GREEN MOUNTAIN POWER CORPORATION

Analysis of Monthly Capacity Benefit of EV Charger Control

Year	FCM ($/kW-yr) Adjusted for Value Lag	RNS ($/kW-yr) Adjusted for Value Lag
1	$ -	$ 120.18
2	32.41	126.26
3	49.75	131.13
4	46.13	135.85
5	47.06	140.40
6	54.77	144.97
7	60.70	149.68
8	61.91	154.54
9	63.15	159.57
10	64.41	164.75
WACC	6.24%	6.24%
NPV	$ 328.95	$ 1,021.23
Levelized $/kW-yr	$ 45.20	$ 140.33
Loss Factor to Input	8.9%	8.9%
Reserve Margin	35.0%	0.0%
Levelized $/kW-yr	$ 66.46	$ 152.82
EV Charge Connected Load (kW)	5.250	5.250
Peak Coincidence Factor	7.20%	14.09%
Coincident kW (kW)	0.378	0.740
Availability of Wi-Fi Communication	95.0%	95.0%
Available Coincident kW (kW)	0.359	0.703
Accuracy of Peak Prediction	100.0%	90.0%
Expected Curtailment kW (kW)	0.359	0.632
		Total
Value of Curtailment (per year)	$ 23.87	$ 96.66 $ 120.53
Value of Curtailment (per month)		$ 10.04
Share of Value with EV Participant		100%
Monthly Capacity Benefit to Participant		**$ 10.04**

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Analysis of Monthly Energy Benefit of EV Charger Load Shape vs Rate 1

2017 Hourly Rate 1 Load shape multiplied by 2017 Hourly LMP ($/kWh)	$ 0.03709
24-hour EV Charger Load shape multiplied by 2017 Hourly LMP ($/kWh)	$ 0.03374
Difference between Energy value of load shapes ($/kWh)	$ 0.00335
Loss Adjustment to Input	8.9%
Difference between Energy value of load shapes ($/kWh)	$ 0.00365
Monthly EV Charger Energy Use	318
Energy Benefit of EV Charger Load Shape vs Rate 1 Load Shape (per month)	$ 1.16
Share of Value with EV Participant	100%
Energy Benefit of EV Charger to Participant (per month)	**$ 1.16**

EV kWh/mo.		318
Customer EV Discount (FCM/RNS) ($/mo.)	**$**	**10.04**
Cost-based discount (Capacity) ($/kWh)	$	0.03158
Customer EV Discount (LMP) ($/mo.)	**$**	**1.16**
Cost-based discount (Energy) ($/kWh)	$	0.00365
Total Cost-Based EV Discount ($/mo.)	**$**	**11.20**
Total Cost-Based EV Discount ($/kWh)	$	0.03523

CASE 1: EV Charging Remains Uncontrolled on Rate 1

	Monthly Billing Units	Rate 1 Rates	Monthly Bill
Residual Household			
Customer Charge	30	0.493	$ 14.79
Peak kWh	178	0.16893	$ 30.07
OffPeak kWh	372	0.16893	$ 62.84
			$ 107.70
		Rate 1	
EV Charger		Rates	
Peak kWh	0	0.16893	$ -
OffPeak kWh	318	0.16893	$ 53.72
			$ 53.72
Total Bill Including EV Charger			$ 161.42

CASE 2: Cost-Based Metered EV Rate

	Monthly Billing Units	Rate 1 Rates	Monthly Bill
Residual Household			
Customer Charge	30	0.493	$ 14.79
Peak kWh	178	0.16893	$ 30.07
OffPeak kWh	372	0.16893	$ 62.84
			$ 107.70
		Rate 1-EV	
EV Charger		Rates	
Peak kWh	0	0.13370	$ -
OffPeak kWh	318	0.13370	$ 42.52
			$ 42.52
			$ 150.22
Savings attributed to EV on Rate 1EV ==>			**$ (11.20)**

Note1: This is a cost-based discount.

CASE 3: Whole house conversion to TOU Rate 11

	Monthly Billing Units	Rate 11 Rates	Monthly Bill
Residual Household			
Customer Charge	30	0.652	$ 19.56
Peak kWh	178	0.26825	$ 47.75
OffPeak kWh	372	0.11434	$ 42.53
			$ 109.84
		Rate 11	
EV Charger		Rates	
Peak kWh	24	0.26825	$ 6.31
OffPeak kWh	294	0.11434	$ 33.67
			$ 39.98
			$ 149.82
Savings attributed to EV on Rate 11 ==>			$ (13.74)
Savings attributed to household on Rate 11 ==>			$ 2.14
			$ (11.60)

Note1: Customers can create additional savings by shifting non-EV load to off-peak periods.

Note2: Customer EV use on Rate 11 is slightly over-compensated compared to the value of avoiding capacity and energy.

Note3: Customer has an opportunity to create more savings by shifting all EV energy to off peak. $ (3.62)

CASE 4: Cost-Based Metered TOU EV Rate

	Monthly Billing Units	Rate 1 Rates	Monthly Bill
Residual Household			
Customer Charge	30	0.493	$ 14.79
Peak kWh	178	0.16893	$ 30.07
OffPeak kWh	372	0.16893	$ 62.84
			$ 107.70
		Rate EV-TOU	
EV Charger		Rates	
Peak kWh	40	0.16893	$ 6.82
OffPeak kWh	278	0.12857	$ 35.69
			$ 42.52
			$ 150.22
Savings attributed to EV on Rate EV-TOU ==>			**$ (11.20)**

Note1: No opportunity for additional savings on whole house TOU rate.

Note3: Customer has an opportunity to create more savings by shifting all EV energy to off peak. $ (1.63)