Item #120516

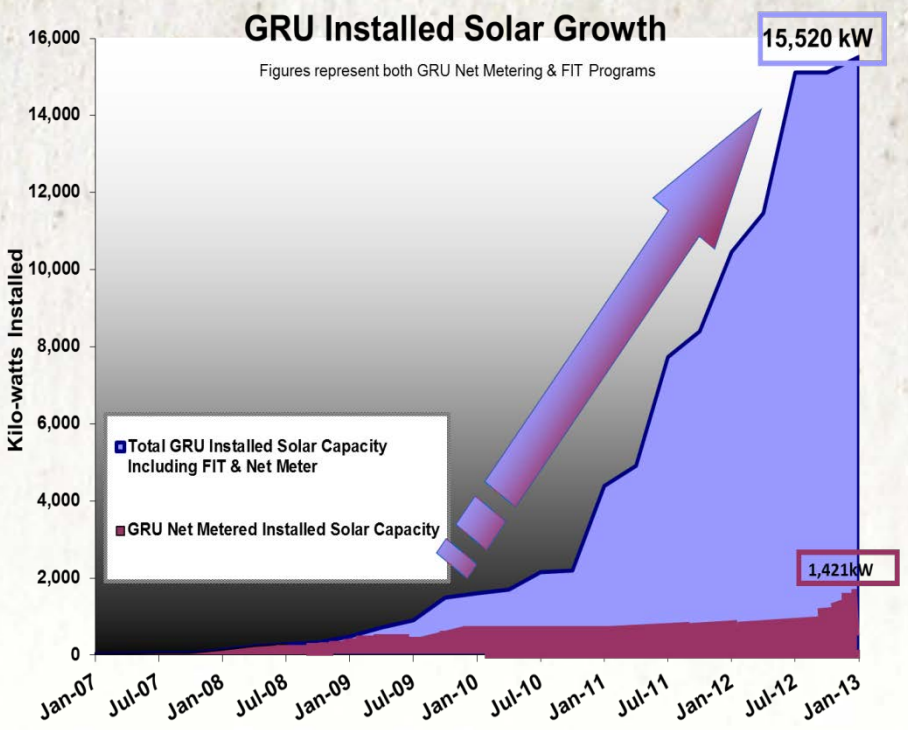
Solar Net Metering

Regional Utilities Committee

4-17-2013

In review…

- Policies developed to lead the market
- Programs implemented successfully
- As designed, markets are changing
- Recommend adjusting programs to reduce subsidization and relieve upward rate pressure



Considerations in advising adjustments

- Upward rate pressures
- Solar costs have been coming down
- Some customers oversizing net metered systems, putting more costs/rate pressure on other customers
- As retail rates increase, net metering costs increase putting additional pressure on rates
- Solar FIT cumulative rate pressure, although at declining cost to the utility

Recommendation

Due to upward rate pressure, the decrease in the cost of solar, and the success of solar in the community:

- Net metering paid at retail fuel adjustment for excess generation monthly

RUC request of staff (2-19-13)

- Come back with a specific “avoided cost rate” recommendation, including an analysis of how this change might affect deployment
- Compare what we do and our recommendation with what other utilities do
- Analyze the GEAC proposal
- Staff to schedule a presentation from the County on an update of the PACE program

Comparing approaches

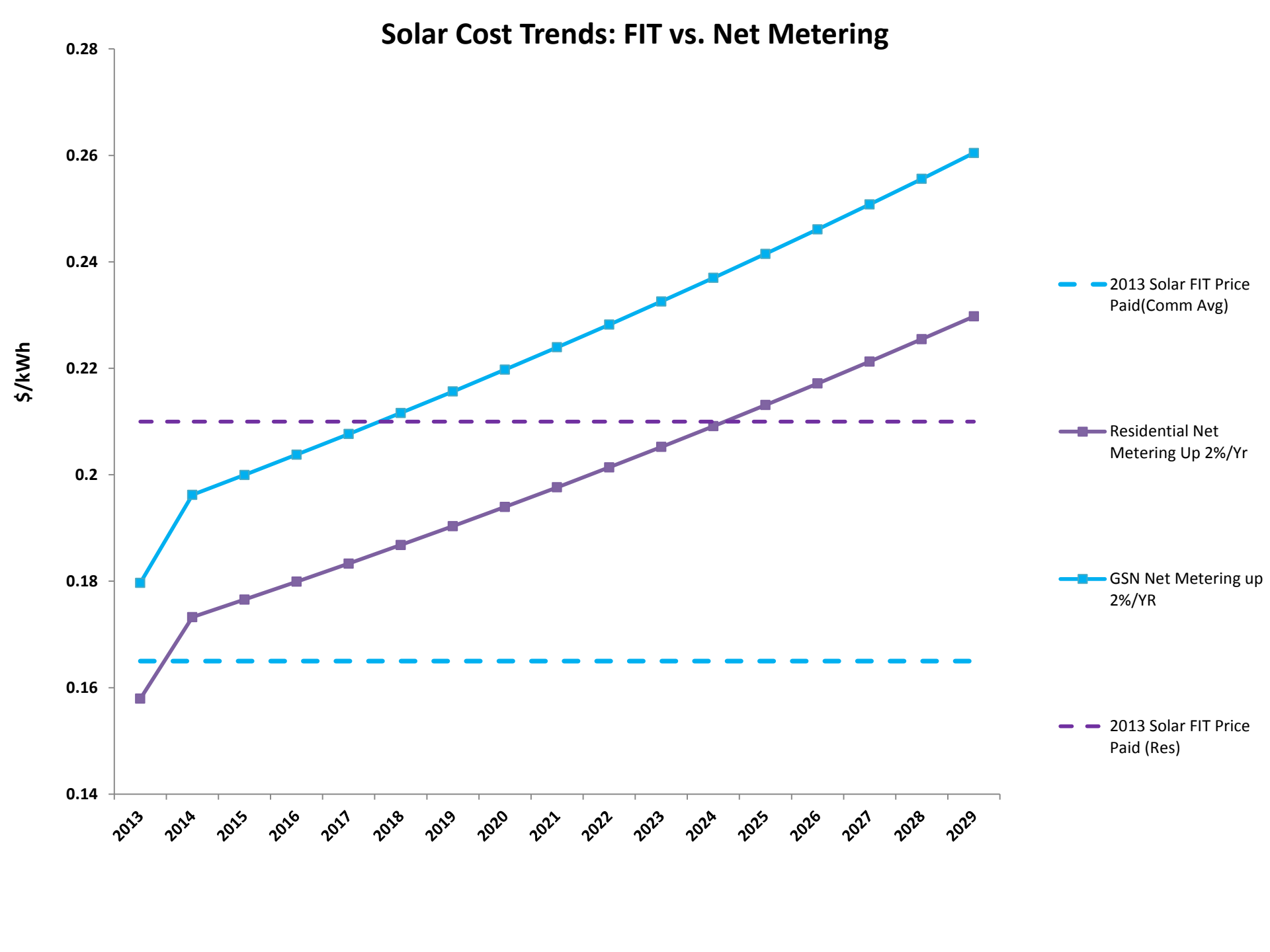
1. Customers without PV
2. GRU Current Net Metering Practice of paying fixed retail credit amount
   - Res: $0.064 + Retail Fuel Adjustment
   - GSN: $0.081 + Retail Fuel Adjustment
3. GRU pay Retail Fuel Adjustment Rate for Excess Energy
   - Res: Retail Fuel Adjustment
   - GSN: Retail Fuel Adjustment
4. GRU Current Practice plus $0.05 adder for all PV production (GEAC proposal)

Net metering

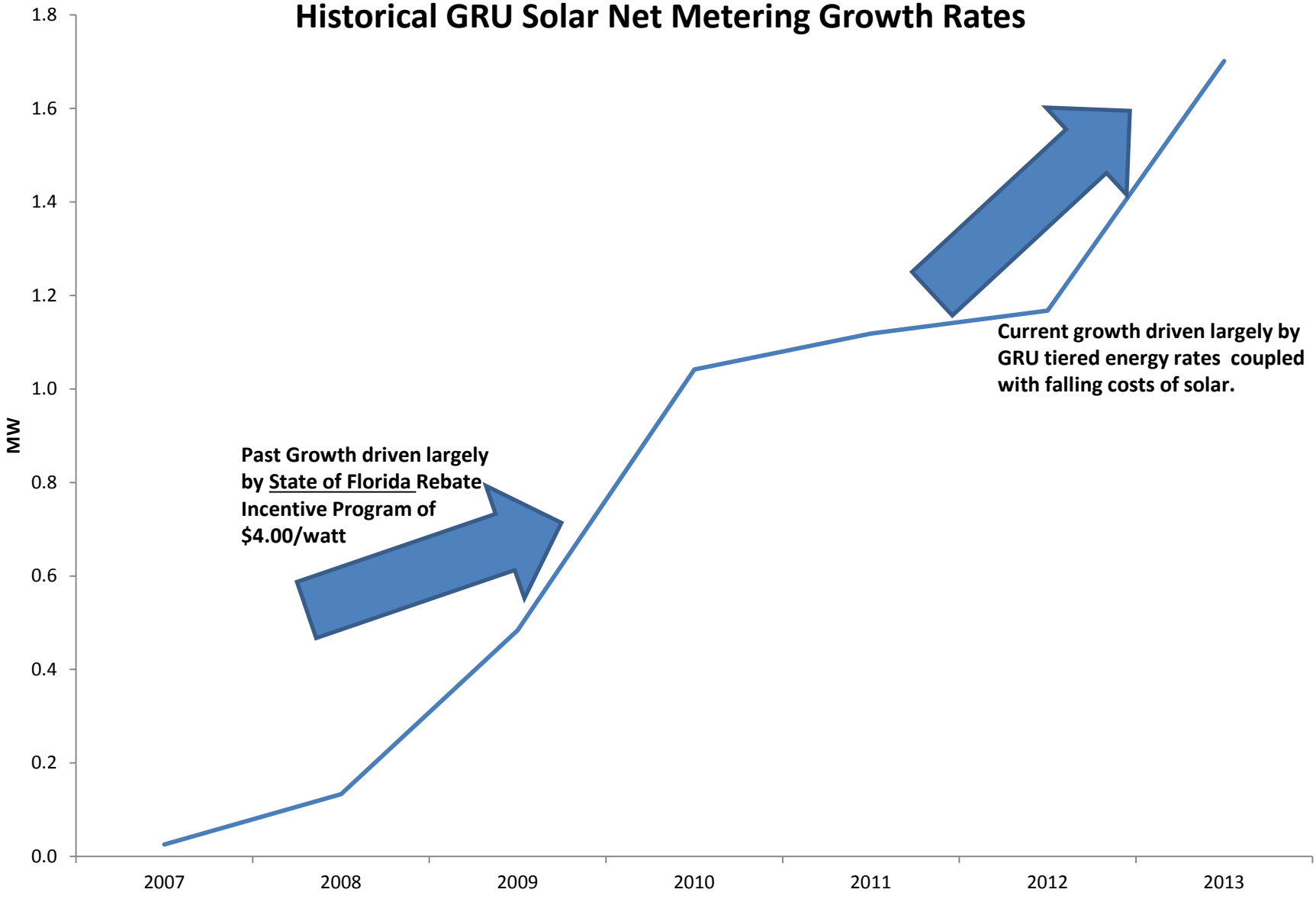
- Helps reduce the amount of energy customers purchase from GRU (sales, tax, surcharge avoided)
- Customers who maximize the energy efficiency of their home or business can benefit from the use of solar

Quantifying the costs and benefits

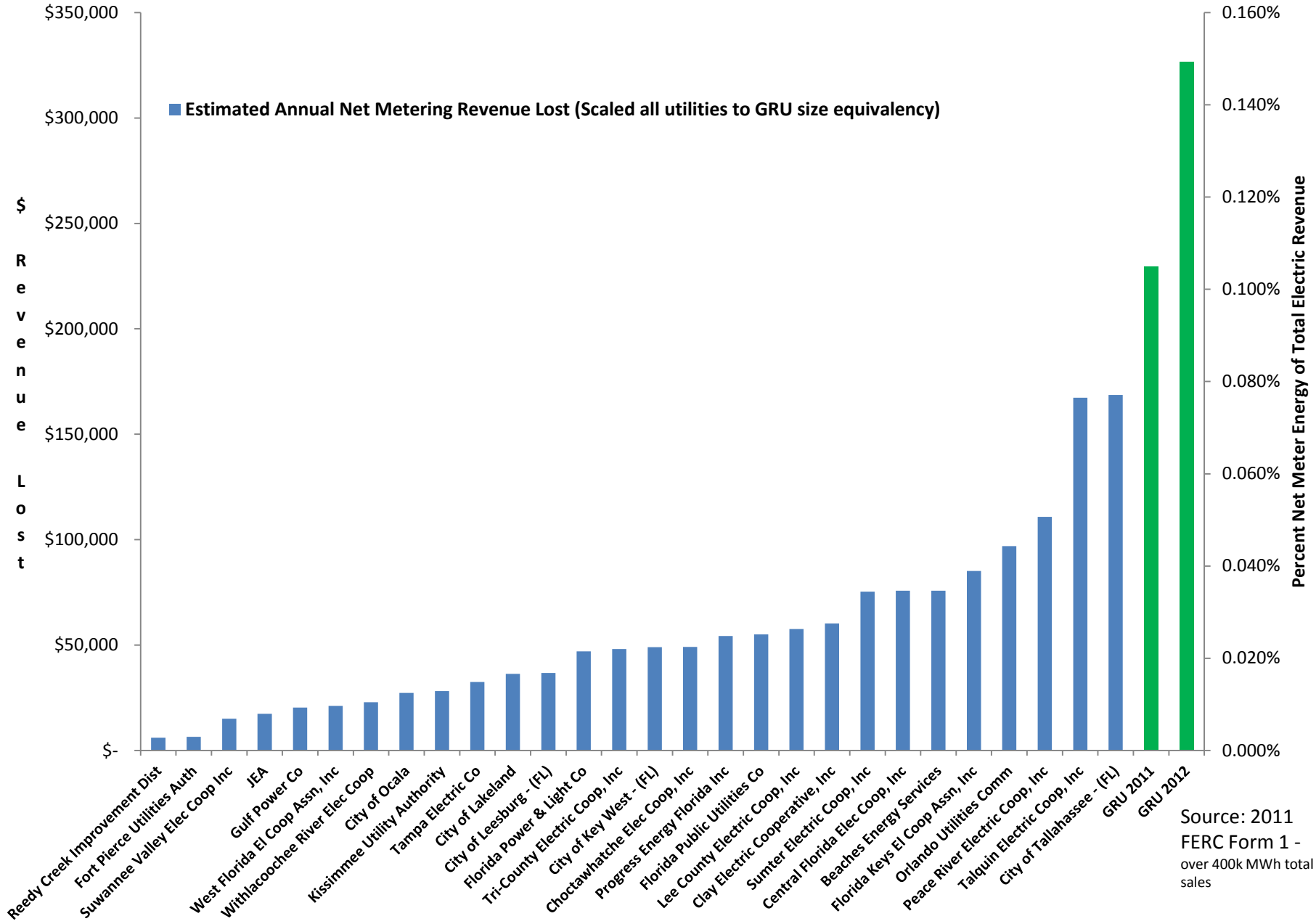
- Net metering customers benefit from avoiding full retail rates (including distribution and transmission), surcharges, sales taxes and utility taxes
- Net metering customers benefit from selling energy to the utility (can't include in planning)
- Net metering customers benefit from energy delivered when they can't produce themselves
- All other customers pay for the benefits net metering customers receive


Solar Cost Trends: FIT vs. Net Metering
$/kWh
0.28
0.26
0.24
0.22
0.2
0.18
0.16
0.14
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2013 Solar FIT Price Paid(Comm Avg)
Residential Net Metering Up 2%/Yr
GSN Net Metering up 2%/YR
2013 Solar FIT Price Paid (Res)

Tallahassee	No generation cap.	No Residential Limit.	Energy credits roll over monthly.	No customer payment for excess credits. Transferred to department.	Customer pays fixed charges every month.
Orlando	No generation cap.	No Residential Limit.	No true-up mechanism.	Customers paid retail rate monthly. Additional program available with $0.05 paid on top of retail rate for approved customers	Customer pays fixed charges every month that **can** be **cancelled by over-generation.**
Jacksonville	Generation cap at 90% of customer's load.		No true-up mechanism.	Customers paid retail rate monthly.	Customer pays fixed charges every month that **can** be **cancelled by over-generation.**
Florida PSC	Generation cap at 90% of customer's load.	Residential limit: 10 KW.	Energy credits roll over monthly.	Avoided Cost paid to customer at year's end for unused credits	Customer pays fixed charges every month.
Portland PSC	No generation cap.	Residential limit: 25 KW.	Energy credits roll over monthly.	No customer payment for excess credits. Transferred to low-income housing.	Customer pays fixed charges every month.
Homestead, Florida	No generation cap.	Residential limit: 10 KW.	Energy credits roll over monthly.	Avoided Cost paid to customer at year's end for unused credits	Customer pays fixed charges every month.
Seattle, Washington	System-wide generation cap at 20MW.	Residential Limit: 100 KW.	Energy credits roll over monthly.	No customer payment for excess credits. Transferred to department.	Customer pays fixed charges every month.
Cheney, Washington	Implied generation cap of customer's load.	Residential limit: 25 KW.	Energy credits roll over monthly.	No customer payment for excess credits. Transferred to department.	Customer pays fixed charges every month.
GRU Current	No generation cap.	No Residential Limit.	No true-up mechanism.	Customers paid retail rate plus fuel adjustment monthly.	Customer pays fixed charges every month that **can** be **cancelled by over-generation.**
GRU Proposed	No generation cap. Policy to be determined.	No Residential Limit.	No energy credit monthly rollover. Excess energy paid out monthly at retail fuel adjustment.	Excess energy paid out monthly at retail fuel adjustment.	Customer pays fixed charges that can be cancelled by monthly excess generation pay out.

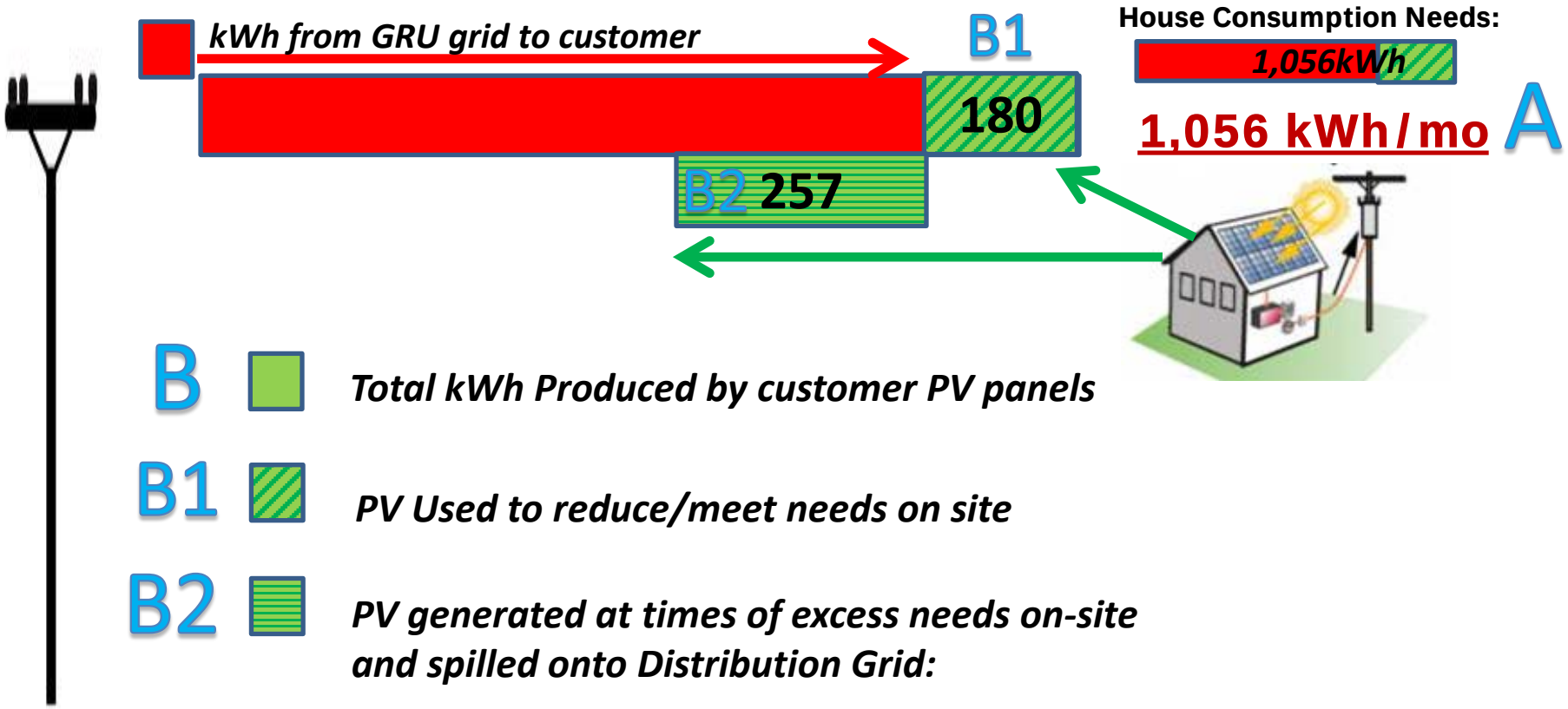

Historical GRU Solar Net Metering Growth Rates
MW
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
2007
2008
2009
2010
2011
2012
2013
Past Growth driven largely by State of Florida Rebate Incentive Program of $4.00/watt
Current growth driven largely by GRU tiered energy rates coupled with falling costs of solar.

Solar Net Metering Saturation among Florida Electric Utilities



Source: 2011 FERC Form 1 - over 400k MWh total sales

Net Metering Illustration – GRU



B — *Total kWh Produced by customer PV panels*

B1 — *PV Used to reduce/meet needs on site*

B2 — *PV generated at times of excess needs on-site and spilled onto Distribution Grid:*

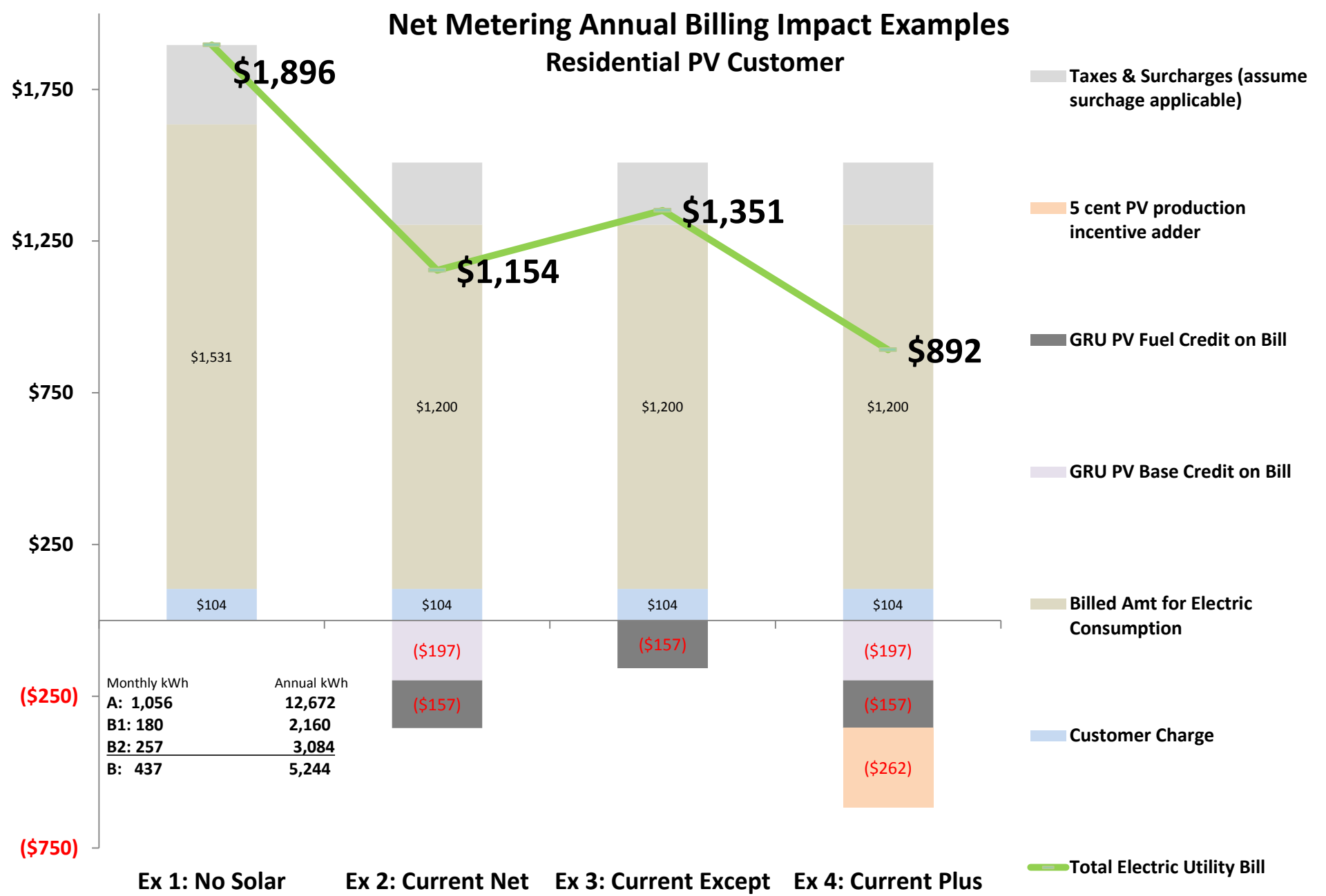
B1 + B2 =

180 257 **437 kWh/mo** B

House Consumption Needs: **1,056 kWh/mo** A

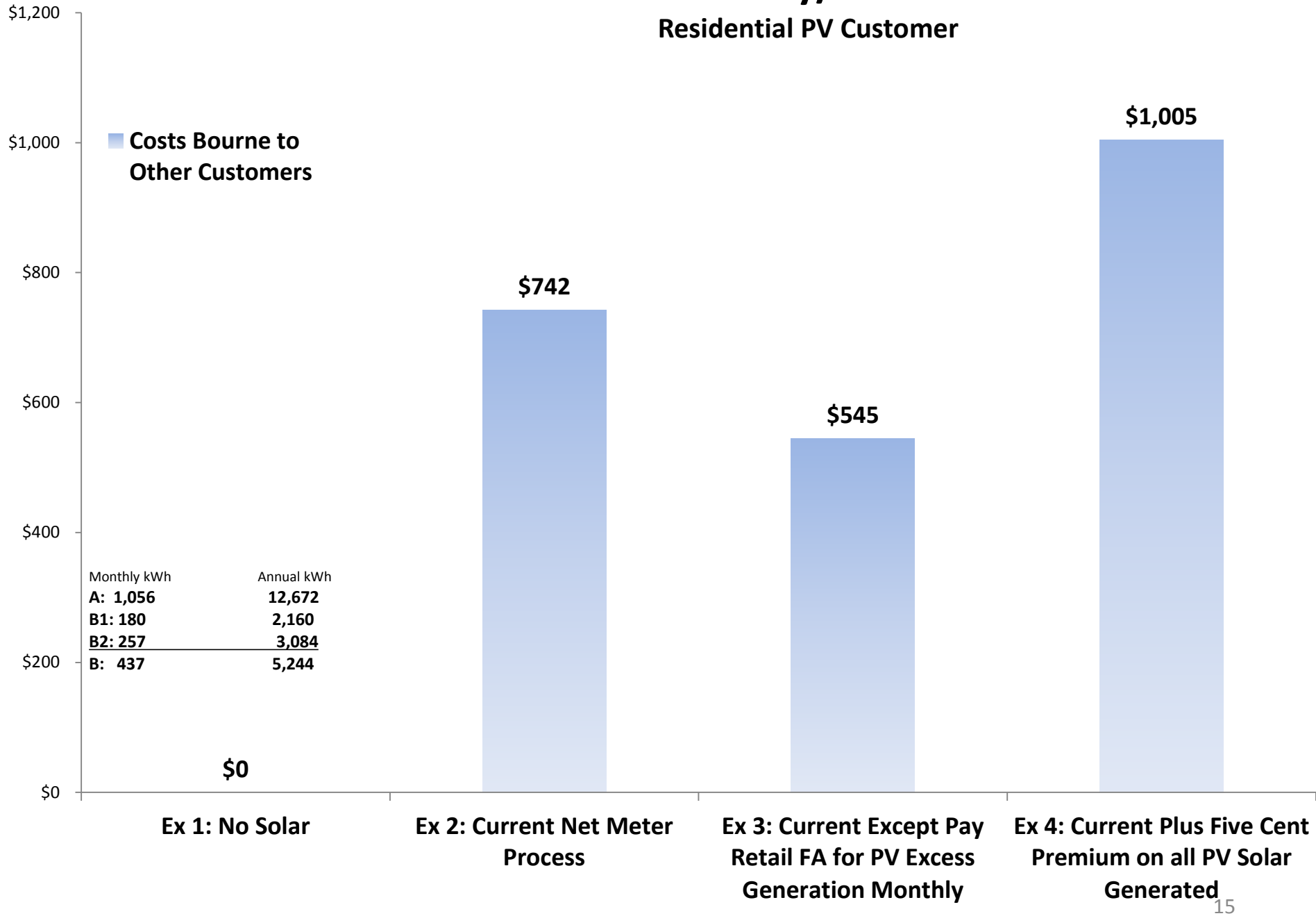
Net Metering Annual Billing Impact Examples

Residential PV Customer



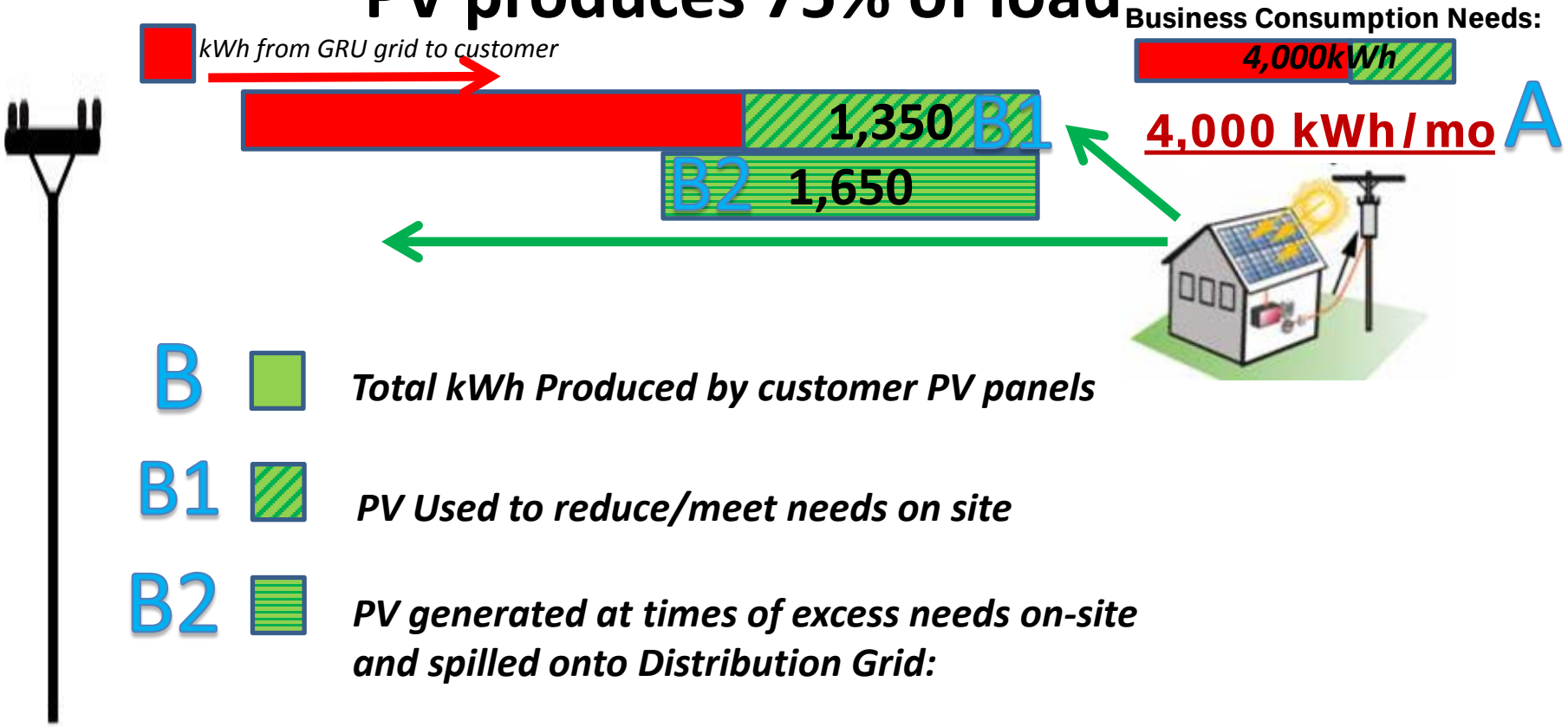
Annual Subsidy/Revenue Loss

Residential PV Customer



Net Metering Illustration – GRU

PV produces 75% of load



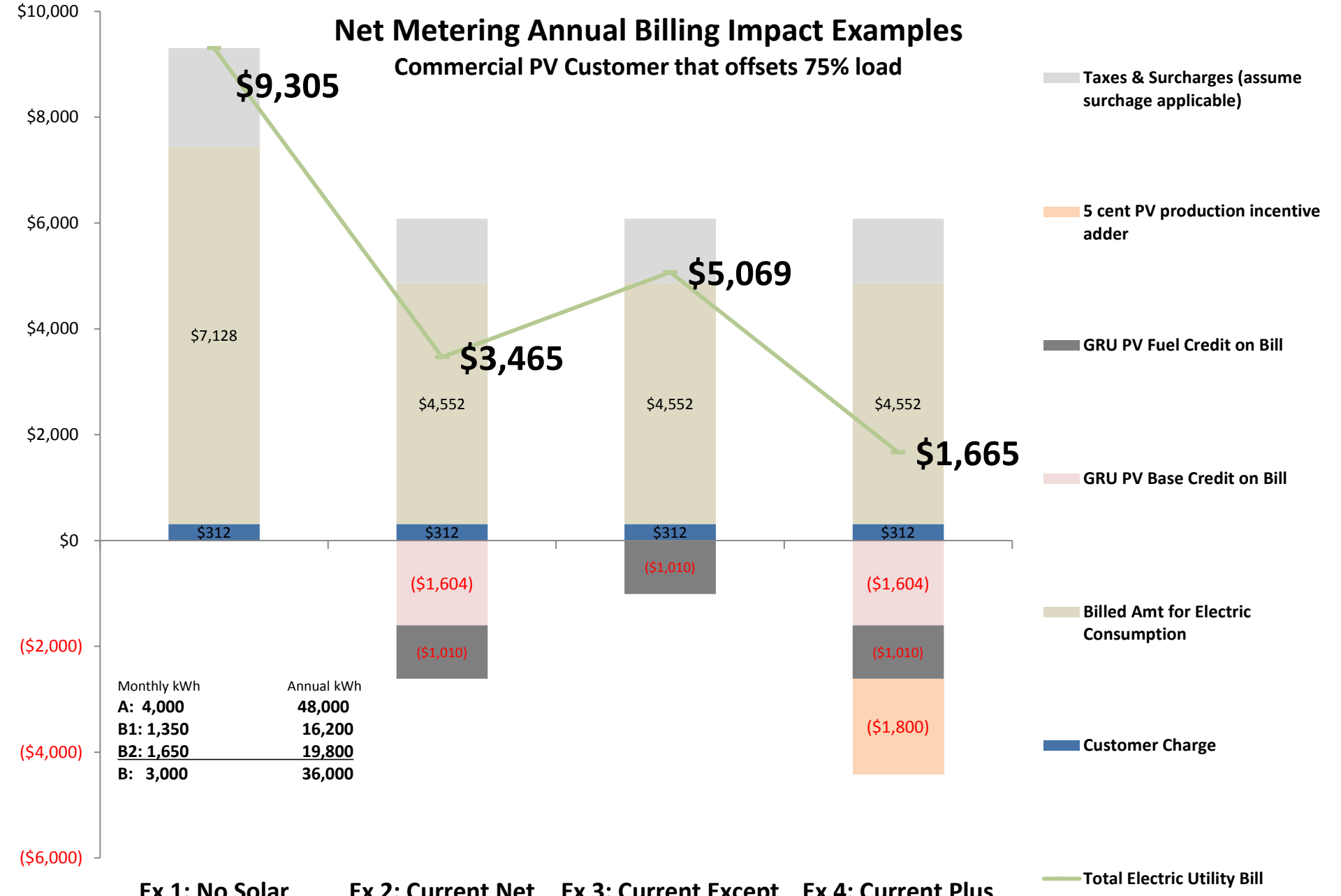
B1 + B2 =

1,350 | 1,650 — 3,000 kWh/mo — B

Business Consumption Needs: 4,000 kWh/mo — A

Net Metering Annual Billing Impact Examples

Commercial PV Customer that offsets 75% load



Ex 1: No Solar

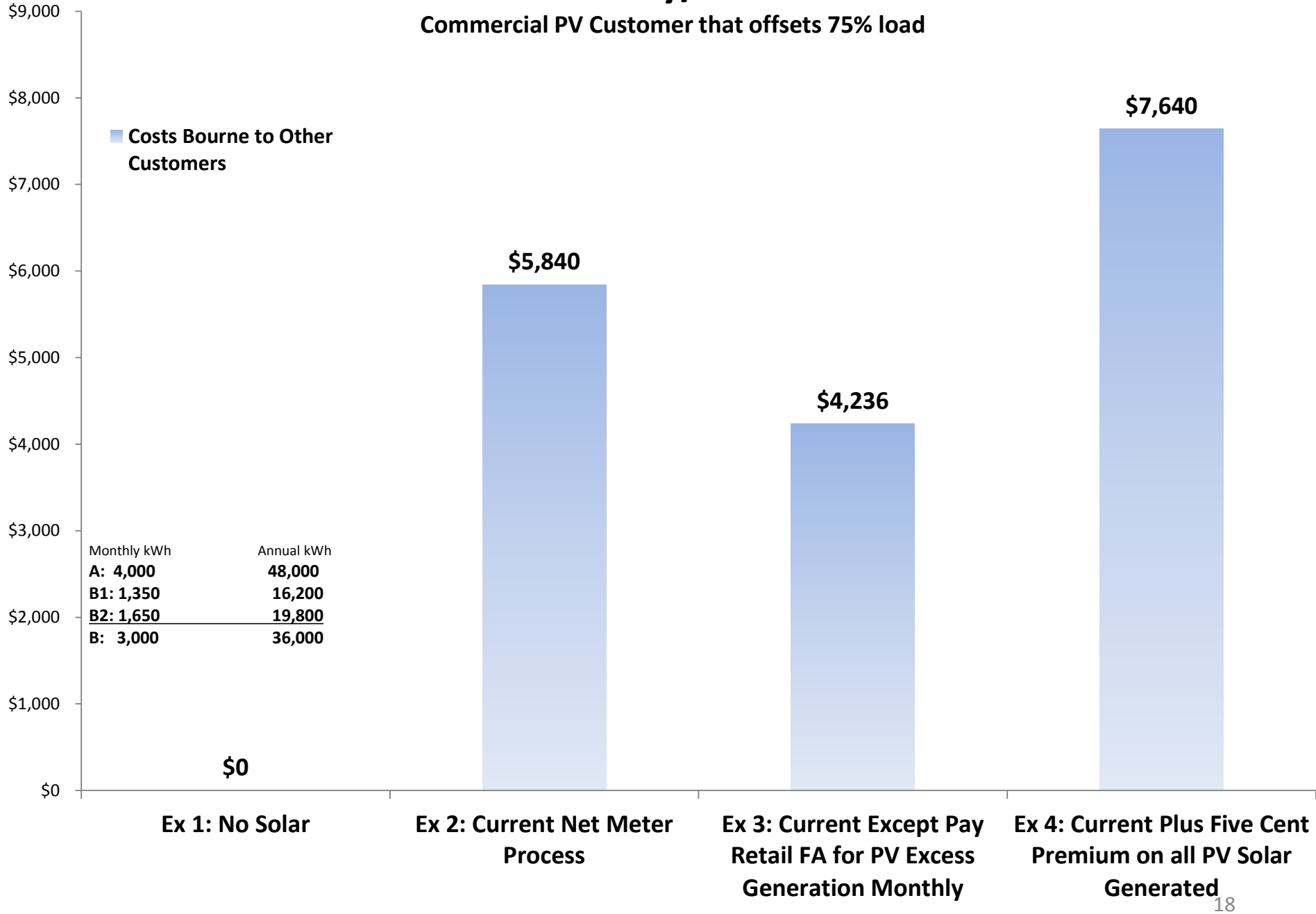
Ex 2: Current Net Meter Process

Ex 3: Current Except Pay Retail FA for PV Excess Generation Monthly

Ex 4: Current Plus Five Cent Premium on all PV Solar Generated

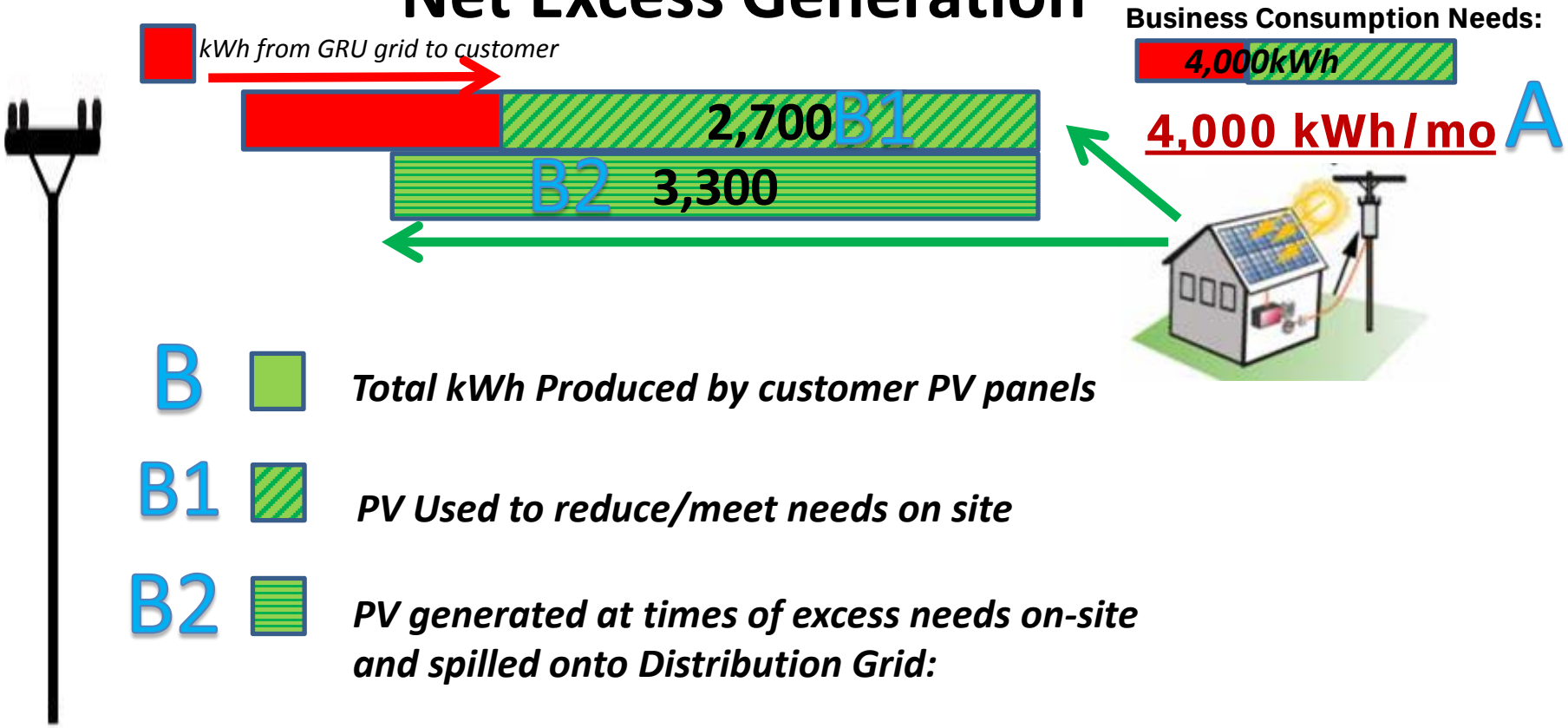
Annual Subsidy/Revenue Loss

Commercial PV Customer that offsets 75% load



Net Metering Illustration – GRU

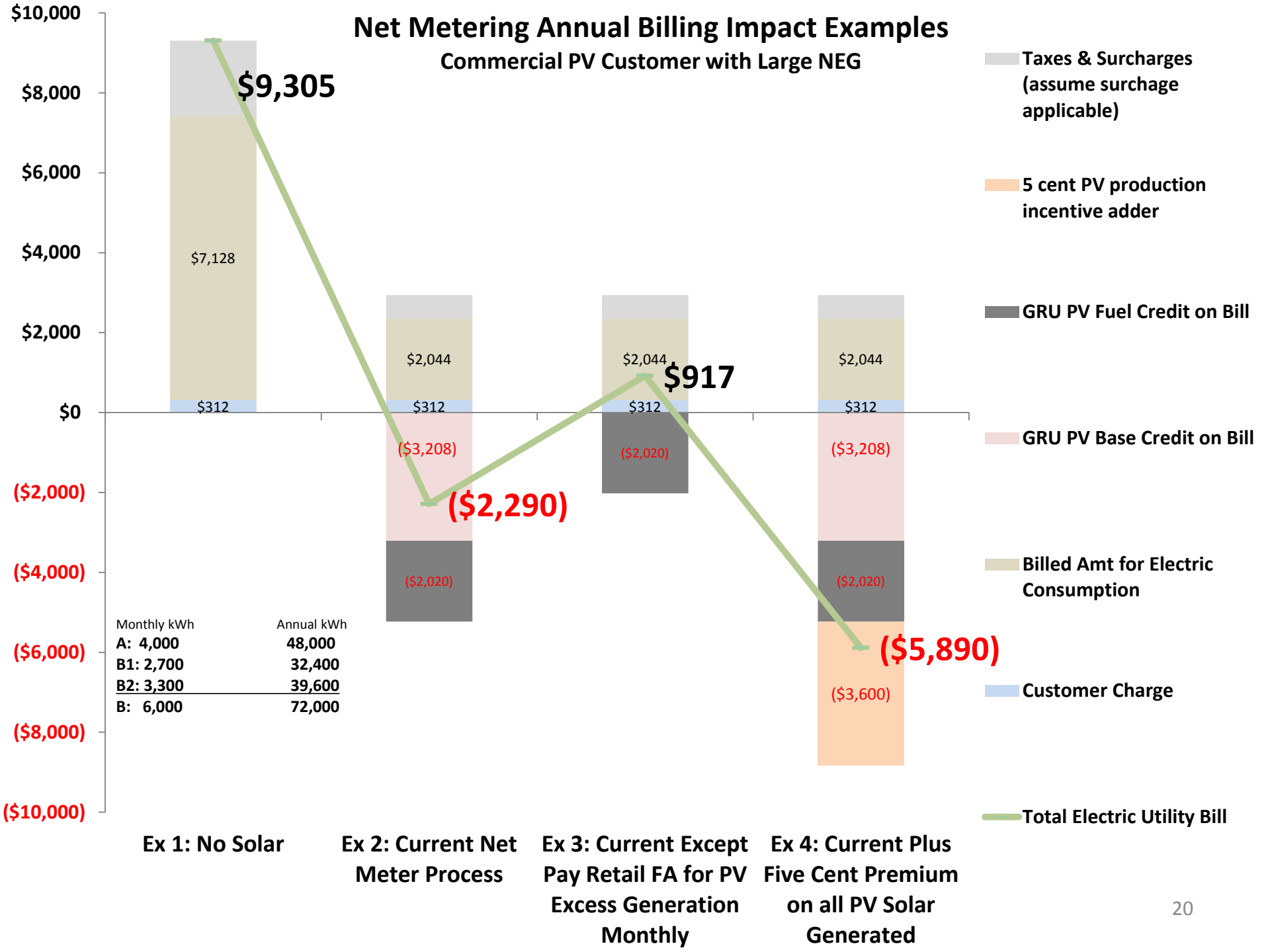
Net Excess Generation



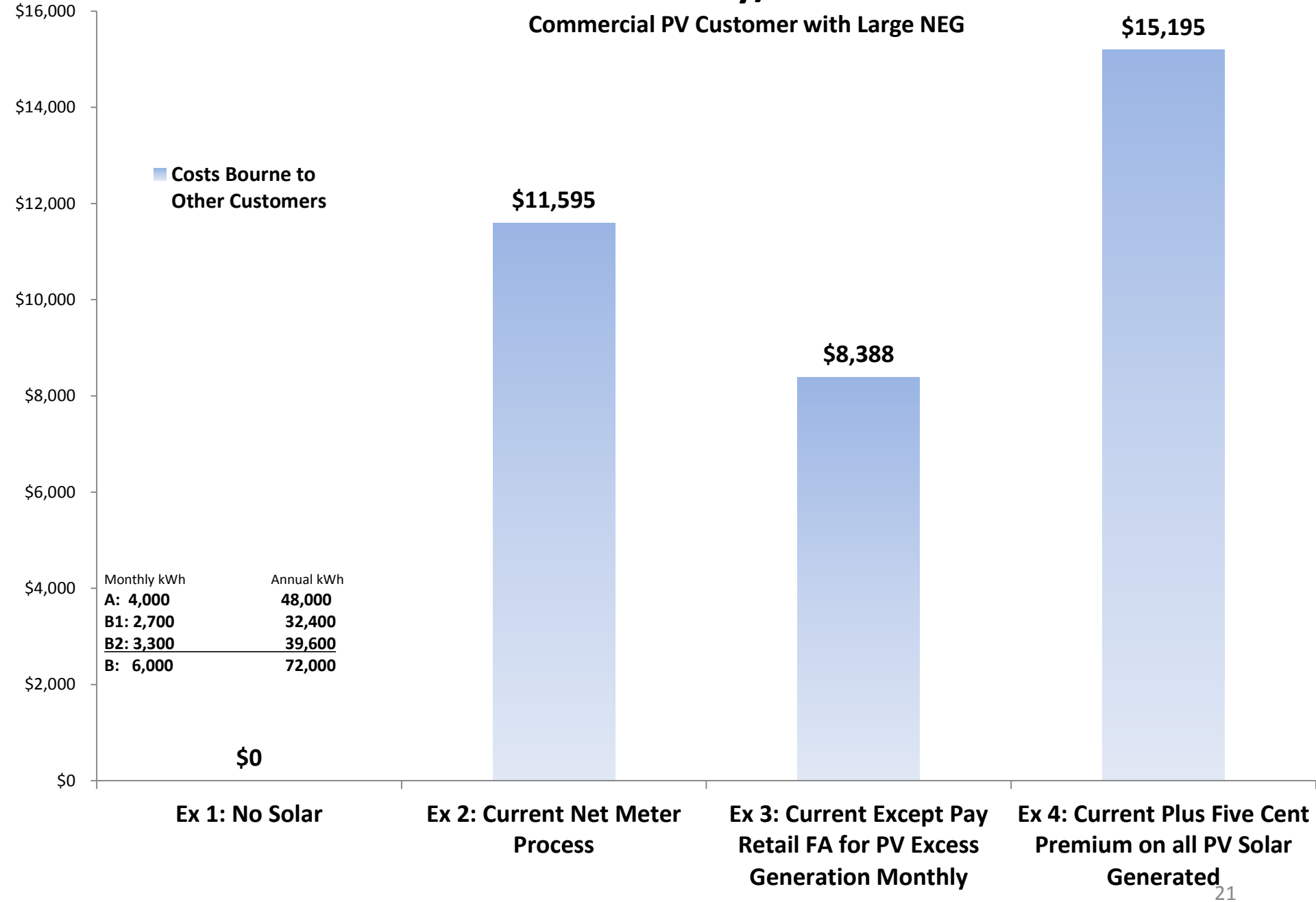
B1 + B2 =

2,700 | 3,300 — 6,000 kWh/mo B

Business Consumption Needs: 4,000 kWh/mo A


Net Metering Annual Billing Impact Examples
Commercial PV Customer with Large NEG
$10,000
$8,000
$6,000
$4,000
$2,000
$0
($2,000)
($4,000)
($6,000)
($8,000)
($10,000)
$9,305
$7,128
$312
$2,044
$312
($3,208)
($2,020)
($2,290)
$2,044
$312
($2,020)
$917
$2,044
$312
($3,208)
($2,020)
($3,600)
($5,890)
Monthly kWh
Annual kWh
A: 4,000
48,000
B1: 2,700
32,400
B2: 3,300
39,600
B: 6,000
72,000
Taxes & Surcharges (assume surchage applicable)
5 cent PV production incentive adder
GRU PV Fuel Credit on Bill
GRU PV Base Credit on Bill
Billed Amt for Electric Consumption
Customer Charge
Total Electric Utility Bill
Ex 1: No Solar
Ex 2: Current Net Meter Process
Ex 3: Current Except Pay Retail FA for PV Excess Generation Monthly
Ex 4: Current Plus Five Cent Premium on all PV Solar Generated

Annual Subsidy/Revenue Loss

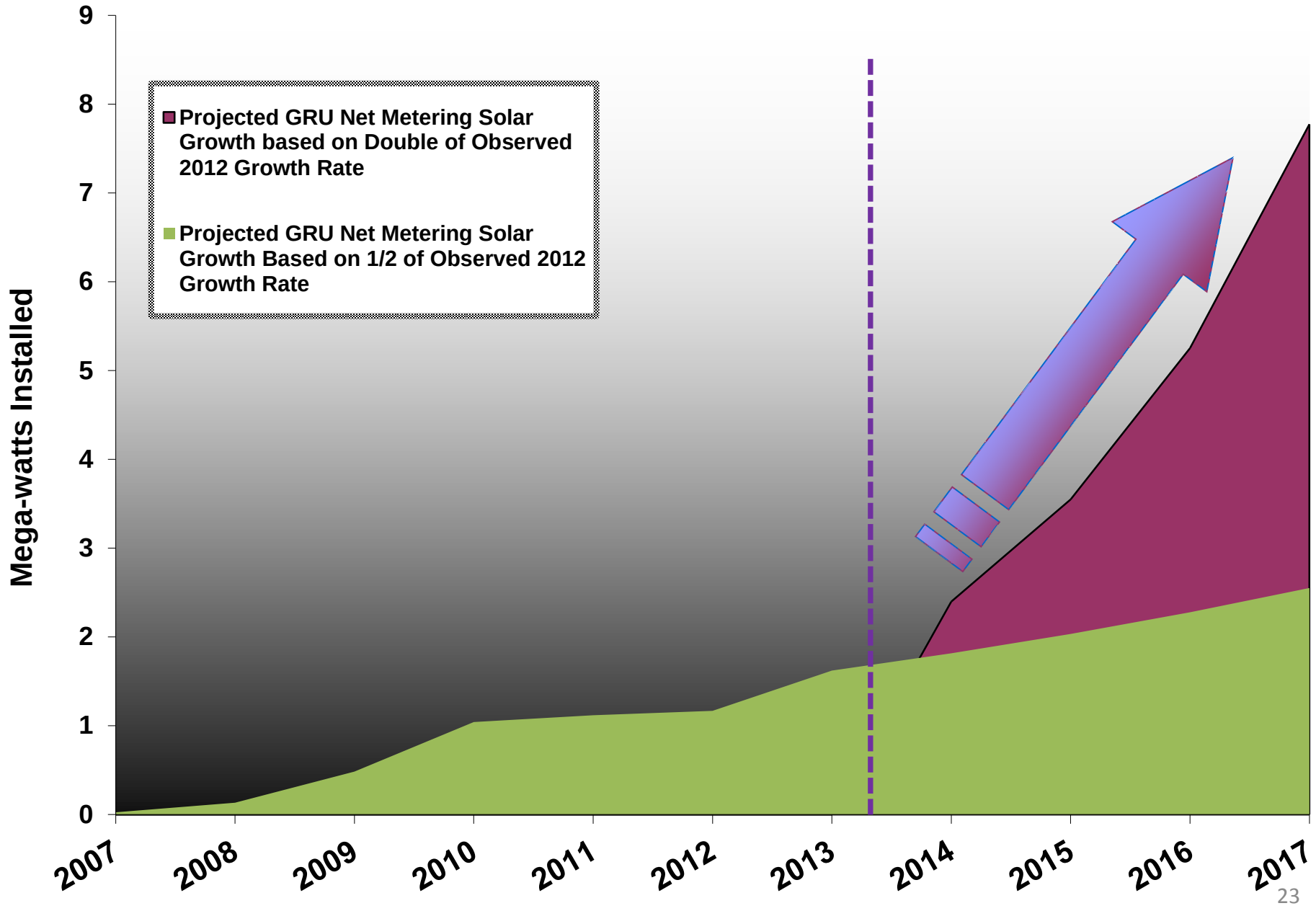


What does pricing change accomplish

- Incentivizes customers to size systems properly
- Results in solar installation and reduced consumption in the facility
- Reduces subsidization by other customers
- Mitigates rate pressure
- Allows utility to pay a competitive rate for energy

Projected GRU Installed Solar Growth - Net Metering

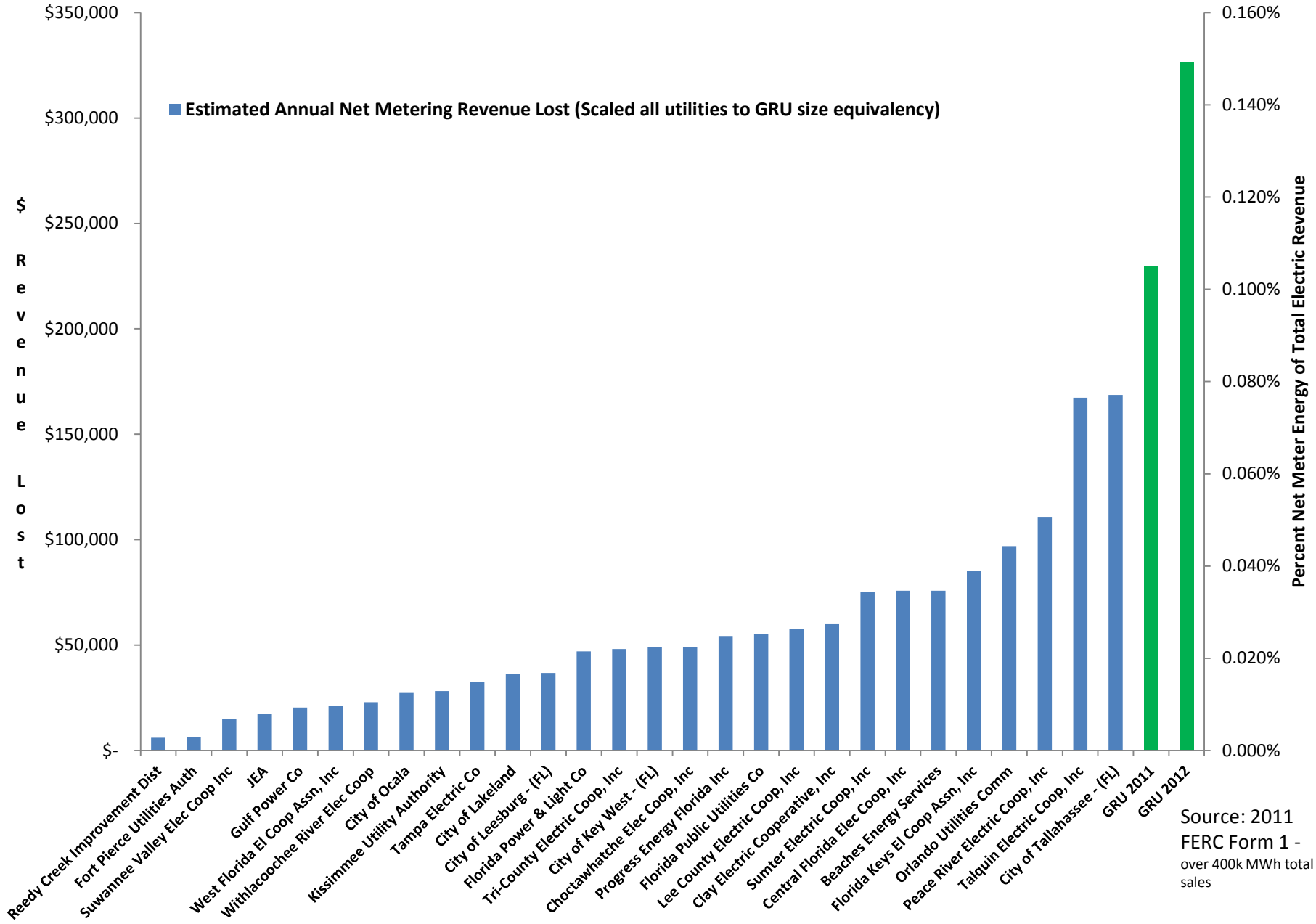
Figures represent projection of GRU Net Metering Programs after 2013



Why we should be different

- No other market in Florida has more saturation
- Higher retail rates, combined with lower installation costs provide greater ROI for owner

Solar Net Metering Saturation among Florida Electric Utilities



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Recommendation

Due to upward rate pressure, the decrease in the cost of solar, and the success of solar in the community:

- Net metering paid at retail fuel adjustment for excess generation monthly

Future budget items

Due to upward rate pressure, the decrease in the cost of solar, and the success of solar in the community:

- Eliminate the residential solar PV rebate
- Consider adjustments to the Solar FIT for example, lower the yearly cap of 4 MW (#120516)