

FERC Order 825 - Economic Demand Response

Edward Rich
Sr. Analyst, Market Settlements Development
Demand Response Subcommittee
February 22, 2017



- Net Benefits Threshold: A monthly price which represents the price point at which an economic demand reduction is considered to be of benefit.
- Net Benefits Test: The comparison of the applicable real-time locational marginal price vs. the Net Benefits Threshold.

- PJM Settlements will calculate the Actual MWh Relief the same way it is calculated today, and then evenly distribute the Actual MWh Relief over all intervals for which the resource was dispatched during the hour.
 - For each interval where the resource was dispatched:
 - Flat Profile MW = Actual MWh Relief * (12 / number of intervals dispatched within the hour)

	Customer Baseline	5.000	
	Metered Load	2.500	
	Loss Factor	1.0125	
	Marginal Loss Factor	0.125	
	Actual MWh Relief	2.215	
Hour	Interval	Dispatch Flag	Flat Profile MW
8/8/2016 09	1	0	0
8/8/2016 09	2	0	0
8/8/2016 09	3	1	4.43
8/8/2016 09	4	1	4.43
8/8/2016 09	5	1	4.43
8/8/2016 09	6	1	4.43
8/8/2016 09	7	1	4.43
8/8/2016 09	8	1	4.43
8/8/2016 09	9	0	0
8/8/2016 09	10	0	0
8/8/2016 09	11	0	0
8/8/2016 09	12	0	0

$$\text{Flat Profile MW} = 2.215 \text{ MWh} * (12 / 6) = 4.43 \text{ MW}$$

- The Economic Demand Response Credit will be calculated on a 5-minute basis, comparing the Net Benefit Threshold to the real-time 5 minute locational marginal price.
 - If Net Benefit Threshold \leq real-time 5 minute LMP
 - Credit = (Flat Profile MW * 5-minute LMP) / 12
 - If Net Benefit Threshold $>$ real-time 5 minute LMP
 - Credit = \$0



Net Benefit Test Example

Interval	Dispatched	MW Distribution	LMP	Net Benefits Threshold	LMP * MW	(LMP * MW) / 12
1	0	0	\$ 26.00	23.2425	\$ -	\$ -
2	0	0	\$ 28.00	23.2425	\$ -	\$ -
3	1	8.4684	\$ 30.00	23.2425	\$ 254.05	\$ 21.17
4	1	8.4684	\$ 24.00	23.2425	\$ 203.24	\$ 16.94
5	1	8.4684	\$ 20.00	23.2425	\$ -	\$ -
6	1	8.4684	\$ 21.00	23.2425	\$ -	\$ -
7	1	8.4684	\$ 23.00	23.2425	\$ -	\$ -
8	1	8.4684	\$ 27.00	23.2425	\$ 228.65	\$ 19.05
9	1	8.4684	\$ 25.00	23.2425	\$ 211.71	\$ 17.64
10	1	8.4684	\$ 23.00	23.2425	\$ -	\$ -
11	1	8.4684	\$ 24.00	23.2425	\$ 203.24	\$ 16.94
12	1	8.4684	\$ 25.00	23.2425	\$ 211.71	\$ 17.64
Reduction MW	7.057					
DR Credit	\$ 109.38					
Reduction MW represents the Average MW Reduction for all Registrations on 8/8/2016 3:00 PM EST						
Net Benefits Threshold is actual threshold for August 2016						