

Status of NYISO Demand Response Programs

November 7, 2003

Price Responsive Load
Working Group



RIP and CSP Total MW Registered

EDRP/SCR Corrected Breakdown for October, 2003

<i>RIP/CSP Type</i>	<i>SCR MW</i>	<i>EDRP MW</i>	<i>Total MW</i>
16 Aggregators	439.0 MW	110.8 MW	549.8 MW
4 Individual Customers	149.9 MW	2.0 MW	151.9 MW
7 Transmission Owners	63.2 MW	843.6 MW	906.8 MW

DRAFT – For Discussion Purposes Only

EDRP/SCR Registration by Zone

EDRP/SCR Registration as of 10/14/2003				
Zone	SCR Registration		EDRP Registration	
	MW Registered	# Customers Registered	MW Registered	# Customers Registered
A	333	33	152.2	61
B	30.2	13	33.1	19
C	75.6	30	38.4	153
D	3.6	5	219.4	9
E	12	8	71.6	54
F	53.5	12	71.7	64
G	0	0	55.4	42
H	2.4	4	7.2	8
I	8	8	17.8	32
J	126.7	64	106.8	115
K	7.1	11	182.7	817
TOTAL	652.1	188	956.3	1374
TOTAL EDRP & SCR	1608.4 MW		1562 Customers	

DRAFT – For Discussion Purposes Only



RIP and CSP Total MW Registered

EDRP/SCR Corrected Breakdown for November, 2003

<i>RIP/CSP Type</i>	<i>SCR MW</i>	<i>EDRP MW</i>	<i>Total MW</i>
17 Aggregators	601.3 MW	60.1 MW	661.4 MW
5 Individual Customers	128.0 MW	2.0 MW	130.0 MW
8 Transmission Owners	63.5 MW	563.9 MW	627.4 MW

DRAFT – For Discussion Purposes Only

EDRP/SCR Registration by Zone

EDRP/SCR Registration as of 11/06/2003				
Zone	SCR Registration		EDRP Registration	
	MW Registered	# Customers Registered	MW Registered	# Customers Registered
A	292.4	40	53.3	53
B	27.9	18	32.5	15
C	90.7	36	37.9	148
D	159.5	7	4.4	7
E	13.6	13	56	47
F	52.6	14	63.3	63
G	0	0	54.9	41
H	0.7	1	7.3	9
I	5.3	6	13.6	27
J	149.2	65	114.8	123
K	0.9	1	187.9	824
TOTAL	792.8	201	625.9	1357
TOTAL EDRP & SCR	1418.7 MW		1558 Customers	

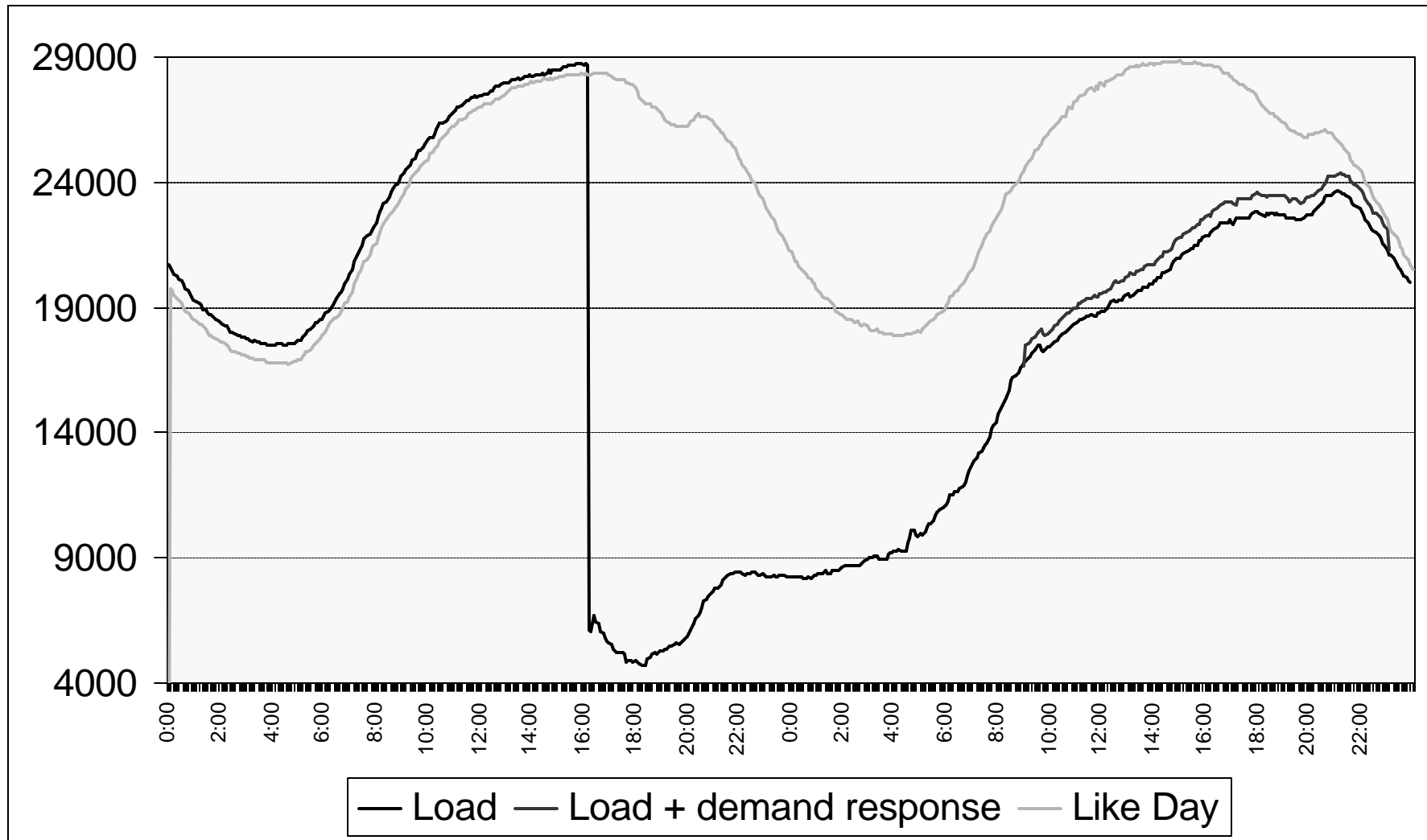
DRAFT – For Discussion Purposes Only

August EDRP/SCR Response by Zone

Zone	Total MW Registered	Curt Load or Both	DG	Average MW Response		Average Performance		Average Performance	
				15-Aug	16-Aug	15-Aug	16-Aug	15-Aug	16-Aug
A	485.18	471.23	13.95	291.72	250.73	60.1%	51.7%	SCR Resources	
B	63.33	32.03	31.30	32.97	28.06	52.1%	44.3%	15-Aug	16-Aug
C	114.05	97.25	16.80	59.94	4.65	52.5%	4.1%	53.30%	36.81%
D	223.03	219.63	3.40	13.00	5.73	5.8%	2.6%		
E	83.58	54.18	29.40	30.24	6.92	36.2%	8.3%		
F	125.18	115.08	10.30	84.00	61.24	67.1%	48.9%	Average Performance	
G	55.37	36.77	18.60	23.14	13.18	41.8%	23.8%	EDRP Resources	
H	9.60	3.50	6.10	3.68	0.59	38.3%	6.2%	15-Aug	16-Aug
I	25.85	16.55	8.30	11.48	1.77	44.4%	6.9%	42.29%	17.69%
J	233.51	177.52	57.60	131.71	45.22	56.4%	19.4%		
K	189.83	102.26	84.55	70.17	12.69	37.0%	6.7%		
TOTAL	1,608.51	1,326.00	280.31	752.04	430.79	46.8%	26.8%		
August 15 Payout:	\$5,797,519.62								
August 16 Payout:	\$1,680,212.77								
Total Payout:	\$7,477,732.39								

DRAFT – For Discussion Purposes Only

Impact of Demand Response on 8/15



DRAFT – For Discussion Purposes Only



August EDRP/SCR Response (cont.)

- 1562 Customers/1608 MW Registered
 - MW Registered is a new record
 - # Customers down slightly from 2002
- Peak reduction was 871.55 MW in HB13 on 8/15
 - This is a new record
- Total Payout was ~\$7.5 million
 - This was a new record
- Overall performance rates were down significantly
 - Some resources did not respond at all or their response was off significantly from “normal” levels
 - Other resources provided far in excess (>10x) of their expected/registered performance

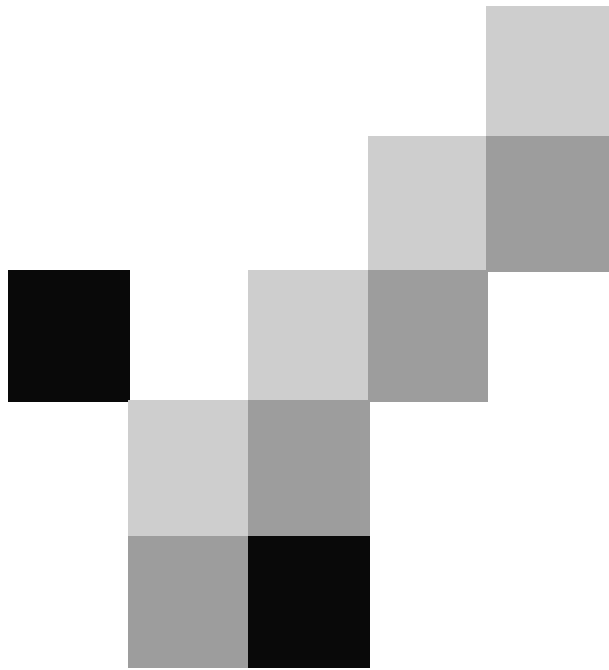
DRAFT – For Discussion Purposes Only



Past EDRP/SCR Experience

	Participants/ MW	Events	Load Curtailed	Payments
2001	292 712 MW	23 Hours Downstate 17 Hour Upstate	~425 MW 38% of CBL (summer)	\$4.2 Mil
2002	1711 1481 MW	22 Hours Downstate 10 Hour Upstate	~668 MW 34% of CBL (summer)	\$3.3 Mil
2003	1562 1608 MW	22 Hours Upstate and Downstate	~752 MW 36% of CBL (8/15)	\$7.5 Mil

DRAFT – For Discussion Purposes Only



NYSERDA

Peak Load Reduction
Program (PON 835)

Chris Smith

518-862-1090 ext. 3360



Program Components

- Permanent Demand Reduction Efforts (PDRE)
- Load Curtailment/Shifting (LC/S)
- Dispatchable Emergency Generator Initiatives (DEGI)
- Interval Meters (IM)



Permanent Demand Reductions

- Quickly implemented projects that result in long term demand reduction
- 20 kW minimum demand reduction
- Common measures include lighting, motors, cooling system upgrades, etc
- 70% of eligible costs up to \$475/kW by 3/31/05



Load Curtailment/Shifting

- Identify and control discretionary loads
- Supports Utility/NYISO DRP
- Direct load control encouraged
- Common measures include duty cycling, process shifting, lighting reductions, etc
- 100 kW minimum (may be aggregated)
- 70% of eligible costs up to \$175/kW by 3/31/05



Dispatchable Emergency Generator Initiatives

- Energy & environmental controls & enhancements to improve operations and responsiveness
- Supports NYISO EDRP & SCR
- Eligibility limited to facilities in Con-Edison service territory and existing machines with NOx emissions less than 35 lbs/MWh
- Common measures include switchgear, controls, test & tunes, dual fuel conversions, etc
- Replacement option w/emissions limits
- 70% of eligible costs up to \$120/kW by 3/31/05

DRAFT – For Discussion Purposes Only



Interval Meters

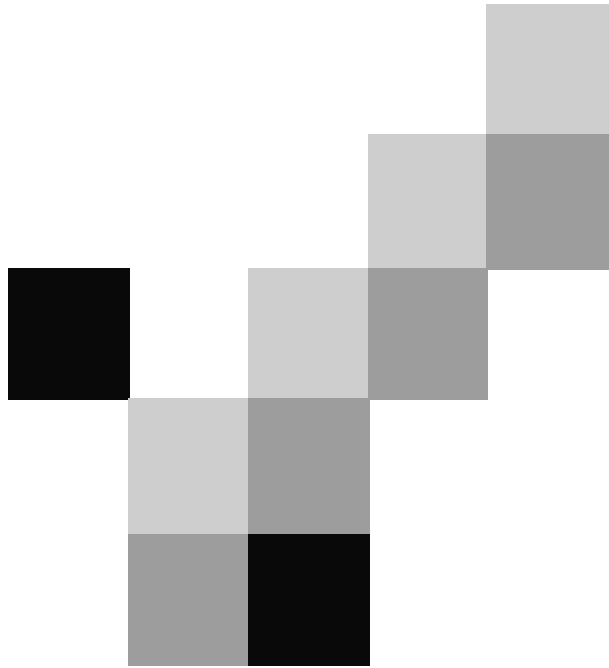
- Interval metering intended for primary electric service
- Intended to support NYISO & Utility DRPs
- \$2,500 for “socket meters”, or \$1,200 for “shadow meters”
- 70% of eligible costs up to \$2,500 by 3/31/05

DRAFT Incentives

PDRE		LC/S		DEGI	IM
Con Edison Service Territory	Non-Con Edison Service Territory	Con Edison Service Territory	Non-Con Edison Service Territory	Con Edison Service Territory only	Statewide
\$475/kW	\$225/kW	\$175/kW	\$45/kW	\$125/kW	\$2,500 or \$1,200/meter

NOTE: Contractors will be reimbursed the lesser of 70% of the Eligible Project Costs or the incentive caps set forth in Table 1. The Facility owner/operator must contribute no less than 30% of Eligible Project Costs.

DRAFT – For Discussion Purposes Only



RTDRP Focus Group Lessons



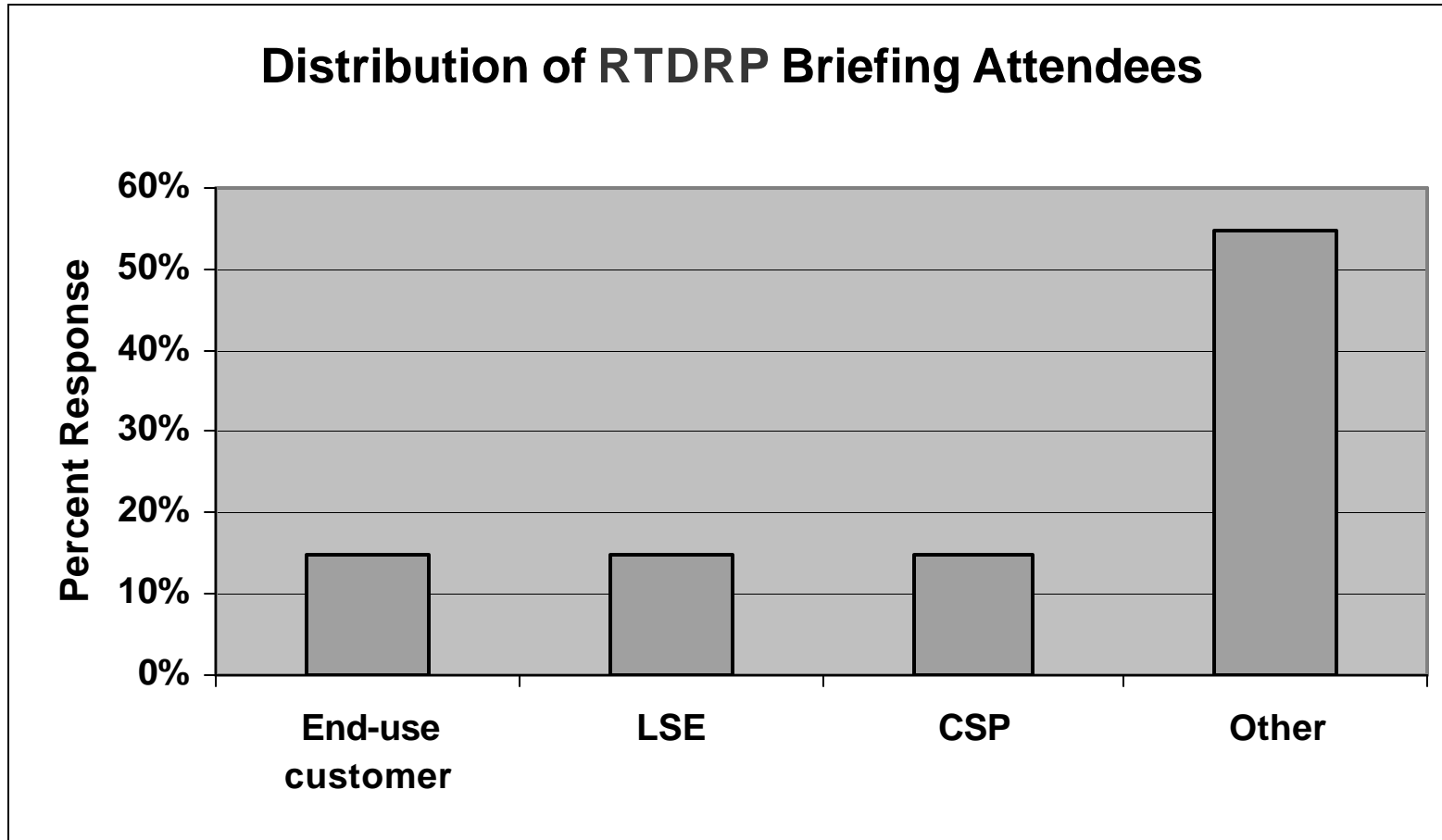
Customer Acceptance of RTDRP

Goal- gauge interest in customer participation in real-time ancillary services market under RTS, through RTDRP

Approach- simulate benefits to RTDRP and similar programs and conduct workshops to measure understanding and interest

Workshops held in Albany and NYC. NYISO extended invitations

Workshop Participants



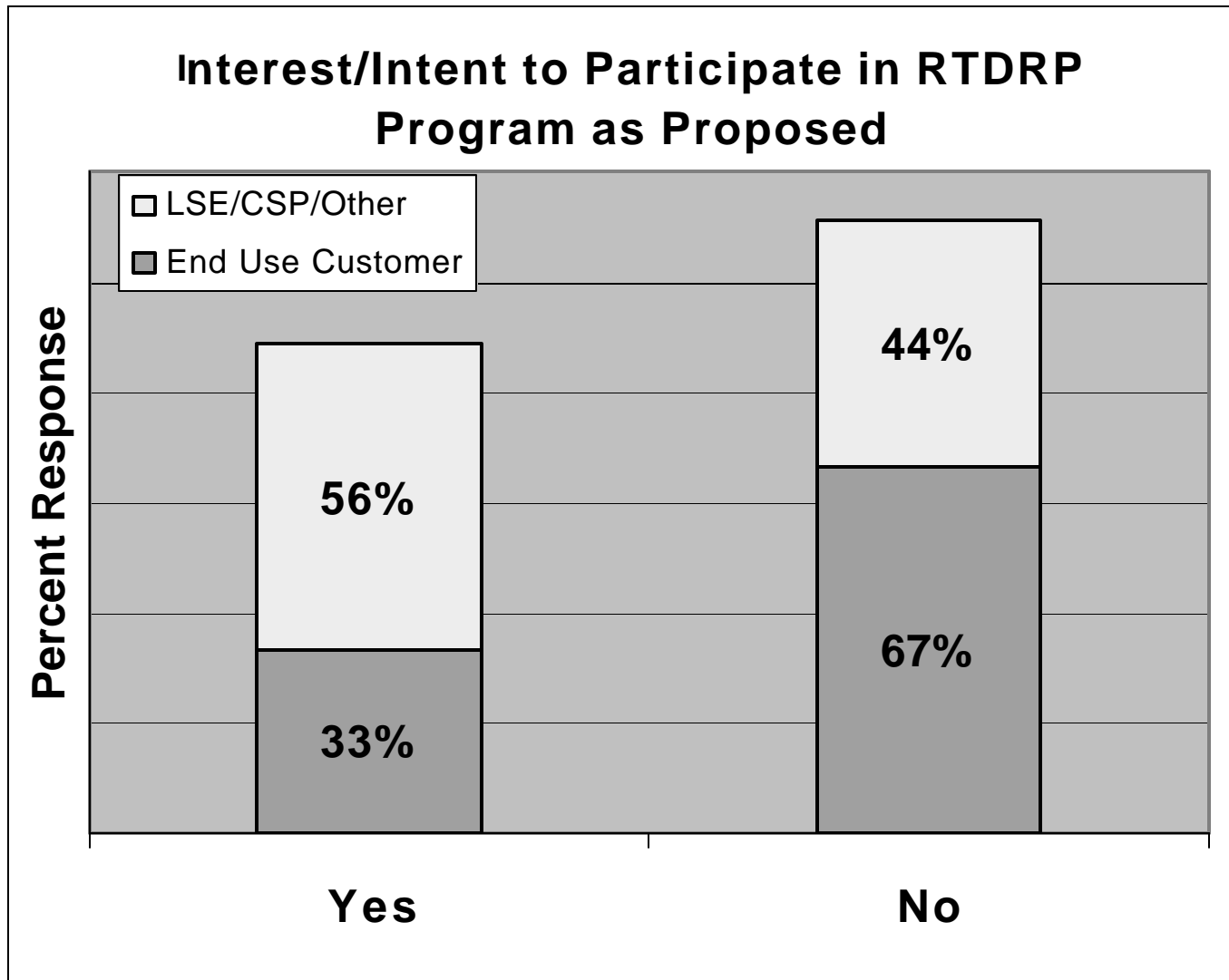
DRAFT – For Discussion Purposes Only

Summary of Programs Simulated

DR Programs	Bid Placement	Notification	Scheduling	Command and Control	Relationship to Markets	Energy Payments
NYISO RTDRP	Can be continuous	5 min. for scheduling	Scheduled energy 5 min. unless minimum run-time is set longer	ISO may adjust requested curtailment level between MIN and MAX every 6 sec.	Incorporated into RTM by NYISO	None
Day-Ahead AS	By 5 a.m.	By 11 a.m.	1 hour	Curtailment level scheduled for an hour at a time	Incorporated into DAM by NYISO	None
LSE-sponsored RTDRP	LSE submitted but can be continuous	5 min. for scheduling	Scheduled energy 5 min. unless minimum run-time is set longer	LSE will set rules (LSE may pass down ISO requirements)	LSE submitted bids incorporated into RTM	Shared savings resulting from difference between energy prices in DAM and RTM
NYISO RTDRP + Energy Payment	Can be continuous	5 min. for scheduling	Scheduled energy 5 min. unless minimum run-time is set longer	ISO may adjust requested curtailment level between MIN and MAX every 6 sec.	Incorporated into RTM by NYISO	RTM LBMP minus participant's retail rate

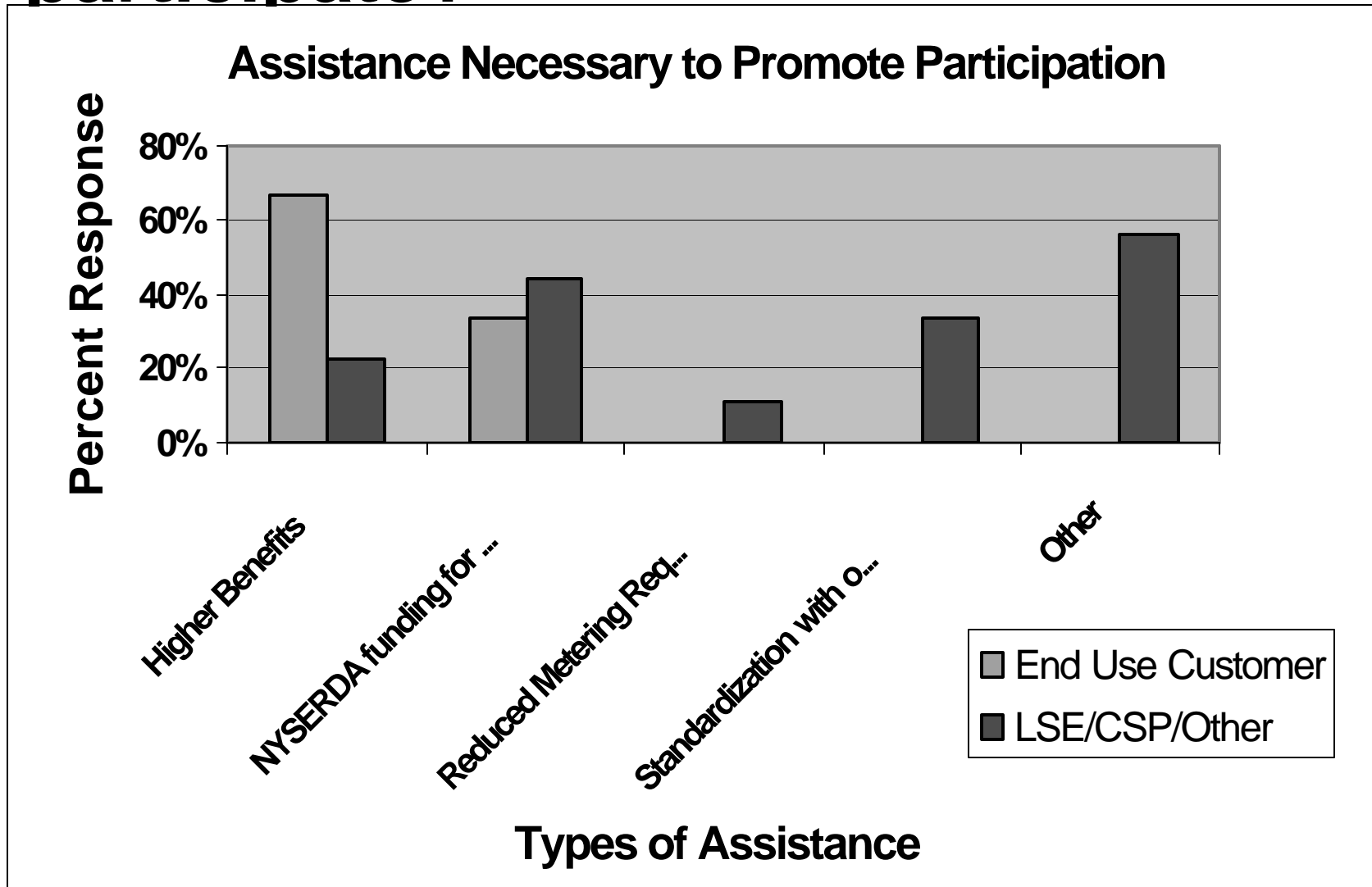
DRAFT – For Discussion Purposes Only

Interest in Participation



DRAFT – For Discussion Purposes Only

What would be needed to participate?



DRAFT – For Discussion Purposes Only

Benefits and Preferences

Simulated Benefits

1. RTDRP as proposed \$75 -520/MW
2. Day-ahead ancillary services \$70- 500/MW
3. RTDRP plus energy payment \$4,000-10,000/MW
4. LSE sponsored \$4,000-19,000/MW

Program Preferences

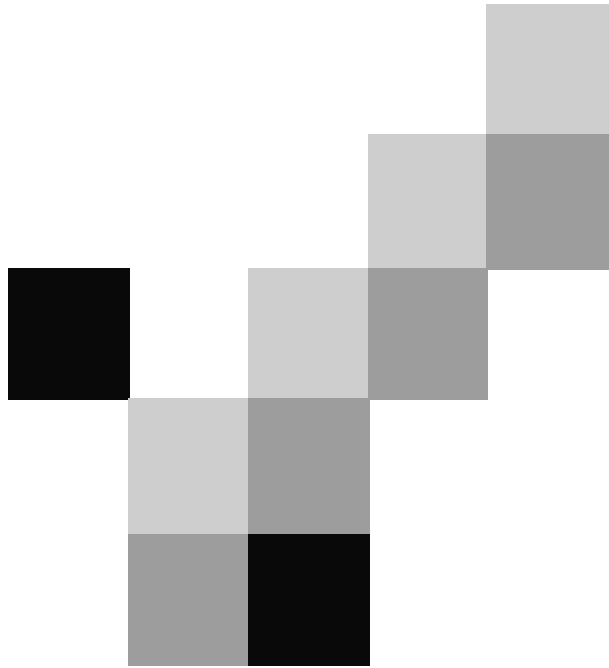
- Customers – favored RTDRP with energy payment and LSE managed load following
- LSE/CSP/Other –
 - some liked RTDRP with energy payment and LSE load following
 - some liked none of the options

DRAFT – For Discussion Purposes Only

What is the appeal?

Most Appealing Features		
	End-Use Customer	LSE/CSP/Other
RTDRP	none	Economically efficient
Day-Ahead Ancillary Services	Should be standardized to other ISO programs	Economically efficient
LSE-Sponsored Program	Should be standardized to other ISO programs Might work with other ISO DR programs	Economically efficient
RTDRP with Energy Paymnet	Should be standardized to other ISO programs Might work with other ISO DR programs	Economically efficient

DRAFT – For Discussion Purposes Only



2003 DR Program Evaluation



PRL Program Evaluation 2003

- **DADRP market impacts** – added deadweight loss estimates to support social welfare benefit/cost assessment
- **EDRP/ICAP impacts** – quantifying the value of curtailments to the system rebuild process
- **New product evaluation** – assessed customer interest in RTDRP
- **Impacts of new provisions to programs**
 - Uncoupling of ICAP/SCR and EDRP
 - ICAP/SCR minimum payment nomination, \$500 cap
 - DADRP \$50/MWH price floor
- **DADRP efficacy** – should the NYISO incorporate DADRP or some variation into its RTS? Utilizing results of NMPC survey, success of alternative day-ahead programs, benefits from these types of programs