

AE Rate Analysis

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10.26.12

Backstory

- The Local Solar Advisory Committee (LSAC) was formed by the Austin City Council to prepare a strategic plan for solar energy in Austin
- The LSAC requested 2 research pieces from Pecan Street –
 - Best practices review of policies and practices that promote solar adoption
 - Data analysis based on Austin Energy and Pecan Street Data

Set Up for Analysis

Source: Austin Energy

Data Set: Meter reads – All residential PV rebate recipients, Jan 2009 – July 2012

Data Selection:

- Data for Consumption and PV generation were incomplete for these homes
- A complete set of data (12 months of consumption and PV generation) was sought for analysis
- 2010 had the most homes (171) with complete data
- 2010 was a typical year for weather patterns in terms of high and low temps

Analysis Steps

- Data set used – 171 homes with complete data for 2010
- Customers split into 4 quartiles based on Total Consumption
- Old and New AE rate structures applied for each customer for an average month (1/12 of annual)
- Average values recorded for each quartile - PV generation, consumption, and total bill
- All customers had solar PV – analysis conducted to show what customers would have paid with and without solar

Old and New Rate Structures

A simplification of rate structures, showing the basic difference:

Old:

Total Consumption – PV generation = Net from Grid

Net from Grid * Rate = Total Bill

New:

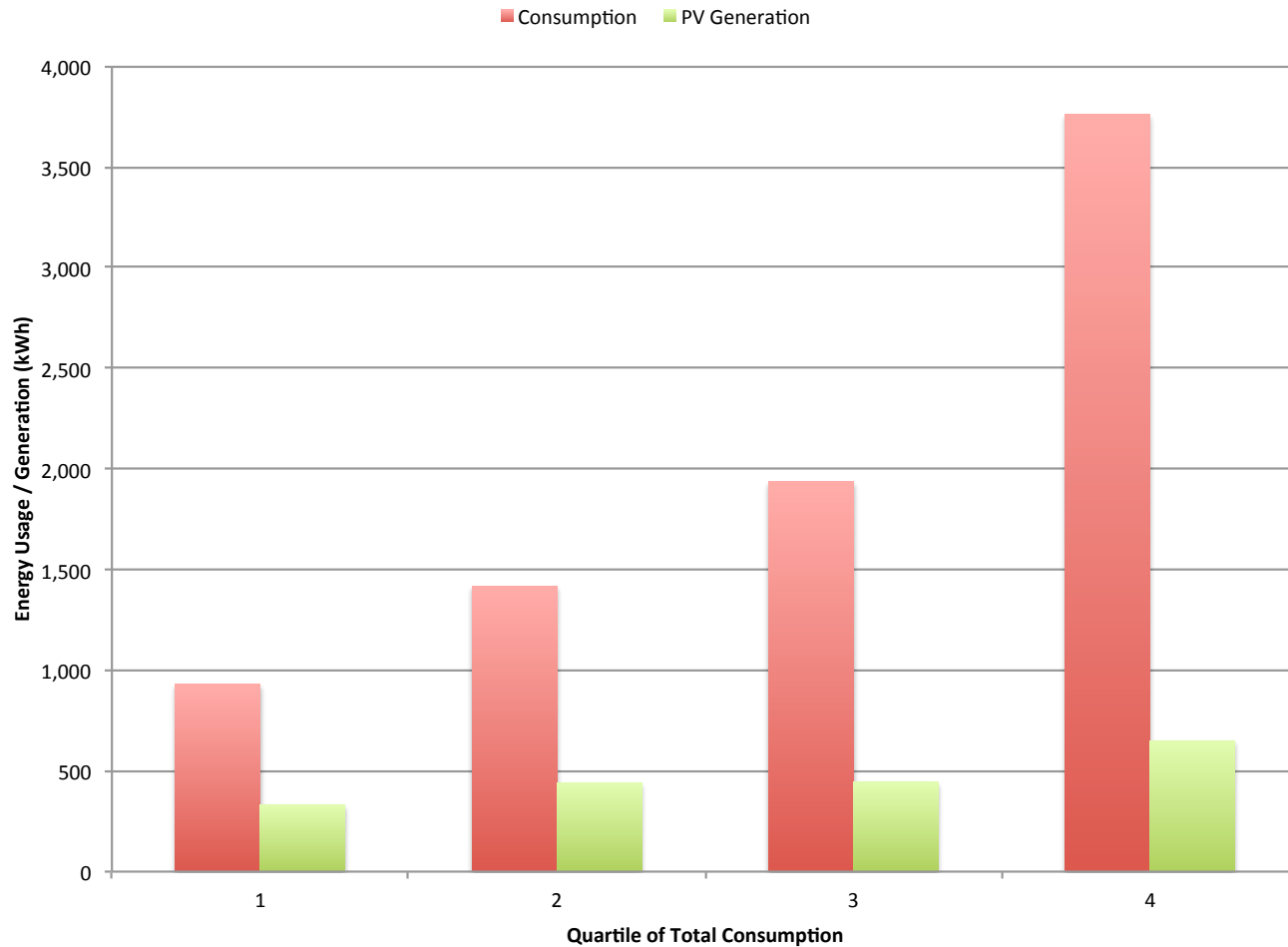
(Total Consumption * Rate) – (PV Generation * Value of Solar Rate) =

Total Bill

Old and New Rate Structures

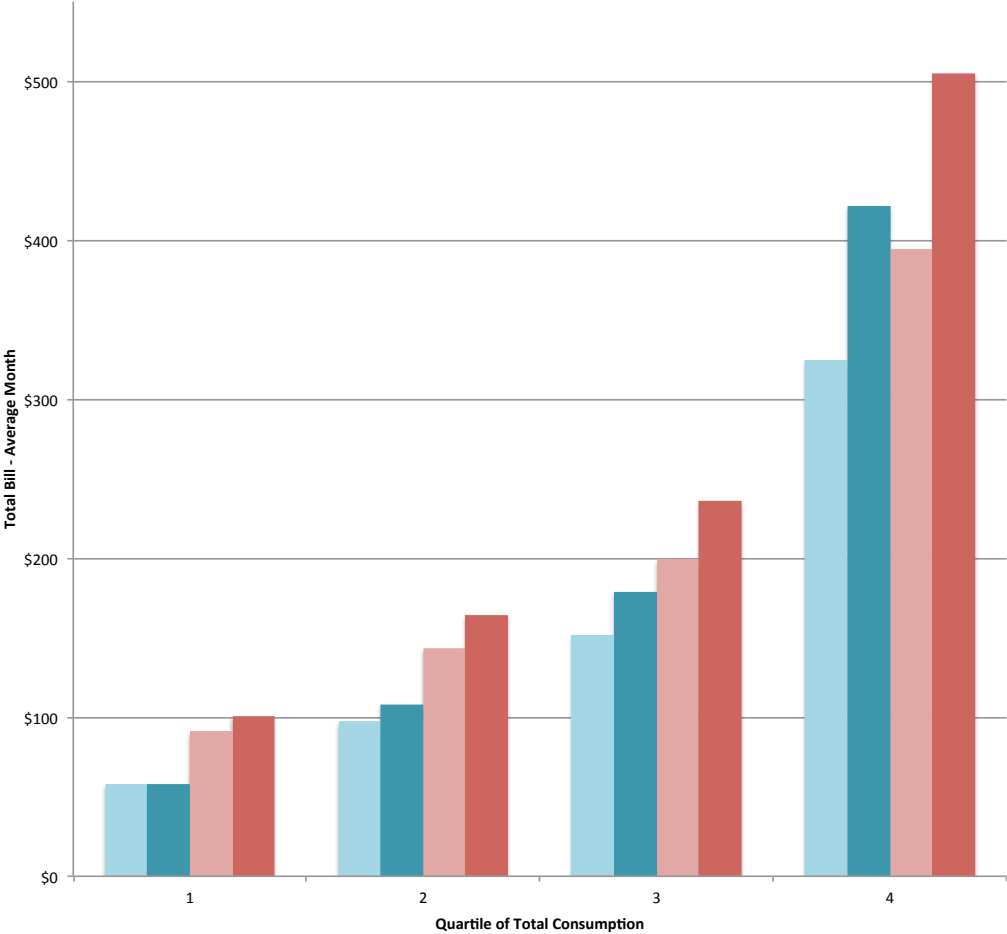
Quartile	1	2	3	4
Total Consumption (kWh)	931	1,419	1,939	3,759
PV Generation (kWh)	333	441	445	650
PV Generation/Total Consumption	0.415	0.352	0.255	0.206
Nameplate Capacity (kW)	3.286	3.552	3.568	4.264
Old Rates – With Solar (\$)	58	97	151	324
New Rates – With Solar (\$)	58	108	179	422
Difference – with solar	0	11	28	98
Old Rates – No Solar (\$)	91	144	199	395
New Rates – No Solar (\$)	101	164	236	505
Difference - no solar	10	20	37	110

Average Monthly Consumption and PV Generation

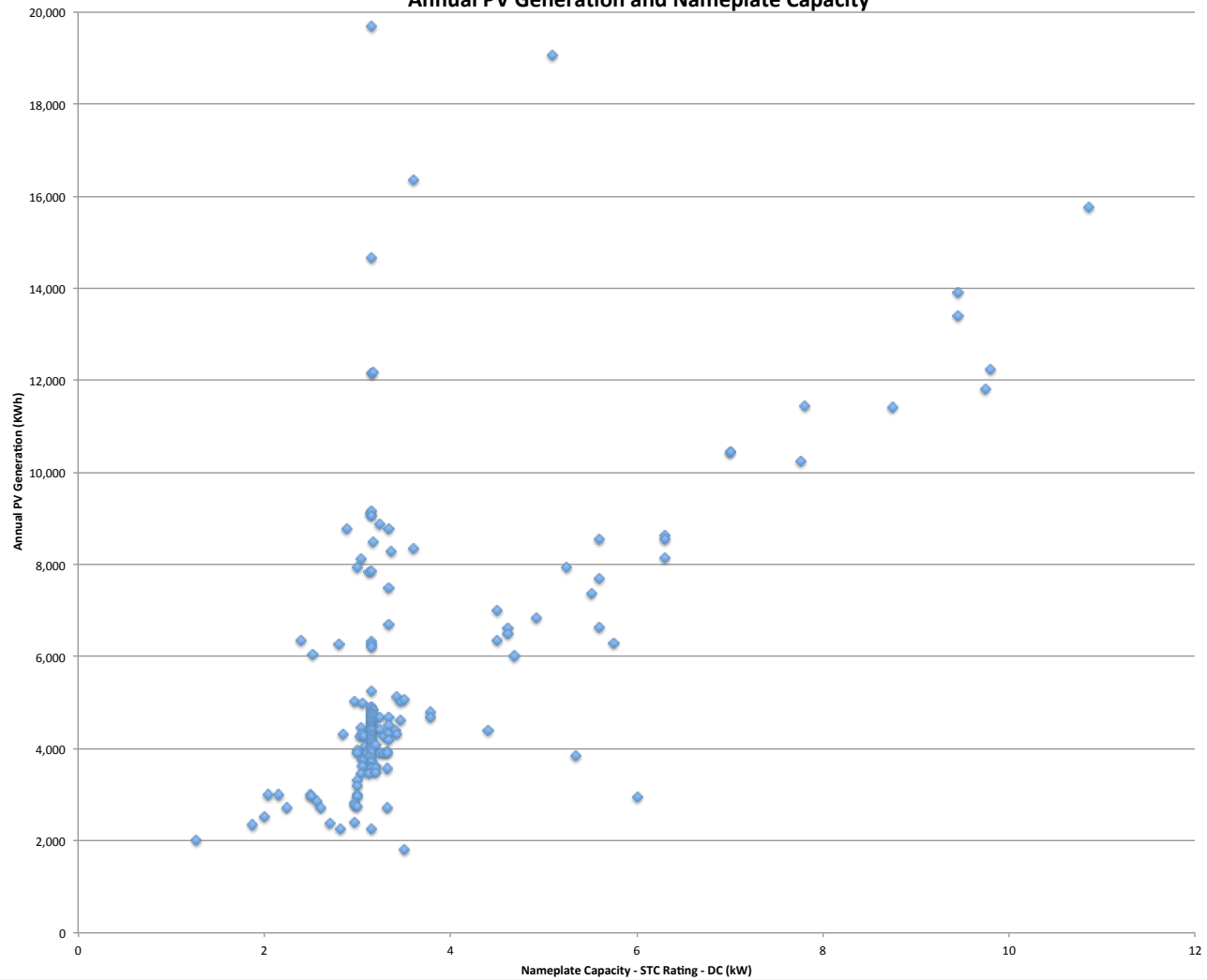


New vs Old Rates by Quartile of Total Consumption

Old Rates - With Solar New Rates With Solar Old Rates - No Solar New Rates - No Solar



Annual PV Generation and Nameplate Capacity



Conclusions

- All measurements based on data set of 171 homes for 2010 – does not take into account changes (lifestyle / home improvement) made to reduce bills
- PV Generation / Consumption increases from first to fourth consumption quartiles
- New rate structure is an increase for all quartiles except for the first quartile in which there is no change
- Lower quartiles are affected less by the rate change
- Top quartile is impacted more, due to the vastly higher consumption
- New rates would have represented more of an increase if these customers did not have solar (by about \$10, regardless of quartile)

Thank You! – Comments & Questions