DLRP. First, the Commission required that all customers use BIMs to participate in DLRP.3 The Commission agreed with the Company’s assertion that BIMs will aid in the timely collection, measurement and verification of data, which is essential to the emergency nature of this program. Second, the Commission required the use of the Customer Baseline Load (“CBL”) methodology to measure participant performance.4 The Commission agreed with the Company that the CBL methodology provides a more accurate measurement of load reductions during an emergency based program, such as Rider U, in which load reductions may be called at any hour, 24 hours a day, seven days a week during the summer period.

In the January 2011 Order, the Commission noted that since the original plan providing meter data access was filed in July 2009 the Company has implemented changes to its meter data information system in support of its Mandatory Hourly Pricing (“MHP”) program customers, which in many instances are also participants in the Rider U program. In addition, the Company has instituted the new peak-shaving programs under Rider S, the Commercial System Relief Program (“CSRP”), and Rider T, the Critical Peak Rebate Program (“CPRP”). The Commission determined that similar access to meter data should be provided to Rider S and Rider T participants and that the cost estimates provided in the data access plan be updated.

2. METER DATA

2.1 CON EDISON INTERVAL METERING

BIMs are interval meters that the Company uses for billing purposes. These BIMs are programmed to store measured energy usage in fifteen minute intervals. Interval measurements are necessary to assess demand response participant performance, as demand response programs require participants to reduce demand in a measurable and verifiable way. Each hour a participant’s electrical demand is calculated by summing energy readings from the four consecutive fifteen minute intervals. For the purposes of the Company’s commercial demand response programs,5 hourly demand (kW) values are used to determine if the participant has reduced load to its enrolled level during events and tests.

2 “Aggregators” are energy service providers who aggregate participating customers into a portfolio.
3 The Commission required that the BIM requirement be waived for participants that participated in DLRP in 2008, do not have BIMs in 2009, and do not have on site generation.
4 The Commission required that the CBL performance evaluation requirement for participation in the Mandatory Program be waived for all 2008 participants who continue to participate without a Con Edison BIM.
5 This is also the case for the New York Independent System Operator’s Special Case Resource (ICAP) and Emergency Demand Response (EDRP) programs.
In cases where a single customer has more than one meter for its facility, multiple BIM’s may be used to assess performance. As an alternative, Interval Data Recorders (“IDRs”) may be suitable to sum and store the energy usage values of several standard kWh meters equipped with pulse outputs. Pulse output is provided by an electronic switch inside the meter that provides contact closures in real time that are proportional to energy use. These contact closures can be converted to customer energy (kWh) and demand (kW) values. Pulse output can be provided at the customer’s expense.

2.2 METER DATA INFORMATION SYSTEM

The Company began replacing several components of its meter information system in 2010. For the purposes of this filing, the components that are present in 2011 and that contribute to increased participant data access are described. Figure 1 depicts the path that meter data traverses from a customer BIM or IDR to Con Edison systems where the data is stored and can be accessed by the customer.

Con Edison BIMs and IDRs are installed with either a hard (“land”) telephone line or wireless service for data transmittance. Meter data is transmitted through land lines or wireless service and associated modems to the Company’s MV-90 system. MV-90 is a software application that schedules and performs interval data retrieval from the BIMs or IDRs. Currently most BIMs and IDRs are scheduled to be called once a day.

The Itron Enterprise Edison (“IEE”) Meter Data Management (“MDM”) system is a software application that the Company began utilizing in 2010 to collect and store meter data. The MDM system stores the meter data as it is delivered from MV-90 on a daily basis. BIM customers are provided a customer web interface, called IEE Customer Care (“CC”), that allows them to retrieve and view interval data stored in the MDM, typically on a one day lag.

Figure 1: Meter Information System (2011)
3. PLAN FOR PROVIDING METER DATA ACCESS

3.1 DEMAND RESPONSE MARKET REQUIREMENTS AND CUSTOMER NEEDS

During the 2010 Summer Capability period the Company’s commercial demand response programs had approximately 230 MW of enrolled load reduction through over 600 customers. Approximately 80% of this enrolled load reduction was supplied through aggregators.

Individual participants and aggregators are currently not able to directly view meter demand data during demand response events since meter data from most BIMs is only retrieved once a day and made available on a one day lag. The Company sees provision of as near to real-time data as possible as the optimum eventual outcome and this continues to be a goal for the broader population of larger customers. The Company is sensitive to the cost and performance of the systems currently available and continues to pursue prudent outcomes in this regard. Fortunately, it is generally the case that the majority of modern building management systems enable customers to have effective real-time insight into the performance of their equipment during a demand response event.

The Company’s commercial demand response programs require participating customers to reduce demand during network/load area emergencies and peak shaving events for a minimum of five hours as well as during program tests typically held for one hour. In connection with DLRP Tests and Emergency Events, DLRP participants are provided a two hour notice before their demand reduction performance is assessed. In connection with CSRP and CPRP Tests and Peak Shaving Events, CSRP and CPRP participants are provided a twenty-one hour notice and a two hour notice before their demand reduction performance is assessed. Participant performance is evaluated on an hourly basis by comparing the participant’s baseline demand to its demand during each hour of the event or test. However, as customers generally commence response during the two hour notice period, there is some benefit to securing demand data during the two hour notification window as well as during the hours of an event.

Demand data provided to participants during demand response events must be provided in a manner that is consistent with the nature of the demand response programs. The Company’s commercial demand response programs assess aggregator performance on a network/load area basis. As such, systems that allow aggregators to aggregate their participants’ loads within individual networks/load areas will further assist in program evaluation and performance.

Pulse output from the Company’s meters is currently used by some aggregators and some customers that participate in commercial demand response programs. The pulse output is converted to customer demand. These demand measurements are typically assessed in time intervals ranging from one to, more often, five minute intervals. In addition to assessing demand response performance, these demand measurements are used in conjunction with customized software to model facility load profiles, calculate energy costs and assess performance of energy efficiency measures.
Although this level of granularity in demand data may be desired for some applications, it has not been requested by all participants in the Company’s commercial demand response programs. Therefore, the Company is proposing to make fifteen minute data available to all commercial demand response programs participants during notification periods and demand response events. Those that require or desire more granular data, including for applications other than demand response, may continue to utilize the currently available pulse outputs from the meters and utilize their specific applications, software, and infrastructure to process and convert pulse output data. The Company will continue to provide pulse output to customers who request it, with the customer in question paying the associated costs. However, the Company should not be required to pay for pulse output data reporting systems upon customer request, as it is not equitable for other customers to subsidize these costs.

It should be noted that in many instances BIMs will be installed through the “MHP program. During 2010 customers in the Con Edison service territory with peak demands over 500 kW had a BIM installed at their premises in accordance with the MHP program.6

Although this solution is sized to cater to the customers participating in the Company’s commercial demand response programs, it is important to note that it is an expensive solution for a limited set of customers. There are over 2,500 customers who have billing interval meters at their facilities. Implementing a solution that provides more frequent meter data for only a subset of this population may not be the most financially prudent. It may be more prudent to investigate a solution for the entire population of Con Edison interval meters. Nevertheless, this solution is put forward to provide this data to commercial demand response customers.

3.2 METER DATA DURING DEMAND RESPONSE EVENTS

While the Company believes there is a benefit to waiting until broader deployment of these technologies is prudent, in response to the Commission’s request the Company proposes to provide billing interval meter data at a more frequent basis both two hours before the scheduled time of commercial demand response tests and events and during the test and events. This billing interval meter data will allow participants to assess their demand levels and make decisions that may positively affect their program performance. The Company proposes to expand and modify the MV-90 application to allow data to be retrieved from participating BIMs and IDR s every 15 minutes during demand response notifications, tests and events. Con Edison BIMs capture customer load data in 15 minute intervals. The following figure, Figure 2, depicts the path that meter data flows from the participating demand response BIM or IDR during a demand response test or event.

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6 The Commission has approved the Company’s proposal to expand the MHP tariff to include all customers above 500 kW in Case 07-E-0523, Order Establishing Rates for Electric Service, issued and effective March 25, 2008.
Con Edison will manage the demand response events and schedule demand response tests and events utilizing the new IEE Curtailment Manager ("CM") application. The CM application provides Con Edison the capability to define curtailment events, calculate customer baseline loads, provide results for settlement and provide customers an optional web based interface with access to interval load data during demand response events. The interface is similar to the CC application, illustrated in Figure 1, except that the CM application presents data specific to demand response programs. CM will be configured with the participating demand response participants and their associated networks/load areas. Figure 3 shows a sample of the screen that a person managing the demand response event would use to set the parameters of a demand response event in the CM application.
Two hours prior to the start of an event scheduled in CM, the application will signal MV-90 to retrieve interval data every 15 minutes from the participating meters in the demand response event. During this two hour period and during the event, the demand response participant will have the ability to log into CM and view 15 minute load data associated with its meter. Figure 4 shows a sample of screenshots that a demand response participant will be able to view using CM. It shows the meters associated with the customer along with the committed load reduction, the current load, the target load and additional information. In addition, participating aggregators will have the ability to view 15 minute load data associated with the customers in their portfolio that are participating in the test or event. These aggregators will also have the ability to aggregate their load data by network/load area or in a segmented way consistent with the nature of their requirements. A sample of this type of data is shown in Figure 5.
Figure 4: Curtailment Manager – Event Detail

Figure 5: Curtailment Manager - Monitoring Report
4. STEPS TO IMPLEMENT PLAN

In order to provide demand response participants 15 minute interval data as proposed, several changes will need to be made to the meter data information system. The tasks of this updated plan reflect the following changes in Con Edison’s systems and in the scope of the Commission’s request.

First, in connection with implementing MHP for a larger group of customers, Con Edison is in the process of replacing its Load Profile Data System (“LPDS”) with an MDM system for Con Edison accounts in the MHP program. This implementation, including integration with Con Edison’s MV-90 system, will be complete in 2011. This development for the MHP initiative provides a foundation for the proposed plan to provide more immediate access to interval meter data for demand response participants.

A second change is that Con Edison is migrating the systems supporting settlement of demand-response events from the Enterprise Energy Management (“EEM”) Suite software hosted by Itron to the new CM which is integrated with Con Edison’s new MDM system. This migration project includes the development, within CM, of the capability to calculate customer baselines using the NYISO methodology. This migration is scheduled to be completed by May of 2011 but the project does not include providing customer access to interval data during demand response events.

A third change results from the revision by the Commission of the plan scope. The original scope of the plan to provide access interval data during demand response events is being expanded, from including only DLRP participants under Rider U, to also include participants in the new peak-shaving programs under Rider S and Rider T. Participation in the Mandatory and Voluntary DLRP programs was approximately 700 accounts in 2010. The majority of participants in the programs under Rider S and Rider T will be customers who are also participating in the DLRP. To accommodate the expected growth in DLRP participation and the Rider S and Rider T participants which are not participating in the DLRP program, the updated plan is designed to provide interval data during events for up to 1,000 customers.7

To provide interval data, within 15 minutes of the end of each interval, to a maximum of 1,000 demand response participants during notifications and events, Con Edison will have to accomplish the following three major tasks:

Task 1: Expand existing MV-90 communications capacity to provide the bandwidth to interrogate the BIMs of demand response participants every 15 minutes

Task 2: Configure CM to provide interval consumption data and baseline information to customers during demand-response events

Task 3: Resolve synchronization, optimization and communication issues of the integrated systems

7 The Company is proposing to create the 15 minute data access system with a 1,000 BIM capability. The system proposed has scaling capability.
The specific steps that need to be executed for each task are discussed in the following sections:

**Task 1: Expand existing MV-90 communications capacity to provide the bandwidth to interrogate participant BIMs**

The existing MV-90 system is designed to collect interval data from the majority of Con Edison’s BIMs once each day. The incremental ability to communicate with approximately 1,000 participant BIMs within each 15-minute window will require the expansion of the communications capacity of the MV-90 system. Based upon tests performed on the existing MV-90 system, it is expected that MV-90 will require the capacity of approximately 131 additional telephone lines, and approximately 16 additional TCP/IP gates. The specific steps for this task are:

- Perform a Technical System Review of the existing Con Edison MV-90 system;
- Acquire, install and configure five new MV-90 communication servers to add to the MV-90 system;
- Acquire, install and configure ten new Digi port servers (2 Digi port servers per communication server) or similar hardware that allows the MV-90 servers to connect to multiple modems using a rack mount device;
- Acquire, install and configure 131 modems and associate racks, power supplies and other required hardware;
- Lease and install 131 new telephone lines connecting to the new modems of the MV-90 system;
- Configure an additional 16 TCP/IP gates connecting to MV-90; and
- Install MV-90 software on the new communication servers and test MV-90 with the new telephone lines and TCP/IP gates.

**Task 2: Configure CM to provide interval consumption data and baseline information to customers during demand response events**

Demand response participants will view and access their interval data during demand response events using the web-based CM. All demand-response users of the system and aggregators will need to be configured in the CM application to have access to the reports presenting the interval consumption and CBL baseline information during events. The steps for this task include:

- Configure CM to generate CBL baseline results for demand-response customers prior to the start of the event;
- Integrate CM with the existing Con Edison MV-90 system
- Configure demand response accounts and aggregators as users in CM with permissions for viewing and accessing interval consumption and baseline data during demand-response events;
- Provide training on the integrated CM and MV-90 capabilities to demand response staff at Con Edison;
- Provide training on accessing interval data during demand-response events to individual participants and aggregators; and
• Confirm and, if necessary, secure sufficient CM and CC licenses for demand response accounts as enrollments in demand-response programs increase.

**Task 3: Resolve synchronization, optimization and communication issues of the integrated systems**

After completion of the preceding tasks, specific steps will be required to reliably coordinate the MV-90, MDM and CM systems during demand response events. These steps include:

• Refine MV-90 settings for initialization and remote interrogation to optimize performance of MV-90 for demand response participants where the meter will be contacted in 15-minute intervals;
• Survey variance in meter time clocks and the system time clock for all demand response participants; if variance is too large, modify meter time clock to match the system time clock, using MV-90 capability to monitor these variances on an on-going basis and implement a process for periodic review and corrective action in the future;
• Coordinate and test the timing of MV-90 meter interrogation to ensure timely meter readings; and
• Periodically review performance of meter interrogations and identify meters with recurring, significant errors reported in MV-90 log; investigate source of errors and resolve where possible.

**5. PLAN COSTS AND TIMELINE**

Through the first year of operation of this project, the total project cost will be the sum of the one-time implementation costs and annual maintenance and support costs of the plan. In subsequent years, the cost will be reduced to the annual maintenance and support costs.

The Company seeks approval for a total of $561,000 for the plan implementation and one year of the ongoing costs associated with this system. Approximately $413,000 of the $561,000 is associated with implementation costs to expand, upgrade and configure the meter data systems. The remaining $148,000 is associated with the annual recurring costs for the telephone service, support and maintenance of the system.

The timeline for implementation of the proposed project will commence upon Commission approval. The time frame of each of the three project tasks and their associated costs are described in Figure 6 below.
The Company proposes recovery of the initial and recurring costs associated with this plan through the Monthly Adjustment Clause (“MAC”) and the NYPA delivery rate classes (those customers served under the Schedule for NYPA Delivery Service – PASNY No. 4 (PASNY) and the Schedule for Economic Development Delivery Service – EDDS No. 2 (EDDS)) as are other costs associated with the Company’s commercial demand response programs.