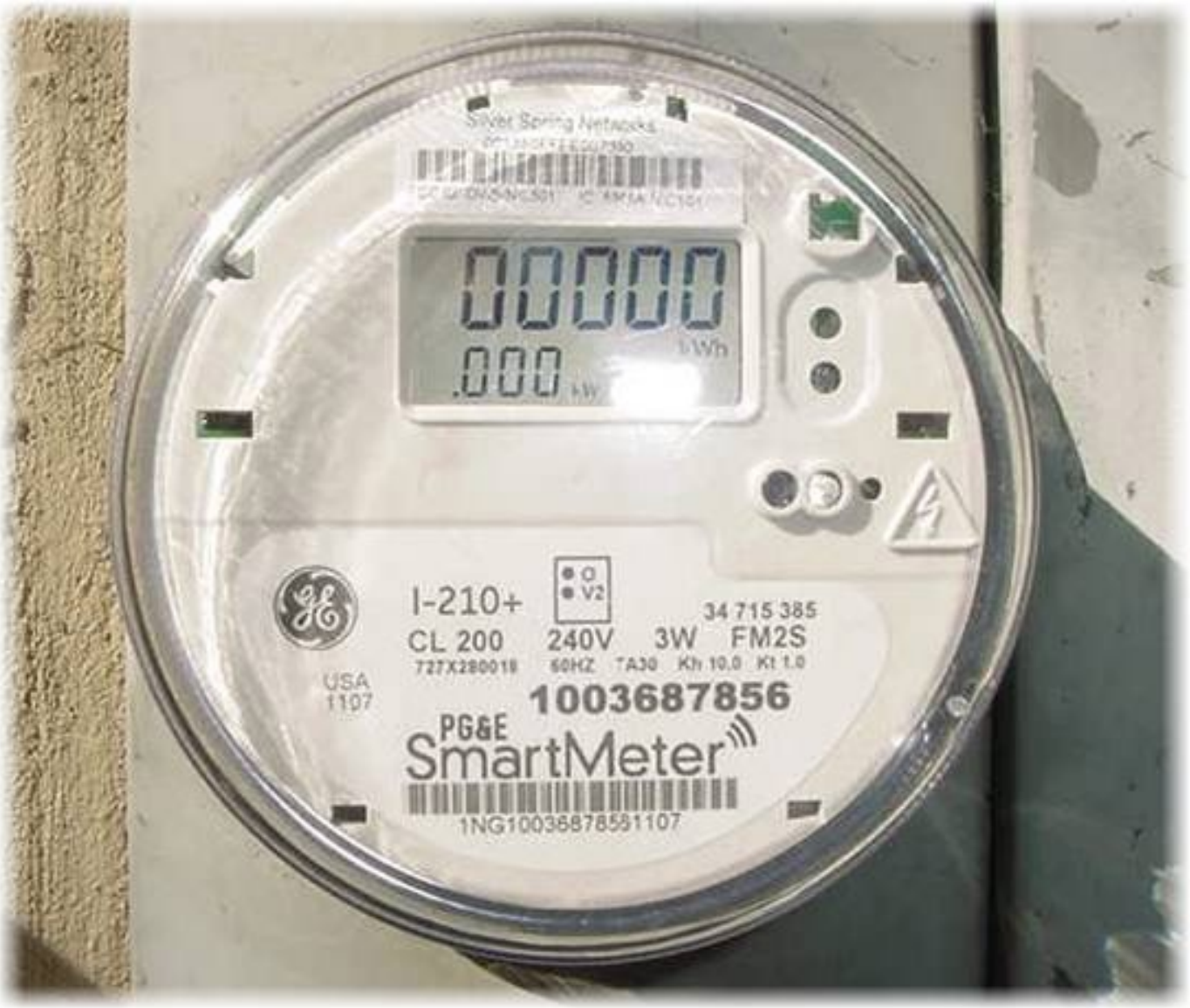
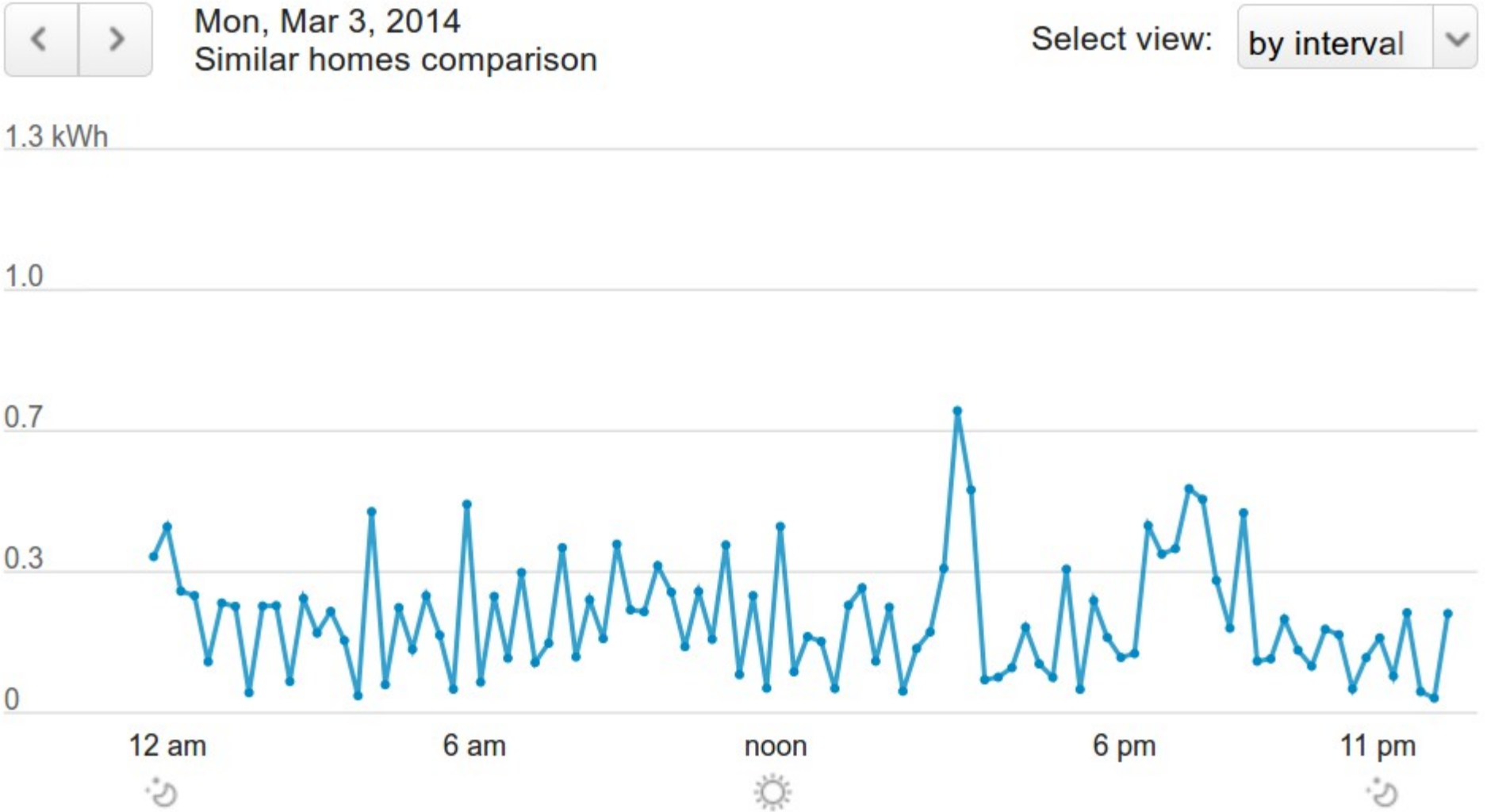
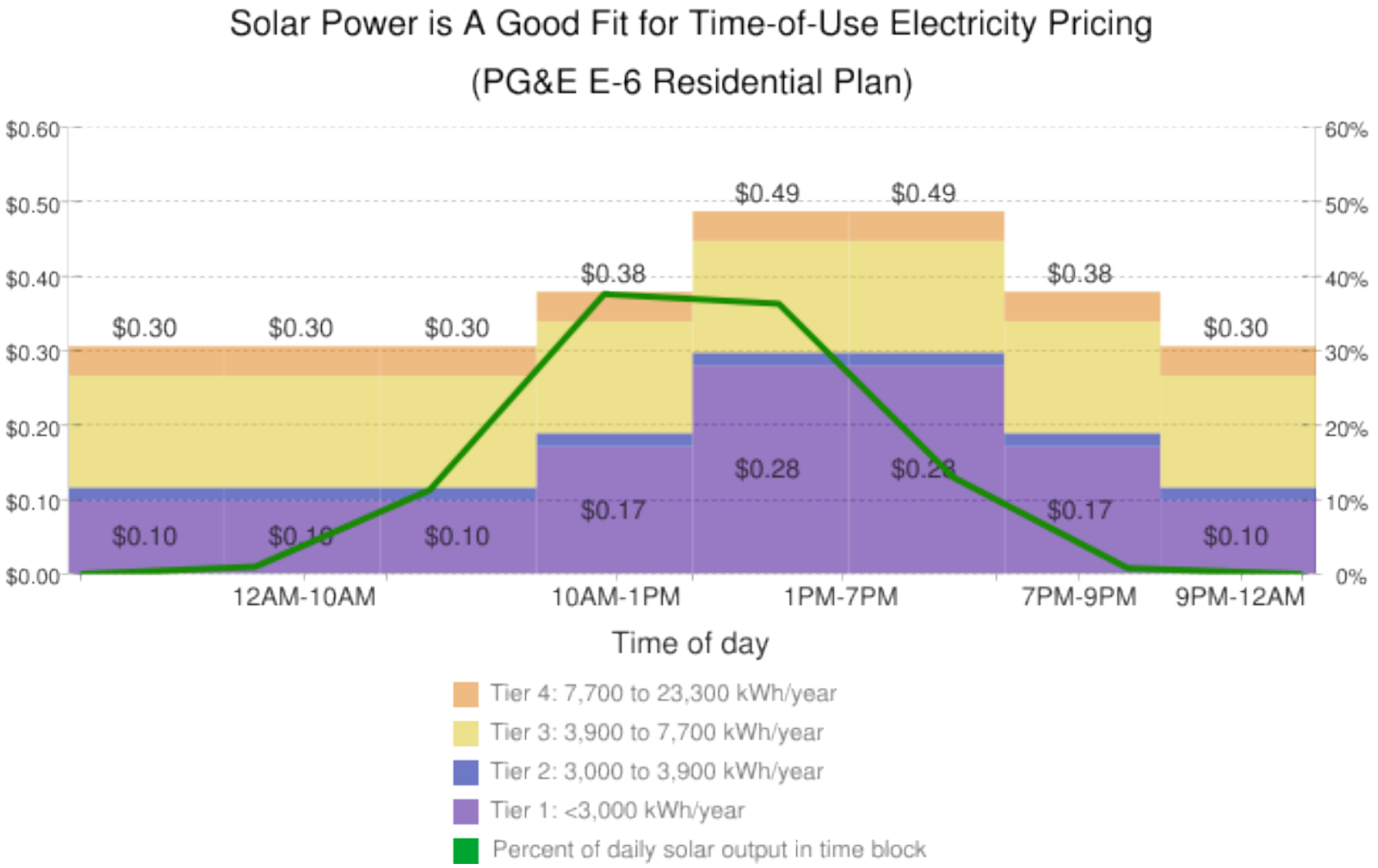
How Smart Meters Can Ruin Distributed Generation

By Daniel Roesler
(Playing Devil's Advocate)


00000
kWh
.000
kW
I-210+
V2
34 715 385
CL 200
240V
3W
FM2S
727X280018
60HZ
7A30
Kh 10.0
Kt 1.0
USA
1107
1003687856
PG&E
SmartMeter
1NG10036878561107


Mon, Mar 3, 2014
Similar homes comparison
Select view:
by interval
1.3 kWh
1.0
0.7
0.3
0
12 am
6 am
noon
6 pm
11 pm


Solar Power is A Good Fit for Time-of-Use Electricity Pricing
(PG&E E-6 Residential Plan)
$0.60
$0.50
$0.40
$0.30
$0.20
$0.10
$0.00
60%
50%
40%
30%
20%
10%
0%
$0.30
$0.30
$0.30
$0.38
$0.49
$0.49
$0.38
$0.30
$0.10
$0.10
$0.10
$0.17
$0.28
$0.28
$0.17
$0.10
12AM-10AM
10AM-1PM
1PM-7PM
7PM-9PM
9PM-12AM
Time of day
Tier 4: 7,700 to 23,300 kWh/year
Tier 3: 3,900 to 7,700 kWh/year
Tier 2: 3,000 to 3,900 kWh/year
Tier 1: <3,000 kWh/year
Percent of daily solar output in time block

TOTAL RATES

	Secondary Voltage	Primary Voltage	Transmission Voltage
Total Customer/Meter Charge Rates			
Customer Charge Mandatory E-19 ($ per meter per day)	$19.71253	$32.85421	$59.13758
Customer Charge Voluntary E-19:			
Customer Charge with SmartMeter™ ($ per meter per day)	$4.59959	$4.59959	$4.59959
Customer Charge Rate V ($ per meter per day)	$4.77700	$4.77700	$4.77700
Customer Charge Rate W ($ per meter per day)	$4.63507	$4.63507	$4.63507
Customer Charge Rate X ($ per meter per day)	$4.77700	$4.77700	$4.77700
Optional Meter Data Access Charge ($ per meter per day)	$0.98563	$0.98563	$0.98563
Total Demand Rates ($ per kW)			
Maximum Peak Demand Summer	$16.78	$16.67	$15.28
Maximum Part-Peak Demand Summer	$3.87	$3.56	$3.38
Maximum Demand Summer	$12.24	$9.72	$5.95
Maximum Part-Peak Demand Winter	$0.21	$0.38	$0.00
Maximum Demand Winter	$12.24	$9.72	$5.95
Total Energy Rates ($ per kWh)			
Peak Summer	$0.15406 (I)	$0.14164 (I)	$0.09021 (I)
Part-Peak Summer	$0.10612 (I)	$0.10000 (I)	$0.08604 (I)
Off-Peak Summer	$0.07472 (I)	$0.07520 (I)	$0.07149 (I)
Part-Peak Winter	$0.09975 (I)	$0.09531 (I)	$0.08456 (I)
Off-Peak Winter	$0.07832 (I)	$0.07817 (I)	$0.07303 (I)
Power Factor Adjustment Rate ($/kWh/%)	$0.00005	$0.00005	$0.00005

TOTAL RATES

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Example – Normal User

	Usage		Tariff		Total
Monthly Usage:	1,000 kWh	x	$0.15/kWh	=	$150
Peak Demand:	10kW	x	$10/kW	=	$100
Fixed Fee:			$50/mo	=	$50
				Total Bill	$300

Example – New Tariff

	Usage		Tariff		Total
Monthly Usage:	1,000 kWh	x	$0.05/kWh	=	$50
Peak Demand:	10kW	x	$20/kW	=	$200
Fixed Fee:			$50/mo	=	$50
				Total Bill	$300

(No change)

Example – Solar Installed

	Usage	Tariff	Total
Monthly Usage:	0 kWh	x $0.15/kWh =	$0
Peak Demand:	10kW	x $10/kW =	$100
Fixed Fee:		$50/mo =	$50
		Total Bill	$150

(Saves $150)

Example – Solar Installed

	Usage		Tariff		Total
Monthly Usage:	0 kWh	x	$0.05/kWh	=	$0
Peak Demand:	10kW	x	$20/kW	=	$200
Fixed Fee:			$50/mo	=	$50
				Total Bill	$250

(Only saves $50)

Conclusion

Smart meters allow utilities to surgically target distributed generation to make it less economical.