NYISO 2021 Annual Report on Demand Response Programs

I. Program Descriptions

The New York Independent System Operator, Inc. ("NYISO") administers four demand response programs to enhance system reliability and reduce overall production costs.

Two of the programs—the Emergency Demand Response Program ("EDRP")[1] and the Installed Capacity – Special Case Resource ("ICAP/SCR") program—support the reliability of the New York Control Area. Both programs are designed to reduce power consumption by directing demand response resources to reduce load or to use qualified Local Generators to remove load from the system during grid emergencies or when reserve shortages are anticipated or actually occur. All New York Control Area ("NYCA") Loads are eligible to take part in these programs. Aggregators enroll Demand Side Resources and coordinate with the NYISO to notify resources when the NYISO deploys demand response.

The NYISO also offers two economic demand response programs: the Day-Ahead Demand Response Program ("DADRP") in the Energy market, and the Demand-Side Ancillary Services Program ("DSASP") in the Ancillary Services market. The DADRP allows NYCA Loads to offer their load reductions into the Day-Ahead Market ("DAM") to supply Energy. This program allows flexible loads to effectively increase the amount of supply in the market and moderate Energy prices. The DSASP provides program participants with an opportunity to offer their load curtailment capability into the DAM and/or Real-Time Market ("RTM") to provide Operating Reserves and Regulation Service.

Each of the four programs is described in greater detail below.

Emergency Demand Response Program

The EDRP offers Demand Side Resources the opportunity to earn the greater of $500/MWh or the prevailing Locational-Based Marginal Price ("LBMP") for curtailing energy consumption when called upon to reduce Load by the NYISO. EDRP resources are enrolled by Curtailment Service Providers ("CSPs"), which serve as the interface between the NYISO and resource.[2] Load curtailment by EDRP resources during NYISO-called events is voluntary.

[1] Capitalized terms not defined herein have the meaning ascribed to them in the NYISO's Market Administration and Control Area Services Tariff ("Services Tariff").

[2] An individual EDRP resource may, if it meets the applicable registration requirements, act as its own CSP.

Installed Capacity – Special Case Resource Program

Special Case Resources ("SCRs") are a type of Demand Side Resource that may offer Unforced Capacity ("UCAP") into the NYISO's ICAP market as ICAP Suppliers. SCRs are enrolled by Responsible Interface Parties ("RIPs") which may aggregate multiple SCRs and which serve as the interface between the NYISO and the resources.[3] Resources may be enrolled in either the EDRP or the ICAP/SCR program, but not both. SCRs that have sold ICAP are obligated to reduce their load when called upon by the NYISO with two or more hours in-day notice, and with day-ahead notice from the NYISO.

In addition to receiving a capacity payment for the SCRs they enroll, RIPs are eligible to receive Energy payments during an event or test, based on hourly market prices, plus a Bid Production Cost Guarantee ("BPCG") payment to make up for any difference between the market price received and their block offer price across the day. Energy payments are calculated using the same performance calculation used by the NYISO to pay for the performance of EDRP resources.

Enrolled SCRs must verify their enrolled load reduction capability in each Capability Period through actual performance in an event or test. Failure of an SCR to reduce load during an event or test may result in penalties being assessed to the applicable RIP in accordance with the NYISO's Services Tariff and the ICAP/SCR program rules and procedures.

Targeted Demand Response Program

The Targeted Demand Response Program ("TDRP"), introduced in July 2007, is a reliability-based demand response program that deploys existing wholesale market EDRP resources and SCRs on a voluntary basis in targeted sub-zonal load pockets to solve local reliability problems at the request of a Transmission Owner. The TDRP program is currently available only in Load Zone J (New York City). RIPs are eligible to receive Energy payments during an event or test based on hourly market prices plus a BPCG payment. Energy payments are calculated using the same performance calculation used by the NYISO to pay for the performance of EDRP resources.

Day-Ahead Demand Response Program

The DADRP allows Demand Side Resources to offer load curtailment into the DAM as an Energy supply resource. Resources participating in the DADRP submit offers by 5:00 a.m. specifying the hours and amount of load curtailment for the following day, and the price at which

[3] An individual SCR may, if it meets the applicable registration requirements, act as its own RIP.

they are willing to curtail. DADRP Resource offers are subject to the Monthly Net Benefit Offer Floor.[4]

DADRP offers are structured like those of generation resources: they specify minimum run times and the hours in which they are available. Demand Side Resources with Load reductions scheduled in the DAM are obligated to curtail the next day. DADRP resources are also eligible for BPCG payments. Failure of a DADRP resource to curtail its Load may result in penalties being assessed to the applicable resource in accordance with the NYISO's Services Tariff and the DADRP program rules and procedures.

Demand-Side Ancillary Services Program

The DSASP provides Demand Side Resources (that meet telemetry and other qualification requirements) an opportunity to offer their load curtailment capability into the DAM and/or RTM to provide Operating Reserves and Regulation Service. Resources must qualify through standard resource testing requirements in order to provide these services. Offers are submitted through the same process as generation resources: resources participating in the DAM submit offers by 5:00 a.m. specifying the Ancillary Service they are offering (Operating Reserves, and/or Regulation Service) along with the hours and amount of load curtailment for the following day, and the price at which they are willing to curtail. DSASP resources are not eligible to be scheduled to provide Energy in the DAM. DSASP resources may also submit RTM offers up to 75 minutes before the hour of the offer.

The dispatch of the DSASP resources' Operating Reserves to Energy is determined in the RTM by the Real-Time Dispatch ("RTD") software. When RTD instructs a DSASP resource to provide Energy, the DSASP resource must decrease the Load being served by the NYISO. The dispatch of Regulation Service into Energy is issued in the RTM via an Automatic Generation Control ("AGC") signal. Depending on system needs, the AGC may instruct DSASP resources to either increase or decrease the NYISO-scheduled Energy they are consuming.

DSASP resources that are converted to Energy in real-time are not paid for that Energy. Instead, DSASP resources are eligible to receive a Day-Ahead Margin Assurance Payment ("DAMAP") to make up for any balancing differences between their Day-Ahead Operating Reserves or Regulation Service schedule and their real-time dispatch. Eligibility to receive DAMAP is subject to performance requirements. Performance indices are calculated on an interval basis for both Operating Reserves and Regulation Service. DAMAPs are adjusted by the performance index for the services provided.

[4] The Monthly Net Benefit Offer Floor prices are available at: https://www.nyiso.com/demand-response.

II. 2021 Program Summary

EDRP and ICAP/SCR Program

As of July 31, 2021, a total of 26 CSPs and RIPs had eligible resources enrolled in the NYISO's EDRP and ICAP/SCR program.[5] Participating CSPs and RIPs include:[6]

- 1 Transmission Owner ("TO");
- 12 Competitive Load Serving Entities ("LSEs") that are not TOs; and
- 13 Aggregators that are not a LSE or TO.

These figures represent a net increase of one CSP/RIP from 2020. This was a result of an increase of one Aggregator.

As of July 31, 2021, a total of 3,184 end-use locations were enrolled in the NYISO's EDRP and ICAP/SCR programs. These locations were capable of providing a total of 1,169.8 MW of demand response. This corresponded to a 2.4% decrease in the enrolled MW versus 2020, and represents 3.86% of the 2021 Summer Capability Period peak demand of 30,309 MW. Of the 3,184 end-use locations, 262 participated in the EDRP program, 26 were ICAP/SCR resources with unsold capacity,[7] and the remaining 2,896 end-use locations participated in the NYISO's ICAP/SCR program. The ICAP/SCR program represents 91.0% of the total resources enrolled in the NYISO's reliability-based demand response programs and 99.5% of the total MW enrolled in those programs.

[5] For several years, the date customarily used for reporting the NYISO's demand response program participation statistics was August 31. In 2011, the NYISO changed its reporting date from August 31 to July 31 to better align with several other reliability and planning reporting requirements. A July 31 reporting date also provides better transparency with other reporting requirements for the NYISO's demand response programs. The NYISO has evaluated the difference in enrollment between July and August and found it to be *de minimis* (2-3%). The data provided herein is based on a snapshot of the programs on July 31, 2021.

[6] In previous reports, the NYISO identified four categories of curtailment service providers. In addition to the three categories described in this report, the NYISO identified an additional organizational category called "Direct Customer" for entities that registered as a Market Participant with the NYISO to participate on their own behalf in any of the NYISO's demand response programs. The NYISO is able to distinguish between the categories of curtailment service provider based on provider name and certain data provided by the Market Participant. The NYISO does not require Market Participants to identify the category of provider in which they fit. Over time, it became increasingly difficult to identify Direct Customers based on the information provided to the NYISO and to provide an accurate accounting of such providers. To maintain better consistency of reporting and accuracy, the NYISO has removed the "Direct Customer" organizational category, and merged those providers into the Aggregator or Competitive LSE category as appropriate.

[7] ICAP/SCR Resources with unsold capacity are those resources that did not sell their full available capacity.

Aggregators and competitive LSEs currently represent 96.2% of enrolled MW in EDRP and ICAP/SCR, down from 96.4% of enrolled MW in 2020. The remaining 3.8% are enrolled by TOs. In the ICAP/SCR program, two participants enrolled through their TO, while all other ICAP/SCR resources were enrolled through other sources.

The TDRP, which deploys EDRP and ICAP/SCR resources in the various sub-zonal load pockets in Zone J for local reliability, includes 93.89% of the total New York Control Area ("NYCA") EDRP end-use locations and 96.5% of total NYCA EDRP MW. The TDRP also includes 61.7% of total NYCA ICAP/SCR end-use locations, representing 35.2% of the total NYCA ICAP/SCR MW.

Day-Ahead Demand Response Program

DADRP enrollment has been static for several years and enrolled resources have not submitted demand reduction offers for more than seven years. DADRP enrollment remained unchanged since the January 2021 Report.

Demand-Side Ancillary Services Program

There are five Demand Side Resources actively participating in the DSASP as providers of Operating Reserves. These resources represent 175.7 MW of capability and had an average performance of 205.4% during the analysis period of May 2021 through October 2021.

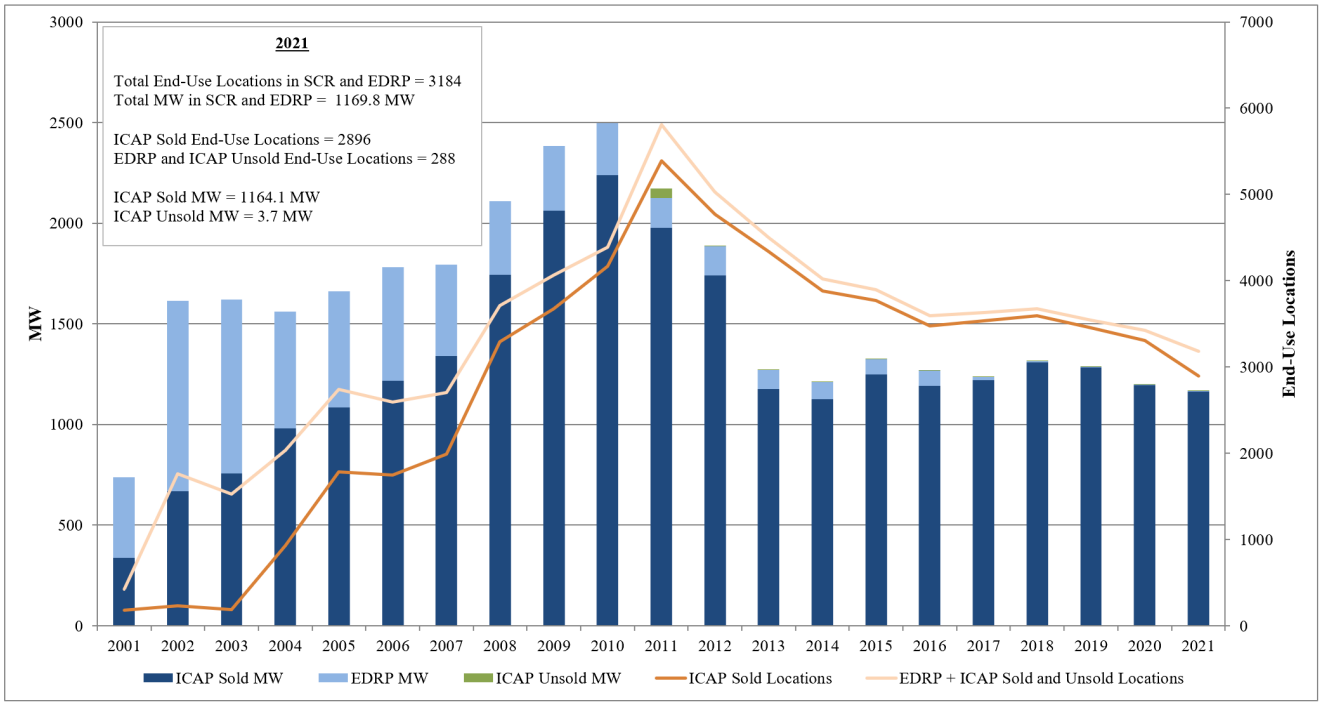
III. Reliability Program Participation Detail

Historical Enrollment Data

Historical enrollment data for the NYISO's reliability demand response programs is presented in Figure 1. The figure plots the enrollment in the NYISO's reliability-based programs from inception through July 2021. The stacked bar charts plot enrolled MW by program and year, and the lines plot the number of end-use locations by program and year.

From May 2001 through July 2021, combined enrollment in EDRP and ICAP/SCR has grown from approximately 200 MW to 1169.8 MW. The total number of end-use locations has increased from approximately 200 in March 2001 to 3,184 in July 2021.

Figure 1: Historical Enrollment of
End-Use Locations and MW in NYISO Reliability Programs



Changes in Program Enrollment – 2020-2021

Enrollment data for the NYISO's reliability-based demand response programs for 2020 - 2021 is provided in Table 1. The number of ICAP/SCR end-use locations and the enrolled MW have decreased since the 2020 report. The number of EDRP end-use locations and the enrolled MW have increased over the past year.

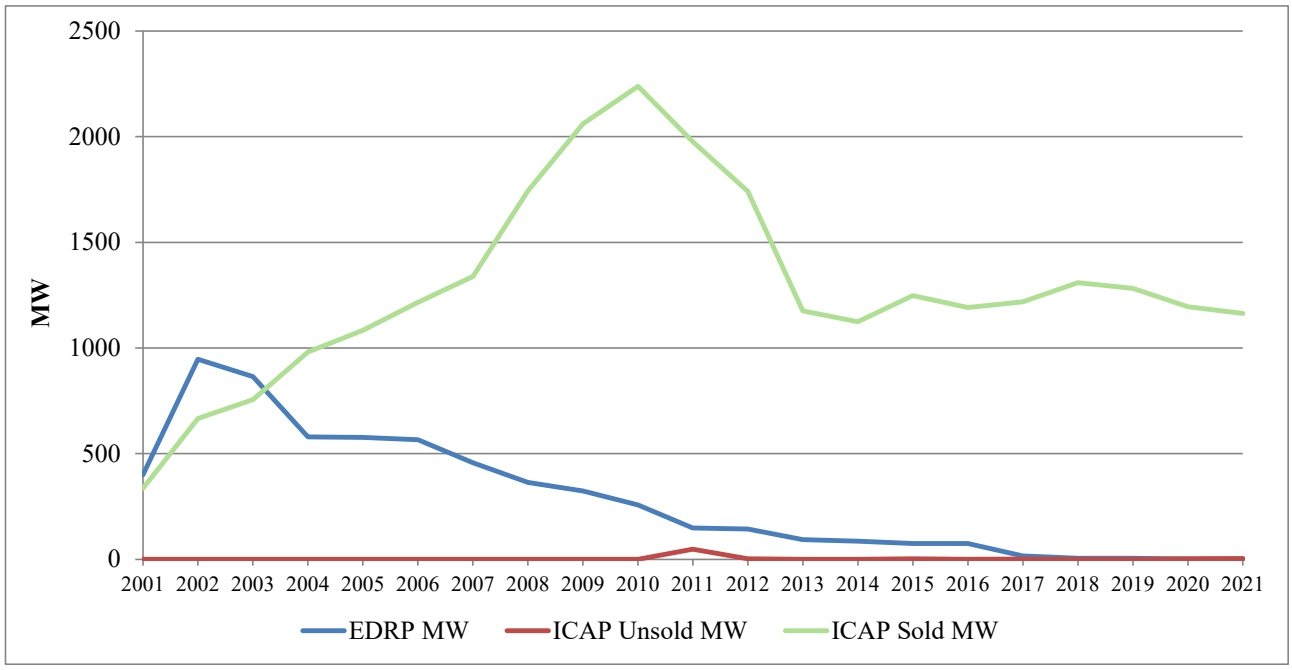
Table 1: Program Enrollment by End-Use Location – 2020-2021

	2021		2020			Percent Change From 2020 to 2021		MW per End-use Location		
	Count	MW	Count	MW	MW Change	End-Use Location Count	Enrolled MW	2021	2020	Percent Change
EDRP	262	2.0	105	1.4	0.6	150%	46%	0.0	0.01	-41.5%
ICAP Unsold	26	3.7	13	2.7	1.0	100%	38%	0.14	0.21	-30.9%
ICAP Sold	2896	1164.1	3308	1195.0	-30.9	-12%	-3%	0.40	0.36	11.3%

Figures 2 and 3 present enrollment statistics in the EDRP and ICAP/SCR program from 2001 – 2021. Figure 2 presents the data by MW enrolled, while Figure 3 presents the data by

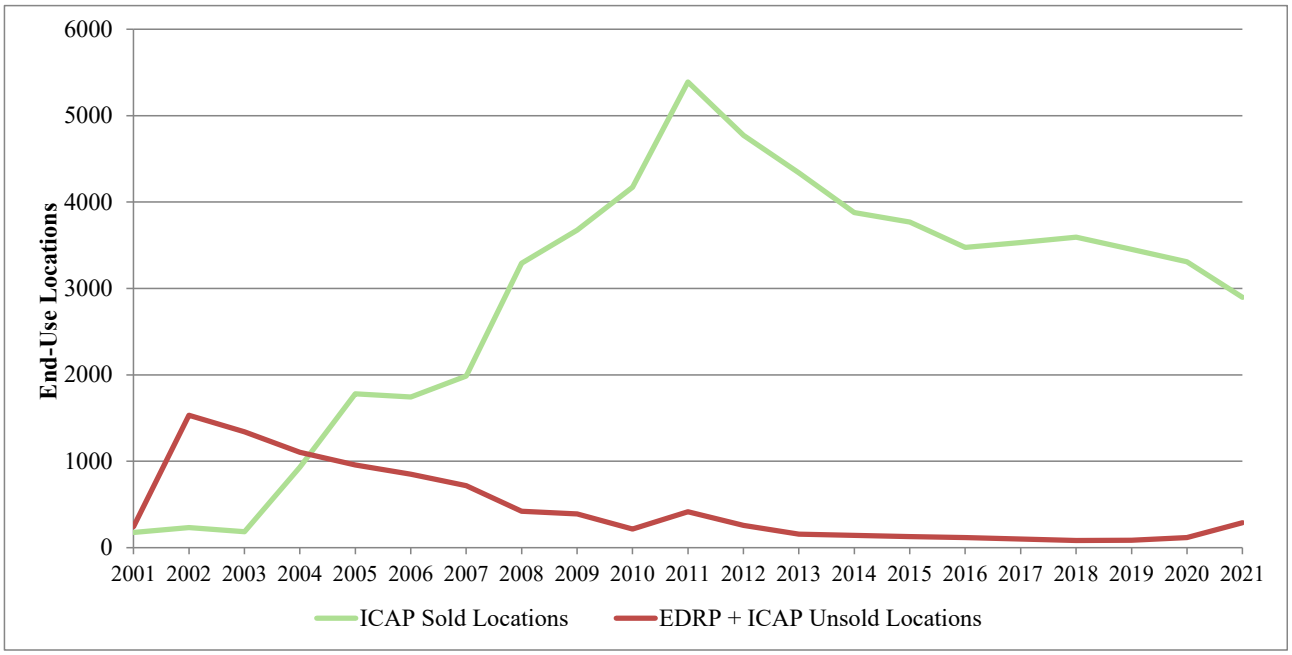
number of end-use locations.[8] Since making the EDRP and ICAP/SCR program mutually exclusive, there has been a general decline in the number of enrolled MW and resources in the EDRP.

Figure 2: Enrollment in the NYISO's EDRP and ICAP/SCR Program by MW, 2001-2021



[8] ICAP/SCR program enrollment of individual end-use locations began in 2004. In 2001 and 2002 end-use locations could enroll in both the EDRP and ICAP/SCR program, but beginning in 2003, resources were prohibited from simultaneously enrolling in both programs.

Figure 3: Enrollment in the NYISO's EDRP and ICAP/SCR Program by End-Use Location, 2001-2021



2020-2021 EDRP and ICAP/SCR Program Enrollments

At the end of July 2021, 3,184 end-use locations, with a total of 1,169.8 MW of demand response capability, were enrolled in NYISO's EDRP and ICAP/SCR program. This represents a 2.4% decrease from the total enrolled demand response capability in 2020. Of the 3,184 end-use locations, 262 were enrolled in the EDRP and 2,922 were enrolled in the ICAP/SCR program, including SCRs treated as EDRP. ICAP/SCR resources represent 91.0% of the total reliability program end-use locations and 99.5% of the total reliability program MW. Table 2, below, provides summary data for the EDRP and ICAP/SCR program.

Table 2: 2021 Program Enrollment Summary by CSP and RIP Type

		EDRP			ICAP Unsold			ICAP Sold		
No. of Unique MPs	Agent Type	No. of CSPs	No. of End-Use Locations	MW	No. of RIPs	No. of End-Use Locations	MW	No. of RIPs	No. of End-Use Locations	MW
13	Aggregator	0	0	0.0	*	*	3.53	12	2778	1082.8
0	Direct Customer	0	0	0.0	0	0	0.00	0	0	0.0
12	Competitive Load Serving Entity	*	262	2.0	*	*	0.20	*	*	37.4
1	Transmission Owner/LSE	0	0	0.0	0	0	0.00	*	*	43.9
26	Total	*	262	2.0	4	26	3.73	24	2896	1164.1

*Entries in this category have been masked for confidentiality in this table.

2021 SCR enrollments were primarily provided through non-TOs representing 99.9% of participating end-use locations and 96.2% of the enrolled MW. Similarly, for 2021 EDRP enrollments and ICAP/SCR resources with unsold capacity, non-TOs represented 100% of participating end-use locations and 100% of the enrolled MW.

Table 3 provides additional program enrollment details by Load Zone. Although the NYISO does not collect specific resource class data, demand response resources in Load Zones A through E are typically industrial and retail resources, while those in Load Zones J and K include commercial office, retail, and multi-family residential resources.

Table 3: 2021 Program Enrollment by Load Zone

	EDRP		ICAP Unsold		ICAP Sold	
Zone	No. of End-Use Locations	MW	No. of End-Use Locations	MW	No. of End-Use Locations	MW
A	0	0.0	0	0.00	161	223.3
B	0	0.0	0	0.00	117	28.1
C	0	0.0	0	0.00	157	83.9
D	0	0.0	0	0.00	16	188.3
E	0	0.0	*	0.10	69	33.0
F	0	0.0	0	0.00	126	79.4
G	0	0.0	0	0.00	78	44.5
H	*	0.0	0	0.00	26	11.4
I	*	0.1	*	0.10	108	29.0
J	246	1.9	23	3.53	1763	406.5
K	0	0.0	0	0.00	275	36.8
Total	262	2.0	26	3.73	2896	1164.1

*Entries in this category have been masked for confidentiality in this table.

ICAP/SCR Resource Aggregations

NYISO identifies ICAP/SCR resource enrollments by end-use location, and they may represent either individually enrolled end-use locations or aggregations of end-use locations that are enrolled as a single demand response resource. Table 4 contains data on ICAP/SCR program participation. As of July 31, 2021, 2,870 end-use locations were enrolled in aggregations. These aggregations provided 1,004.4 MW of the 1,164.1 MW enrolled in the ICAP/SCR program. The remaining 159.7 MW of demand response capacity in the ICAP/SCR program came from 26 individually enrolled resources.

Table 4: Detail of 2021 ICAP/SCR Program Participation Level by Resource Type

	ICAP Sold		ICAP Unsold	
Resource Type	No. of End-Use Locations	MW	No. of End-Use Locations	MW
Individual Resources	26	159.7	*	0.2
Aggregated Resources	2870	1004.4	*	3.5
Total	2896	1164.1	26	3.7

*Entries in this category have been masked for confidentiality in this table.

Table 4 also provides information for ICAP/SCR resources that did not sell any capacity in the July 2021 capacity market auctions. This information is included because when an ICAP/SCR resource offers its load reduction in a NYISO auction and that load reduction is not sold (or when a resource's derated MW value is zero), the resource's enrolled capacity is automatically included in the EDRP.[9]

TDRP Enrollment

Load Zone J is currently the only Load Zone with resources participating in the TDRP. This Load Zone has been divided into sub-zonal load pockets designated by Consolidated Edison Company of New York, Inc. ("Con Edison"). Resources enrolled in the EDRP and ICAP/SCR program are assigned to one of the various sub-zonal load pockets based on their location.[10] Resources that are not assigned to a particular sub-zonal load pocket remain in the general Zone J category. Tables 5 and 6 provide EDRP and ICAP/SCR end-use locations and MW enrolled in the TDRP by sub-zonal load pocket.

Table 5: EDRP End-Use Locations Enrolled in TDRP

Zone/Subzone	J	J1	J2	J3	J4	J5	J6	J7	J8	J9	Total
MW	0.0	0.0	0.2	0.5	0.0	0.0	0.2	0.2	0.7	0.0	1.9
No. of End-Use Locations	0	*	16	49	0	*	21	35	107	0	246

*Entries in this category have been masked for confidentiality in this table.

[9] The resource will remain in the EDRP until it clears in a subsequent auction, or the resource confirms a bilateral transaction with an LSE. The EDRP enrollment totals and event response data included in this report include the offered, but unsold, MW of enrolled ICAP/SCR resources.

[10] The Load Zone J sub-load pockets are: J1 – Sherman Creek/Parkchester/E 179th; J2 – Astoria West/Queensbridge; J3 – Vernon/Greenwood; J4 – Staten Island; J5 – Astoria East/Corona/Jamaica; J6 – W 49th; J7 – East 13th/East River; J8 – Farragut/Rainey; and J9 – Shared sub-load pocket.

Table 6: ICAP/SCR End-Use Locations Enrolled in TDRP

Zone/Subzone	J	J1	J2	J3	J4	J5	J6	J7	J8	J9	Total
MW	0.8	27.5	31.1	62.9	25.6	34.3	62.0	63.2	102.5	0.0	410.0
No. of End-Use Locations	*	188	131	313	*	171	227	234	451	0	1786

*Entries in this category have been masked for confidentiality in this table.

Analysis of ICAP/SCR Strike Prices

Starting in 2003, resources participating in the ICAP/SCR program were required to provide a curtailment strike price – between $0 and $500/MWh – to the NYISO at the time of enrollment. Strike Prices are used by the NYISO in the calculation of Energy payments.

The NYISO has analyzed strike price curves for all resources enrolled as of July 2021 and compared the most recent strike price curves to prior years. Figures 4 and 5 below map the percentage of enrolled ICAP/SCR MW at a given strike price. Figure 4 illustrates the strike price curves for the period 2003 to 2021, the entire period in which resources were required to provide strike prices. The steep slope of the strike price curves indicate that strike prices are clustered close to the offer ceiling of $500/MWh. The data indicates that, as the program has evolved since 2003, the number of resources providing strike prices at or near $500/MWh has increased, remaining relatively consistent at approximately 93% of enrolled ICAP/SCR MW submitting a strike price at the $500/MWh limit since 2017, with greater than 92.86% of enrolled ICAP/SCR MW submitting a strike price at the $500/MWh limit in 2021; 0.31% ICAP/SCR MW submitted a strike price of $499.99/MWh, 6.75% ICAP/SCR MW submitted a strike price of $499/MWh, and the remaining 0.08% submitted a strike price below $499/MWh.

Figure 4: ICAP/SCR Curtailment Strike Price Bid Curves, 2003-2021

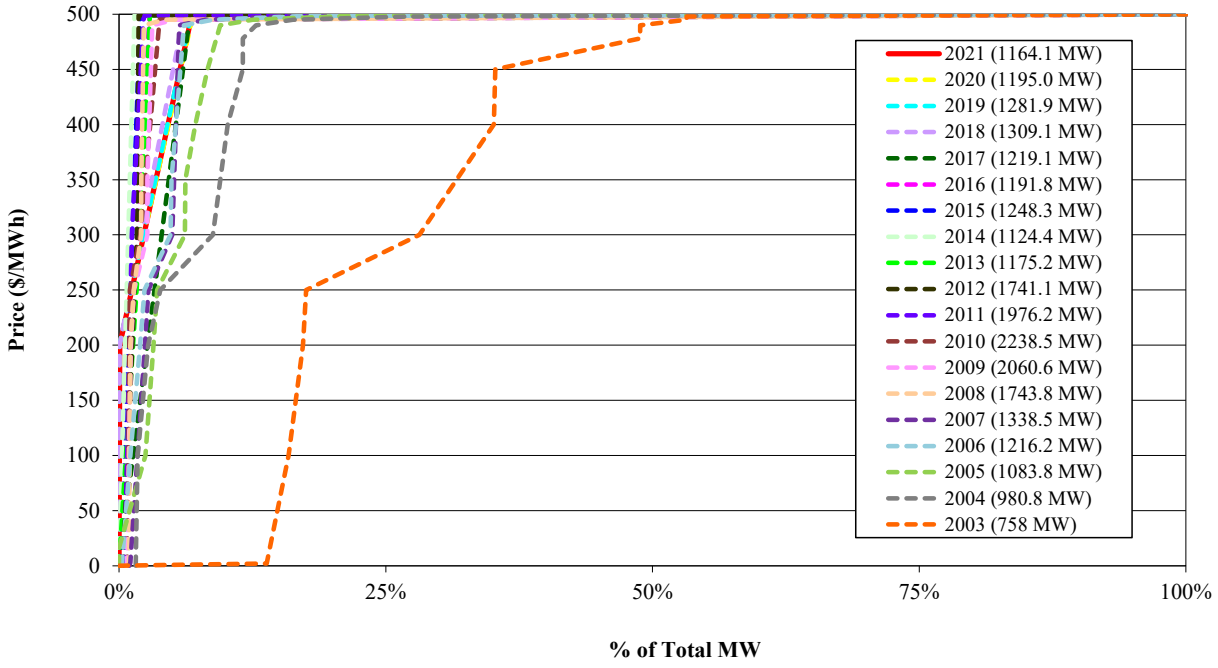
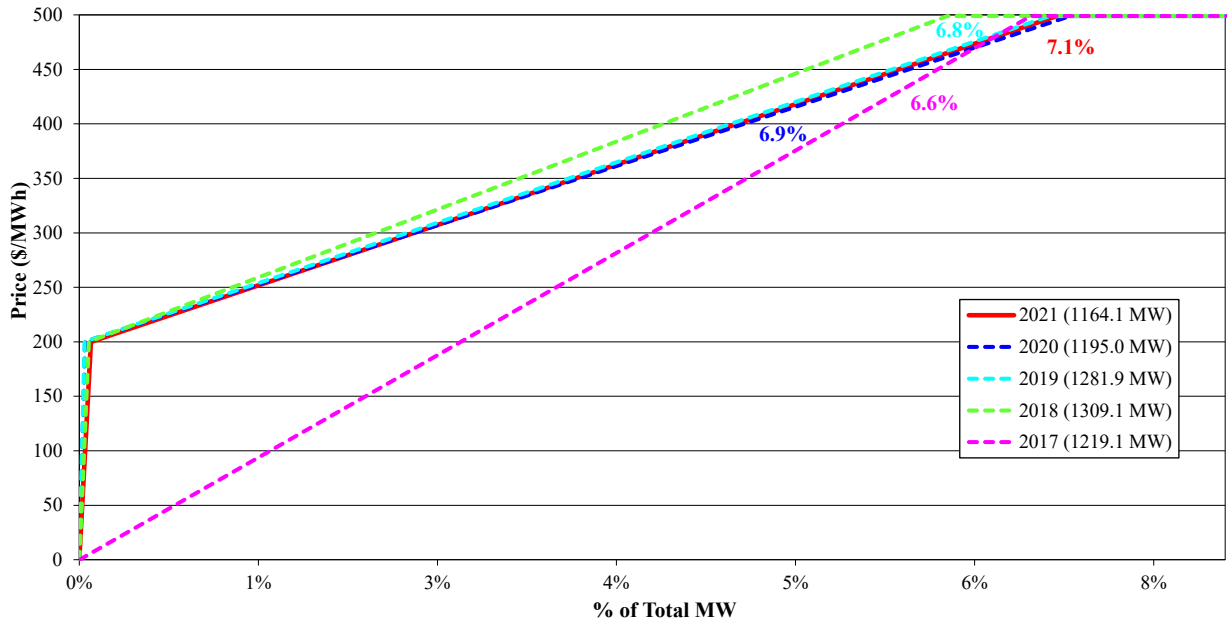


Figure 5 provides a detailed view of the strike price curves for 2017 through 2021, and shows the percentage of offers made below the $500/MWh ceiling.

Figure 5: ICAP/SCR Curtailment Strike Price Bid Curves, 2017-2021



IV. 2021 Event and Test Performance: EDRP and ICAP/SCR Program

NYISO activated the EDRP and ICAP/SCR for six events during the Summer 2021 Capability Period. NYISO did not activate the EDRP or ICAP/SCR for events during the Winter 2020-21 Capability Period. The TDRP was activated twice in response to Transmission Owner requests. The NYISO also conducted two SCR performance test in Winter 2020-2021 Capability Period and two SCR performance tests in Summer 2021 Capability Period.

Table 7 below provides the date, time, and zone for each performance test and activation conducted during the Winter 2020-2021 and Summer 2021 Capability Periods.

Table 7: ICAP/SCR SCR Performance Tests

Capability Period	Deployment Type	Program	Event/Test Start Time	Event/Test End Time	Zones
Winter 2020-21	First Performance Test	SCR	2/25/2021 16:00	2/25/2021 17:00	J, K
Winter 2020-21	First Performance Test	SCR	2/25/2021 17:00	2/25/2021 18:00	A, B
Winter 2020-21	First Performance Test	SCR	2/25/2021 18:00	2/25/2021 19:00	C, D, E, F, G, H, I
Winter 2020-21	Second Performance Test	SCR	4/1/2021 16:00	4/1/2021 17:00	J
Summer 2021	TDRP Event	SCR	6/29/2021 14:00	6/29/2021 19:00	J2
Summer 2021	TDRP Event	EDRP	6/29/2021 14:00	6/29/2021 19:00	J2
Summer 2021	TDRP Event	SCR	6/30/2021 13:00	6/30/2021 20:00	J2
Summer 2021	TDRP Event	EDRP	6/30/2021 13:00	6/30/2021 20:00	J2
Summer 2021	NYISO Event	SCR	8/11/2021 13:00	8/11/2021 19:00	K
Summer 2021	NYISO Event	EDRP	8/11/2021 13:00	8/11/2021 19:00	K
Summer 2021	NYISO Event	SCR	8/12/2021 13:00	8/12/2021 20:00	K
Summer 2021	NYISO Event	EDRP	8/12/2021 13:00	8/12/2021 20:00	K
Summer 2021	NYISO Event	SCR	8/13/2021 13:00	8/13/2021 20:00	K
Summer 2021	NYISO Event	EDRP	8/13/2021 13:00	8/13/2021 20:00	K
Summer 2021	NYISO Event	SCR	8/25/2021 13:00	8/25/2021 20:00	K
Summer 2021	NYISO Event	EDRP	8/25/2021 13:00	8/25/2021 20:00	K
Summer 2021	NYISO Event	SCR	8/26/2021 13:00	8/26/2021 20:00	K
Summer 2021	NYISO Event	EDRP	8/26/2021 13:00	8/26/2021 20:00	K
Summer 2021	NYISO Event	SCR	8/27/2021 13:00	8/27/2021 20:00	K
Summer 2021	NYISO Event	EDRP	8/27/2021 13:00	8/27/2021 20:00	K
Summer 2021	First Performance Test	SCR	9/1/2021 13:00	9/1/2021 14:00	A, B
Summer 2021	First Performance Test	SCR	9/1/2021 14:00	9/1/2021 15:00	J
Summer 2021	First Performance Test	SCR	9/1/2021 15:00	9/1/2021 16:00	C, D, E
Summer 2021	First Performance Test	SCR	9/1/2021 16:00	9/1/2021 17:00	F, G, H, I, K
Summer 2021	Second Performance Test	SCR	9/29/2021 11:00	9/29/2021 12:00	K

a. Test Performance

Each resource participating in the ICAP/SCR program is required to demonstrate its ability to meet its obligated MW once in each Capability Period. The NYISO therefore schedules a one-hour performance test in which all SCRs are called to demonstrate their ability (the "First Performance Test"). RIPs have the option to use a SCR's performance in a mandatory event as a proxy for its test value in certain circumstances; otherwise, participation in the First Performance Test is mandatory. There were two voluntary events in the Summer 2021 Capability Period, consolidated in the month of June, as well as six Zone K mandatory events, consolidated in the month of August, therefore participation in the First Performance Test was mandatory for Winter 2020-21, but not mandatory for Summer 2021 for resources in Zone K. The NYISO also schedules

a Second Performance Test for resources that change certain operational characteristics within a Capability Period (*e.g.,* a Change of Load).

Measurement of performance test response is based on the ICAP/SCR reporting rules contained in the NYISO's ICAP Manual.

For SCRs that meet their Load reduction obligation solely through curtailment or through a combination of curtailment and the use of a Local Generator, ICAP/SCR response is determined by comparing the actual hourly interval metered load with the Average Coincident Load ("ACL"):

$$ICE\_RED\_MW_{gn} = (ACL_{gm} - METER\_MW_{gn}) * (1+TLF_{gm})$$

Load reduction response for SCRs that meet their Load reduction obligation solely through the use of a Local Generator is determined by the actual hourly interval metered load:

$$ICE\_RED\_MW_{gn} = METER\_MW_{gn} * (1+TLF_{gm})$$

where:

- $ICE\_RED\_MW_{gn}$ is the Installed Capacity Equivalent of Response MW that Resource *g* supplies during hour *n* of an SCR event or test;
- ACL_{gm} is the ACL for Resource *g* applicable to month *m*, using data submitted in its Special Case Resource certification;
- $METER\_MW_{gn}$ is the metered hourly-integrated load for Resource *g* in hour *n* of an SCR event or test; and
- TLF_{gm} is the Transmission Loss Factor for Resource *g* applicable to month *m*, using data submitted in its Special Case Resource certification

The resource's Installed Capacity Equivalent response is then compared with the resource's Installed Capacity Equivalent of the maximum registered megawatt value to determine the resource's performance.

Tables 8 and 9 provide a summary of ICAP/SCR program performance test response compared to the Obligated MW for the zones deployed during the tests; Table 8 summarizes response on a NYCA-wide basis, and Table 9 summarizes response by Zone. Obligated MW is defined as the Installed Capacity Equivalent of the maximum registered MW value that each SCR is required to demonstrate once in every Capability Period. ICAP Equivalent of Response MW, reported for each Capability Period, includes MW responses for both First and Second Performance

Tests if data is available. For resources that are required to demonstrate performance in both the First and Second Performance Tests, the maximum MW response is reported.[11]

Table 8: Summary of ICAP/SCR Program Performance Test MW Response Based on ACL Baseline - NYCA-Wide

Program	Capability Period	Zone	ICAP Equivalent of Response MW	Obligated ICAP MW	% Response of Obligated ICAP MW
SCR (ICAP)	Winter (2020-2021)	A,B,C,D,E,F,G,H,I,J,K	749.1	641.2	116.8%
SCR (ICAP)	Summer (2021)	A,B,C,D,E,F,G,H,I,J,K	1339.5	1218.3	110.0%

[11] If Verified ACL data is not available at the time of reporting for a resource enrolled with either a Provisional ACL or an Incremental ACL, the ACL with which the resource enrolled in the SCR program is used for reporting performance data.

Table 9: ICAP/SCR Program Performance Test MW Response Based on ACL Baseline – By Zone

Program	Capability Period	Zone	ICAP Equivalent of Response MW	Obligated ICAP MW	% Response of Obligated ICAP MW
SCR (ICAP)	Winter (2020-2021)	A	75.9	66.1	114.8%
		B	12.3	13.2	93.7%
		C	54.0	54.3	99.4%
		D	67.0	64.0	104.7%
		E	13.5	15.9	84.9%
		F	45.7	52.5	87.0%
		G	13.2	17.6	74.8%
		H	2.9	3.7	79.6%
		I	17.7	15.6	112.9%
		J	435.0	324.9	133.9%
		K	11.9	13.4	88.9%
		Total	749.1	641.2	116.8%

Program	Capability Period	Zone	ICAP Equivalent of Response MW	Obligated ICAP MW	% Response of Obligated ICAP MW
SCR (ICAP)	Summer (2021)	A	233.4	238.0	98.1%
		B	33.5	30.1	111.3%
		C	37.2	85.5	43.6%
		D	183.4	189.7	96.7%
		E	34.0	34.7	98.0%
		F	112.9	98.4	114.8%
		G	41.1	44.7	92.0%
		H	11.7	11.4	102.5%
		I	36.8	30.0	122.5%
		J	554.0	415.4	133.3%
		K	61.6	40.4	152.3%
		Total	1339.5	1218.3	110.0%

In addition to receiving a capacity payment for committing to reduce energy consumption, RIPs with resources enrolled in the ICAP/SCR program are eligible to receive Energy payments for reductions made by those resources during a performance test or event, provided that the RIP submits the required performance data. The amount of load reduction eligible for an Energy payment is computed using a Customer Baseline Load ("CBL"). Unlike the ACL baseline which uses a SCR's Load data from a prior like Capability Period, the CBL uses data from the previous 30 days to establish a baseline which is likely to be a more accurate representation of the resource's Load during a performance test or event but for the resource's response to the NYISO's deployment directive. The Energy payment is the difference between the hourly CBL and the corresponding interval meter readings during performance test hours, multiplied by the applicable LBMP.

Table 10 presents a summary of voluntarily reported CBL data by zone and hour for ICAP/SCR resources for the Winter 2020-2021 and Summer 2021 Capability Period performance tests. The information reported in Table 10 only includes the CBL performance during the performance test that is used for Energy payments. Since the ICAP/SCR ACL values described above are based on the prior like Capability Period, and the CBL is determined from data up to 30 days prior to performing the tests, the NYISO expects different resource response rates. Contributing to the difference between the ICAP/SCR ACL response and the CBL response is the fact that not all RIPs submit CBL energy performance data. The NYISO has observed that some RIPs report CBL data only for their larger resources, and they are more likely to report CBL data for resources in Load Zone J, where energy prices are typically higher than in the rest of the NYCA.

Table 10: ICAP/SCR Program Performance Test MW Response Based on CBL Baseline

Program	Capability Period	Zone	ICAP Equivalent of Response MW	Obligated ICAP MW of SCRs Reporting CBL Data	% Response of Obligated ICAP MW
SCR (ICAP)	Winter (2020-2021)	A	67.8	63.5	106.8%
		B	8.0	12.2	65.9%
		C	53.6	53.1	100.8%
		D	66.3	63.5	104.3%
		E	4.7	6.2	75.1%
		F	43.3	51.7	83.7%
		G	10.0	13.3	74.9%
		H	2.5	2.8	89.7%
		I	10.6	15.3	69.4%
		J	208.3	248.6	83.8%
		K	9.0	12.1	74.3%
		Total	483.9	542.3	89.2%

Program	Capability Period	Zone	ICAP Equivalent of Response MW	Obligated ICAP MW of SCRs Reporting CBL Data	% Response of Obligated ICAP MW
SCR (ICAP)	Summer (2021)	A	225.1	231.9	97.1%
		B	29.7	27.7	107.4%
		C	32.0	38.8	82.5%
		D	181.8	189.7	95.9%
		E	22.6	29.8	75.7%
		F	58.0	65.3	88.7%
		G	30.3	40.4	75.0%
		H	11.1	10.7	103.2%
		I	19.2	23.4	82.0%
		J	309.4	303.2	102.0%
		K	6.4	10.8	59.7%
		Total	925.6	971.7	95.3%

b. Event Performance

In 2021 the NYISO activated TDRP twice in response to Transmission Owner requests and the NYISO activated SCR and EDRP resources six times in Zone K to maintain transmission security:

- On June 29, 2021, SCR and EDRP resources were deployed in sub-load pocket J2 from 2 pm to 7 pm
- On June 30, 2021, SCR and EDRP resources were deployed in sub-load pocket J2 from 1 pm to 8 pm
- On August 11, 2021, SCR and EDRP resources were deployed in Zone K from 1 pm to 7 pm. Response was mandatory from 2 pm on, but did not trigger scarcity pricing.[12]
- On August 12, 2021, SCR and EDRP resources were deployed in Zone K from 1 pm to 8 pm. Response was mandatory for the entire event, but did not trigger scarcity pricing.
- On August 13, 2021, SCR and EDRP resources were deployed in Zone K from 1 pm to 8 pm. Response was mandatory for the entire event, but did not trigger scarcity pricing.
- On August 25, 2021, SCR and EDRP resources were deployed in Zone K from 1 pm to 8 pm. Response was mandatory for the entire event, and scarcity pricing was triggered for a total of five five-minute intervals during the seven-hour event.
- On August 26, 2021, SCR and EDRP resources were deployed in Zone K from 1 pm to 8 pm. Response was mandatory for the entire event, but did not trigger scarcity pricing.
- On August 27, 2021, SCR and EDRP resources were deployed in Zone K from 1 pm to 8 pm. Response was mandatory for the entire event, but did not trigger scarcity pricing.

Response from SCRs and EDRP resources to the TDRP events were voluntary. Scarcity pricing is not applicable for TDRP.

Table 11 summarizes SCR and EDRP response based on ACL and CBL, respectively, for all 2021 Summer Capability Period events. Obligated MW is defined as the Installed Capacity

[12] Additional information on scarcity pricing is available at: https://www.nyiso.com/documents/20142/3035859/Scarcity-Pricing.pdf.

Further information on scarcity pricing can be found starting with slide 48, available at: https://www.nyiso.com/documents/20142/25467833/Additional-Pricing-Rules.pdf

Equivalent of the UCAP sold by SCRs in a Load Zone during the calendar month in which the event occurred. When the amount of Obligated MW differs from enrolled MW, it indicates that a portion of a Load Zone's enrolled SCR UCAP went unsold for the month of the event. As explained in Section III, SCRs enrolled during a particular month in a Capability Period that did not sell UCAP are treated as EDRP resources for that particular month. Available EDRP MW is defined as the amount of demand response reduction nominated by the EDRP resources in a Load Zone.

Table 12 presents a summary of reported CBL data by zone and hour for ICAP/SCR resources during the Summer 2021 Capability Period. Since the ICAP/SCR ACL values described above are based on the prior like Capability Period, and the CBL is determined from data that ranges up to 30 days prior to the event, the NYISO expects different resource response rates. Contributing to the difference between the ICAP/SCR ACL response and the CBL response is the fact that not all RIPs submit CBL energy performance data. The NYISO has observed that some RIPs report CBL data only for their larger resources, and they are more likely to report CBL data for resources in Load Zone J, where energy prices are typically higher than in the rest of the NYCA.

Table 11: Summary of 2021 Event Performance using ACL for SCRs and CBL for EDRP resources

					SCR (using ACL as baseline)			EDRP (using CBL as baseline)			Reliability Program-wide		
Deployment Type	Event Day	Event Start Time	Event End Time	Zone	ICAP Equivalent of Average Hourly Response MW	Obligated ICAP MW	% Response of Obligated ICAP MW	Average Hourly Response MW	Available EDRP MW	% Response of Available EDRP MW	Total Response MW	Obligated ICAP MW and Available EDRP MW	% Response of Obligated ICAP MW and Available EDRP MW
TDRP Event	6/29/2021	6/29/2021 14:00	6/29/2021 19:00	J2	7.7	30.2	25.5%	0	0.3	0%	7.7	30.5	25.2%
TDRP Event	6/30/2021	6/30/2021 13:00	6/30/2021 20:00	J2	9.7	30.2	32.2%	0	0.3	2.1%	9.7	30.5	31.9%
NYISO Event	8/11/2021	8/11/2021 13:00	8/11/2021 19:00	K	30.8	36.8	83.60%	0	0	0%	30.8	36.8	83.60%
NYISO Event	8/12/2021	8/12/2021 13:00	8/12/2021 20:00	K	30.6	36.8	83.20%	0	0	0%	30.6	36.8	83.20%
NYISO Event	8/13/2021	8/13/2021 13:00	8/13/2021 20:00	K	32.1	36.8	87.20%	0	0	0%	32.1	36.8	87.20%
NYISO Event	8/25/2021	8/25/2021 13:00	8/25/2021 20:00	K	28.1	36.8	76.40%	0	0	0%	28.1	36.8	76.40%
NYISO Event	8/26/2021	8/26/2021 13:00	8/26/2021 20:00	K	25.3	36.8	68.70%	0	0	0%	25.3	36.8	68.70%
NYISO Event	8/27/2021	8/27/2021 13:00	8/27/2021 20:00	K	20.8	36.8	56.50%	0	0	0%	20.8	36.8	56.50%

NOTE: EDRP resource performance is calculated using the CBL baseline only. The data presented in Tables 11 and 12, therefore, contains the same information for EDRP resources.

Table 12: Summary of 2021 Event Performance using CBL for SCRs and EDRP resources

					SCR (using CBL as baseline)				EDRP (using CBL as baseline)				Reliability Program-wide			
Deployment Type	Event Day	Event Start Time	Event End Time	Zone	ICAP Equivalent of Average Hourly Response MW	Obligated ICAP MW of SCRs Reporting CBL Data	% Response of Obligated ICAP MW	Total Payment	Average Hourly Response MW	Available EDRP MW	% Response of Available EDRP MW	Total Payment	Total Response MW	Obligated ICAP MW and Available EDRP MW	% Response of Obligated ICAP MW and Available EDRP MW	Total Payment
TDRP Event	6/29/2021	6/29/2021 14:00	6/29/2021 19:00	J2	1.7	10.8	15.9%	$ 4,152.05	0	0.3	0.0%	$ -	1.7	11.1	15.5%	$ 4,152.05
TDRP Event	6/30/2021	6/30/2021 13:00	6/30/2021 20:00	J2	2.9	11.7	24.5%	$ 10,049.00	0	0.3	2.1%	$ 19.20	2.9	12.0	24.0%	$ 10,068.20
NYISO Event	8/11/2021	8/11/2021 13:00	8/11/2021 19:00	K	19.8	29.8	66.4%	$ 55,189.05	0	0	0.0%	$ -	19.8	29.8	66.4%	$ 55,189.05
NYISO Event	8/12/2021	8/12/2021 13:00	8/12/2021 20:00	K	19.3	30.5	63.3%	$ 77,072.75	0	0	0.0%	$ -	19.3	30.5	63.3%	$ 77,072.75
NYISO Event	8/13/2021	8/13/2021 13:00	8/13/2021 20:00	K	20.8	33.3	62.6%	$ 96,390.96	0	0	0.0%	$ -	20.8	33.3	62.6%	$ 96,390.96
NYISO Event	8/25/2021	8/25/2021 13:00	8/25/2021 20:00	K	14.3	29.7	48.1%	$ 46,470.70	0	0	0.0%	$ -	14.3	29.7	48.1%	$ 46,470.70
NYISO Event	8/26/2021	8/26/2021 13:00	8/26/2021 20:00	K	14.2	30.5	46.6%	$ 46,331.90	0	0	0.0%	$ -	14.2	30.5	46.6%	$ 46,331.90
NYISO Event	8/27/2021	8/27/2021 13:00	8/27/2021 20:00	K	11.8	25.7	46.1%	$ 58,610.04	0	0	0.0%	$ -	11.8	25.7	46.1%	$ 58,610.04

V. Economic Demand Response Programs

Day-Ahead Demand Response Program

There have been no offers submitted for DADRP Resources since December 2010. There is, therefore, nothing to report for this period.

Demand Side Ancillary Services Program

Because there is limited participation in the DSASP, detailed information on the program is not provided in this report.

VI. Update on 2021 Demand Response Initiatives

This section provides an update on the status of initiatives that the NYISO has been working on with its stakeholders to improve the administration of its demand response programs and to address regulatory directives to facilitate market participation. In particular, the NYISO has focused on:

- Integration of Expanding Capacity Eligibility market rules and continued development of the Demand Response Information System ("DRIS");
- Enhancing Demand Response in the Real-Time Energy market by developing a Distributed Energy Resource participation model;
- FERC Order No. 2222 compliance

Integration of Expanding Capacity Eligibility Market Rules and Continued Development of the Demand Response Information System ("DRIS")

The NYISO successfully deployed software improvements to DRIS in Q1 2021. These deployments integrated the Expanding Capacity Eligibility market rules applicable to Demand Response resources. Specifically, Special Case Resources are required to participate with a four-hour Energy Duration Limitation and be subject to a Duration Adjustment Factor. [13]

[13] Expanding Capacity Eligibility rules became effective on May 1, 2021. All Special Case Resources will have a 4-hour duration requirement and will be compensated commensurate with other four hour Resources. SCR UCAP MWs in this report, starting May 1, 2021, account for a Duration Adjustment Factor of 90% for four hour Resources. Additional detail is available at: https://www.nyiso.com/documents/20142/3036135/New-Rules-for-ICAP-Market-Participation-FINAL-VERSION.pdf/.

Enhancing Demand Response in the Real-Time Energy Market by Developing a Distributed Energy Resource Participation Model

The NYISO initiated a project in 2016 to integrate Distributed Energy Resources (DER), including demand response, into its real-time Energy markets. The primary outcome of this initiative will be the integration of dispatchable DER in the NYISO's Energy, Ancillary Service and Capacity markets.[14] In 2017 the NYISO published a DER Roadmap[15] describing NYISO's vision for integrating these resources into the wholesale markets and proposed a market design concept to its stakeholders.[16] In 2018, the NYISO worked with its stakeholders to develop a detailed market design to facilitate dispatchable DER integration. The NYISO made a total of 31 stakeholder presentations[17] to its Market Issues and Installed Capacity working groups to discuss the market design details related to DER aggregations, energy and ancillary services market participation, capacity market participation, interconnection, meter data constructs, and dual participation. In 2019, the NYISO obtained stakeholder approval of the DER participation model market design at the Business Issues Committee and Management Committee, and submitted the proposed tariff revisions to the FERC in June 2019. The FERC accepted the proposed tariff changes on January 23, 2020. The NYISO is currently working on defining the software requirements and intends to start developing the Manuals needed for the implementation of the DER / Aggregation rules. The NYISO anticipates implementing its market design in Q4 2022.

FERC Order No. 2222 Compliance

The NYISO developed additional tariff modifications to comply with FERC Order No. 2222. The NYISO submitted its compliance filing for Order No. 2222 on July 19, 2021. The DER Aggregation participation model accepted by the FERC on January 23, 2020, forms the basis of the NYISO's demonstrated compliance with Order No. 2222. It should be noted that the proceeding for Order No. 2222 is

[14] The NYISO's initiative to integrate DER will also include concepts for participation in the NYISO's capacity and ancillary services markets.

[15] New York Indep. Sys. Operator, Inc., *Distributed Energy Resources Roadmap for New York's Wholesale Electricity Markets* (Feb. 2017), *available at* https://www.nyiso.com/documents/20142/1391862/Distributed_Energy_Resources_Roadmap.pdf.

[16] New York Indep. Sys. Operator, Inc., *Distributed Resources Market Design Concept Proposal* (Dec. 2017), *available at* https://www.nyiso.com/documents/20142/1391862/Distributed-Energy-Resources-2017-Market-Design-Concept-Proposal.pdf

[17] The NYISO's DER integration related presentations are available at: https://www.nyiso.com/search?keytopics=Distributed%20Energy%20Resources%20Participation%20Model&sortField=newest.

ongoing. FERC issued a request for additional information on October 1, 2021, which the NYISO responded to on November 19, 2021. The NYISO is awaiting FERC action on its compliance filing.

VII. 2022 Demand Response Initiatives

This section provides an overview of the projects that the NYISO has planned for its demand response programs for 2022.

Continued Development of the Demand Response Information System ("DRIS")

The NYISO plans to continue updating its DRIS software to improve the user interface.

Demand Response in the Real-Time Energy Market via the Distributed Energy Resources Roadmap for New York's Wholesale Electricity Markets

The integration of DER into the NYISO's markets will continue to be the main driver in demand response innovation for 2022. The NYISO is developing detailed software requirements and has begun developing the Manuals to prepare for the DER participation model implementation.

FERC Order No. 2222 Compliance

As mentioned above, the NYISO filed its Order No. 2222 compliance filing on July 19, 2021. The NYISO is awaiting future FERC action on this docket, and will develop additional tariff modifications if directed to do so by the Commission.

Appendix A: Detailed Event Response for Summer 2021 Demand Response Events

This Appendix A includes additional data on event response for the two TDRP and the six NYISO wholesale SCR Program and EDRP activations. The following tables are presented for each event:

- Event Summary – average hourly response compared to Obligated or Available MW by program and event energy payments by program.
- SCR MW Response Based on ACL – hourly response detail by zone and average hourly response compared to Obligated MW for the zone.
- SCR Energy Response Based on CBL – response detail by zone and average hourly response compared to Obligated MW of SCRs that reported CBL data in the zone.
- SCR Energy Payments – hourly energy payments, daily BPCG payments by zone for SCRs that reported CBL data.
- Energy Response of EDRP Resources and SCRs treated as EDRP – detailed hourly response by zone, average hourly response, and comparison of average hourly response to enrolled (also referred to as Available) MW.
- Energy Payments to EDRP Resources and SCRs treated as EDRP – hourly and total event energy payments by zone.

TDRP Activations

June 29, 2021: SCR and EDRP Response was voluntary for all deployed zones/sub-load pockets

Table A-1: Event Summary – June 29, 2021

	Zone	ICAP Equivalent of Average Hourly Response MW or Average Hourly Response MW	Obligated ICAP MW or Available EDRP MW	% Response of Obligated ICAP MW or Available EDRP MW	Total Payment
SCR (ICAP)	J	7.7	30.2	25.5%	$ 4,152.05
EDRP and SCRs treated as EDRP	J	0.0	0.3	0.0%	$ -
Total		7.7	30.5	25.2%	$ 4,152.05

Table A-2: SCR MW Response Based on ACL – June 29, 2021

Zone	HB 14	HB 15	HB 16	HB 17	HB 18	ICAP Equivalent of Average Hourly Response MW	Obligated ICAP MW	% Response of Obligated ICAP MW
J2	6.0	5.6	7.0	8.0	11.9	7.7	30.2	25.5%
Total	6.0	5.6	7.0	8.0	11.9	7.7	30.2	25.5%

Table A-3: SCR MW Response Based on CBL – June 29, 2021

Zone	HB 14	HB 15	HB 16	HB 17	HB 18	ICAP Equivalent of Average Hourly Response MW	Obligated ICAP MW of SCRs Reporting CBL Data	% Response of Obligated ICAP MW
J2	1.2	1.3	2.1	1.8	2.3	1.7	10.8	15.9%
Total	1.2	1.3	2.1	1.8	2.3	1.7	10.8	15.9%

Table A-4: SCR Energy Payments – June 29, 2021

Zone	HB 14	HB 15	HB 16	HB 17	HB 18	Sum of LBMP Payments	Sum of BPCG Payments	Total Payments
J2	$ 141.05	$ 215.74	$ 245.61	$ 244.23	$ 308.91	$ 1,155.53	$ 2,996.52	$ 4,152.05
Total	$ 141.05	$ 215.74	$ 245.61	$ 244.23	$ 308.91	$ 1,155.53	$ 2,996.52	$ 4,152.05

Table A-5: Energy Response of EDRP Resources and SCRs treated as EDRP – June 29, 2021

Zone	HB 14	HB 15	HB 16	HB 17	HB 18	Average Hourly Response MW	Available EDRP MW	% Response of Available MW
J2	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0%
Total	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0%

Table A-6: Energy Payments to EDRP Resources and SCRs treated as EDRP – June 29, 2021

Zone	HB 14	HB 15	HB 16	HB 17	HB 18	Sum of LBMP Payments
J2	$ -	$ -	$ -	$ -	$ -	$ -
Total	$ -	$ -	$ -	$ -	$ -	$ -

June 30, 2021: SCR and EDRP Response was voluntary for all deployed zones/sub-load pockets

Table A-7: Event Summary – June 30, 2021

	Zone	ICAP Equivalent of Average Hourly Response MW or Average Hourly Response MW	Obligated ICAP MW or Available EDRP MW	% Response of Obligated ICAP MW or Available EDRP MW	Total Payment
SCR (ICAP)	J2	9.7	30.2	32.2%	$ 10,049.00
EDRP and SCRs treated as EDRP	J2	0.0	0.3	2.1%	$ 19.20
Total		9.7	30.5	31.9%	$ 10,068.20

Table A-8: SCR MW Response Based on ACL – June 30, 2021

Zone	HB 13	HB 14	HB 15	HB 16	HB 17	HB 18	HB 19	ICAP Equivalent of Average Hourly Response MW	Obligated ICAP MW	% Response of Obligated ICAP MW
J2	7.7	7.5	6.2	7.3	9.3	12.8	17.2	9.7	30.2	32.2%
Total	7.7	7.5	6.2	7.3	9.3	12.8	17.2	9.7	30.2	32.2%

Table A-9: SCR MW Response Based on CBL – June 30, 2021

Zone	HB 13	HB 14	HB 15	HB 16	HB 17	HB 18	HB 19	ICAP Equivalent of Average Hourly Response MW	Obligated ICAP MW of SCRs Reporting CBL Data	% Response of Obligated ICAP MW
J2	2.8	3.1	2.0	2.7	3.2	3.4	3.7	2.9	11.7	24.5%
Total	2.8	3.1	2.0	2.7	3.2	3.4	3.7	2.9	11.7	24.5%

Table A-10: SCR Energy Payments – June 30, 2021

Zone	HB 13	HB 14	HB 15	HB 16	HB 17	HB 18	HB 19	Sum of LBMP Payments	Sum of BPCG Payments	Total Payments
J2	$ 205.61	$ 243.05	$ 116.65	$ 291.23	$ 839.53	$ 766.09	$ 316.12	$ 2,778.28	$ 7,270.72	$ 10,049.00
Total	$ 205.61	$ 243.05	$ 116.65	$ 291.23	$ 839.53	$ 766.09	$ 316.12	$ 2,778.28	$ 7,270.72	$ 10,049.00

Table A-11: Energy Response of EDRP Resources and SCRs treated as EDRP – June 30, 2021

Zone	HB 13	HB 14	HB 15	HB 16	HB 17	HB 18	HB 19	Average Hourly Response MW	Available EDRP MW	% Response of Available MW
J2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	2.1%
Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	2.1%

Table A-12: Energy Payments to EDRP Resources and SCRs treated as EDRP – June 30, 2021

Zone	HB 13	HB 14	HB 15	HB 16	HB 17	HB 18	HB 19	Sum of LBMP Payments
J2	$ -	$ 2.90	$ 2.90	$ 4.40	$ 2.65	$ 3.15	$ 3.20	$ 19.20
Total	$ -	$ 2.90	$ 2.90	$ 4.40	$ 2.65	$ 3.15	$ 3.20	$ 19.20

NYISO Activations

August 11, 2021: Mandatory SCR response beginning with hour beginning 14:00 in Zone K; EDRP Response also requested

Table A-13: Event Summary – August 11, 2021

	Zone	ICAP Equivalent of Average Hourly Response MW or Average Hourly Response MW	Obligated ICAP MW or Available EDRP MW	% Response of Obligated ICAP MW or Available EDRP MW	Total Payment
SCR (ICAP)	K	30.8	36.8	83.6%	$ 55,189.05
EDRP and SCRs treated as EDRP	K	0.0	0.0	0.0%	$ -
Total		30.8	36.8	83.6%	$ 55,189.05

Table A-14: SCR MW Response Based on ACL – August 11, 2021

Zone	HB 13	HB 14	HB 15	HB 16	HB 17	HB 18	ICAP Equivalent of Average Hourly Response MW	Obligated ICAP MW	% Response of Obligated ICAP MW
K	26.8	29.6	33.3	33.9	30.6	30.5	30.8	36.8	83.6%
Total	26.8	29.6	33.3	33.9	30.6	30.5	30.8	36.8	83.6%

Table A-15: SCR MW Response Based on CBL – August 11, 2021

Zone	HB 13	HB 14	HB 15	HB 16	HB 17	HB 18	ICAP Equivalent of Average Hourly Response MW	Obligated ICAP MW of SCRs Reporting CBL Data	% Response of Obligated ICAP MW
K	17.4	21.2	24.7	23.3	17.4	14.6	19.8	29.8	66.4%
Total	17.4	21.2	24.7	23.3	17.4	14.6	19.8	29.8	66.4%

Table A-16: SCR Energy Payments – August 11, 2021

Zone	HB 13	HB 14	HB 15	HB 16	HB 17	HB 18	Sum of LBMP Payments	Sum of BPCG Payments	Total Payments
K	$ 3,423.17	$ 4,258.33	$ 5,083.90	$ 5,067.60	$ 4,087.80	$ 3,610.32	$ 25,531.12	$29,657.93	$ 55,189.05
Total	$ 3,423.17	$ 4,258.33	$ 5,083.90	$ 5,067.60	$ 4,087.80	$ 3,610.32	$ 25,531.12	$29,657.93	$ 55,189.05

Table A-17: Energy Response of EDRP Resources and SCRs treated as EDRP – August 11, 2021

Zone	HB 13	HB 14	HB 15	HB 16	HB 17	HB 18	Average Hourly Response MW	Available EDRP MW	% Response of Available MW
K	0.0	0.0	0.0	0.0	0.0	0.0	0.000	0.0	0%
Total	0.0	0.0	0.0	0.0	0.0	0.0	0.000	0.0	0%

Table A-18: Energy Payments to EDRP Resources and SCRs treated as EDRP – August 11, 2021

Zone	HB 13	HB 14	HB 15	HB 16	HB 17	HB 18	Sum of LBMP Payments
K	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total	$ -	$ -	$ -	$ -	$ -	$ -	$ -

August 12, 2021: Mandatory SCR response in Zone K; EDRP Response also requested

Table A-19: Event Summary – August 12, 2021

	Zone	ICAP Equivalent of Average Hourly Response MW or Average Hourly Response MW	Obligated ICAP MW or Available EDRP MW	% Response of Obligated ICAP MW or Available EDRP MW	Total Payment
SCR (ICAP)	K	30.6	36.8	83.2%	$ 77,072.75
EDRP and SCRs treated as EDRP	K	0.0	0.0	0.0%	$ -
Total		30.6	36.8	83.2%	$ 77,072.75

Table A-20: SCR MW Response Based on ACL – August 12, 2021

Zone	HB 13	HB 14	HB 15	HB 16	HB 17	HB 18	HB 19	ICAP Equivalent of Average Hourly Response MW	Obligated ICAP MW	% Response of Obligated ICAP MW
K	25.6	28.9	35.1	35.2	30.5	31.1	27.9	30.6	36.8	83.2%
Total	25.6	28.9	35.1	35.2	30.5	31.1	27.9	30.6	36.8	83.2%

Table A-21: SCR MW Response Based on CBL – August 12, 2021

Zone	HB 13	HB 14	HB 15	HB 16	HB 17	HB 18	HB 19	ICAP Equivalent of Average Hourly Response MW	Obligated ICAP MW of SCRs Reporting CBL Data	% Response of Obligated ICAP MW
K	18.0	21.3	26.8	24.7	17.6	15.9	10.7	19.3	30.5	63.3%
Total	18.0	21.3	26.8	24.7	17.6	15.9	10.7	19.3	30.5	63.3%

Table A-22: SCR Energy Payments – August 12, 2021

Zone	HB 13	HB 14	HB 15	HB 16	HB 17	HB 18	HB 19	Sum of LBMP Payments	Sum of BPCG Payments	Total Payments
K	$ 4,153.14	$ 4,720.61	$ 5,953.40	$ 26,907.65	$ 20,523.77	$ 9,652.63	$ 3,920.71	$ 75,831.91	$ 1,240.84	$ 77,072.75
Total	$ 4,153.14	$ 4,720.61	$ 5,953.40	$ 26,907.65	$ 20,523.77	$ 9,652.63	$ 3,920.71	$ 75,831.91	$ 1,240.84	$ 77,072.75

Table A-23: Energy Response of EDRP Resources and SCRs treated as EDRP – August 12, 2021

Zone	HB 13	HB 14	HB 15	HB 16	HB 17	HB 18	Average Hourly Response MW	Available EDRP MW	% Response of Available MW
K	0.0	0.0	0.0	0.0	0.0	0.0	0.000	0.0	0%
Total	0.0	0.0	0.0	0.0	0.0	0.0	0.000	0.0	0%

Table A-24: Energy Payments to EDRP Resources and SCRs treated as EDRP – August 12, 2021

Zone	HB 13	HB 14	HB 15	HB 16	HB 17	HB 18	Sum of LBMP Payments
K	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total	$ -	$ -	$ -	$ -	$ -	$ -	$ -

August 13, 2021: Mandatory SCR response in Zone K; EDRP Response also requested

Table A-25: Event Summary – August 13, 2021

	Zone	ICAP Equivalent of Average Hourly Response MW or Average Hourly Response MW	Obligated ICAP MW or Available EDRP MW	% Response of Obligated ICAP MW or Available EDRP MW	Total Payment
SCR (ICAP)	K	32.1	36.8	87.2%	$ 96,390.96
EDRP and SCRs treated as EDRP	K	0.0	0.0	0.0%	$ -
Total		32.1	36.8	87.2%	$ 96,390.96

Table A-26: SCR MW Response Based on ACL – August 13, 2021

Zone	HB 13	HB 14	HB 15	HB 16	HB 17	HB 18	HB 19	ICAP Equivalent of Average Hourly Response MW	Obligated ICAP MW	% Response of Obligated ICAP MW
K	27.8	29.7	36.7	36.8	31.7	33.0	29.0	32.1	36.8	87.2%
Total	27.8	29.7	36.7	36.8	31.7	33.0	29.0	32.1	36.8	87.2%

Table A-27: SCR MW Response Based on CBL – August 13, 2021

Zone	HB 13	HB 14	HB 15	HB 16	HB 17	HB 18	HB 19	ICAP Equivalent of Average Hourly Response MW	Obligated ICAP MW of SCRs Reporting CBL Data	% Response of Obligated ICAP MW
K	20.5	22.7	28.8	26.2	18.3	17.3	11.9	20.8	33.3	62.6%
Total	20.5	22.7	28.8	26.2	18.3	17.3	11.9	20.8	33.3	62.6%

Table A-28: SCR Energy Payments – August 13, 2021

Zone	HB 13	HB 14	HB 15	HB 16	HB 17	HB 18	HB 19	Sum of LBMP Payments	Sum of BPCG Payments	Total Payments
K	$ 4,486.39	$ 10,857.77	$ 21,938.50	$ 30,221.69	$ 19,535.87	$ 3,863.65	$ 5,409.00	$ 96,312.85	$ 78.10	$ 96,390.96
Total	$ 4,486.39	$ 10,857.77	$ 21,938.50	$ 30,221.69	$ 19,535.87	$ 3,863.65	$ 5,409.00	$ 96,312.85	$ 78.10	$ 96,390.96

Table A-29: Energy Response of EDRP Resources and SCRs treated as EDRP – August 13, 2021

Zone	HB 13	HB 14	HB 15	HB 16	HB 17	HB 18	Average Hourly Response MW	Available EDRP MW	% Response of Available MW
K	0.0	0.0	0.0	0.0	0.0	0.0	0.000	0.0	0%
Total	0.0	0.0	0.0	0.0	0.0	0.0	0.000	0.0	0%

Table A-30: Energy Payments to EDRP Resources and SCRs treated as EDRP – August 13, 2021

Zone	HB 13	HB 14	HB 15	HB 16	HB 17	HB 18	Sum of LBMP Payments
K	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total	$ -	$ -	$ -	$ -	$ -	$ -	$ -

August 25, 2021: Mandatory SCR response in Zone K; EDRP Response also requested

Table A-31: Event Summary – August 25, 2021

	Zone	ICAP Equivalent of Average Hourly Response MW or Average Hourly Response MW	Obligated ICAP MW or Available EDRP MW	% Response of Obligated ICAP MW or Available EDRP MW	Total Payment
SCR (ICAP)	K	28.1	36.8	76.4%	$ 46,470.70
EDRP and SCRs treated as EDRP	K	0.0	0.0	0.0%	$ -
Total		28.1	36.8	76.4%	$ 46,470.70

Table A-32: SCR MW Response Based on ACL – August 25, 2021

Zone	HB 13	HB 14	HB 15	HB 16	HB 17	HB 18	HB 19	ICAP Equivalent of Average Hourly Response MW	Obligated ICAP MW	% Response of Obligated ICAP MW
K	25.8	26.9	29.8	30.1	29.0	29.7	25.6	28.1	36.8	76.4%
Total	25.8	26.9	29.8	30.1	29.0	29.7	25.6	28.1	36.8	76.4%

Table A-33: SCR MW Response Based on CBL – August 25, 2021

Zone	HB 13	HB 14	HB 15	HB 16	HB 17	HB 18	HB 19	ICAP Equivalent of Average Hourly Response MW	Obligated ICAP MW of SCRs Reporting CBL Data	% Response of Obligated ICAP MW
K	12.9	14.3	17.8	17.4	15.3	13.6	8.7	14.3	29.7	48.1%
Total	12.9	14.3	17.8	17.4	15.3	13.6	8.7	14.3	29.7	48.1%

Table A-34: SCR Energy Payments – August 25, 2021

Zone	HB 13	HB 14	HB 15	HB 16	HB 17	HB 18	HB 19	Sum of LBMP Payments	Sum of BPCG Payments	Total Payments
K	$ 2,051.02	$ 2,877.15	$ 3,608.21	$ 6,461.78	$ 3,186.60	$ 3,350.68	$ 1,096.07	$ 22,631.51	$23,839.19	$ 46,470.70
Total	$ 2,051.02	$ 2,877.15	$ 3,608.21	$ 6,461.78	$ 3,186.60	$ 3,350.68	$ 1,096.07	$ 22,631.51	$23,839.19	$ 46,470.70

Table A-35: Energy Response of EDRP Resources and SCRs treated as EDRP – August 25, 2021

Zone	HB 13	HB 14	HB 15	HB 16	HB 17	HB 18	Average Hourly Response MW	Available EDRP MW	% Response of Available MW
K	0.0	0.0	0.0	0.0	0.0	0.0	0.000	0.0	0%
Total	0.0	0.0	0.0	0.0	0.0	0.0	0.000	0.0	0%

Table A-36: Energy Payments to EDRP Resources and SCRs treated as EDRP – August 25, 2021

Zone	HB 13	HB 14	HB 15	HB 16	HB 17	HB 18	Sum of LBMP Payments
K	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total	$ -	$ -	$ -	$ -	$ -	$ -	$ -

August 26, 2021: Mandatory SCR response in Zone K; EDRP Response also requested

Table A-37: Event Summary – August 26, 2021

	Zone	ICAP Equivalent of Average Hourly Response MW or Average Hourly Response MW	Obligated ICAP MW or Available EDRP MW	% Response of Obligated ICAP MW or Available EDRP MW	Total Payment
SCR (ICAP)	K	25.3	36.8	68.7%	$ 46,331.90
EDRP and SCRs treated as EDRP	K	0.0	0.0	0.0%	$ -
Total		25.3	36.8	68.7%	$ 46,331.90

Table A-38: SCR MW Response Based on ACL – August 26, 2021

Zone	HB 13	HB 14	HB 15	HB 16	HB 17	HB 18	HB 19	ICAP Equivalent of Average Hourly Response MW	Obligated ICAP MW	% Response of Obligated ICAP MW
K	19.7	21.3	26.5	26.6	27.7	29.2	26.1	25.3	36.8	68.7%
Total	19.7	21.3	26.5	26.6	27.7	29.2	26.1	25.3	36.8	68.7%

Table A-39: SCR MW Response Based on CBL – August 26, 2021

Zone	HB 13	HB 14	HB 15	HB 16	HB 17	HB 18	HB 19	ICAP Equivalent of Average Hourly Response MW	Obligated ICAP MW of SCRs Reporting CBL Data	% Response of Obligated ICAP MW
K	11.3	13.1	17.8	16.6	15.8	14.7	10.3	14.2	30.5	46.6%
Total	11.3	13.1	17.8	16.6	15.8	14.7	10.3	14.2	30.5	46.6%

Table A-40: SCR Energy Payments – August 26, 2021

Zone	HB 13	HB 14	HB 15	HB 16	HB 17	HB 18	HB 19	Sum of LBMP Payments	Sum of BPCG Payments	Total Payments
K	$ 2,465.63	$ 2,947.19	$ 6,746.07	$ 3,782.71	$ 3,761.00	$ 3,172.48	$ 3,655.64	$ 26,530.72	$19,801.18	$ 46,331.90
Total	$ 2,465.63	$ 2,947.19	$ 6,746.07	$ 3,782.71	$ 3,761.00	$ 3,172.48	$ 3,655.64	$ 26,530.72	$19,801.18	$ 46,331.90

Table A-41: Energy Response of EDRP Resources and SCRs treated as EDRP – August 26, 2021

Zone	HB 13	HB 14	HB 15	HB 16	HB 17	HB 18	Average Hourly Response MW	Available EDRP MW	% Response of Available MW
K	0.0	0.0	0.0	0.0	0.0	0.0	0.000	0.0	0%
Total	0.0	0.0	0.0	0.0	0.0	0.0	0.000	0.0	0%

Table A-42: Energy Payments to EDRP Resources and SCRs treated as EDRP – August 26, 2021

Zone	HB 13	HB 14	HB 15	HB 16	HB 17	HB 18	Sum of LBMP Payments
K	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total	$ -	$ -	$ -	$ -	$ -	$ -	$ -

August 27, 2021: Mandatory SCR response in Zone K; EDRP Response also requested

Table A-43: Event Summary – August 27, 2021

	Zone	ICAP Equivalent of Average Hourly Response MW or Average Hourly Response MW	Obligated ICAP MW or Available EDRP MW	% Response of Obligated ICAP MW or Available EDRP MW	Total Payment
SCR (ICAP)	K	20.8	36.8	56.5%	$ 58,610.04
EDRP and SCRs treated as EDRP	K	0.0	0.0	0.0%	$ -
Total		20.8	36.8	56.5%	$ 58,610.04

Table A-44: SCR MW Response Based on ACL – August 27, 2021

Zone	HB 13	HB 14	HB 15	HB 16	HB 17	HB 18	HB 19	ICAP Equivalent of Average Hourly Response MW	Obligated ICAP MW	% Response of Obligated ICAP MW
K	16.2	18.1	21.3	21.8	22.2	24.1	22.0	20.8	36.8	56.5%
Total	16.2	18.1	21.3	21.8	22.2	24.1	22.0	20.8	36.8	56.5%

Table A-45: SCR MW Response Based on CBL – August 27, 2021

Zone	HB 13	HB 14	HB 15	HB 16	HB 17	HB 18	HB 19	ICAP Equivalent of Average Hourly Response MW	Obligated ICAP MW of SCRs Reporting CBL Data	% Response of Obligated ICAP MW
K	9.3	11.3	14.2	13.8	12.8	12.3	9.1	11.8	25.7	46.1%
Total	9.3	11.3	14.2	13.8	12.8	12.3	9.1	11.8	25.7	46.1%

Table A-46: SCR Energy Payments – August 27, 2021

Zone	HB 13	HB 14	HB 15	HB 16	HB 17	HB 18	HB 19	Sum of LBMP Payments	Sum of BPCG Payments	Total Payments
K	$ 4,278.43	$ 11,760.06	$ 13,263.21	$ 15,410.23	$ 4,719.18	$ 3,513.61	$ 5,656.18	$ 58,600.91	$ 9.13	$ 58,610.04
Total	$ 4,278.43	$ 11,760.06	$ 13,263.21	$ 15,410.23	$ 4,719.18	$ 3,513.61	$ 5,656.18	$ 58,600.91	$ 9.13	$ 58,610.04

Table A-47: Energy Response of EDRP Resources and SCRs treated as EDRP – August 27, 2021

Zone	HB 13	HB 14	HB 15	HB 16	HB 17	HB 18	Average Hourly Response MW	Available EDRP MW	% Response of Available MW
K	0.0	0.0	0.0	0.0	0.0	0.0	0.000	0.0	0%
Total	0.0	0.0	0.0	0.0	0.0	0.0	0.000	0.0	0%

Table A-48: Energy Payments to EDRP Resources and SCRs treated as EDRP – August 27, 2021

Zone	HB 13	HB 14	HB 15	HB 16	HB 17	HB 18	Sum of LBMP Payments
K	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total	$ -	$ -	$ -	$ -	$ -	$ -	$ -