



Value of Solar Update

Presentation to EUC
June 16, 2014





Agenda

- Residential Tariff: Solar Rider Changes 5 min.
 - Removal of annual “sweep”
 - Application of credits to other electric services on same premise
 - Lease-enabling language
 - VoS stability
- Value of Solar Calculations 5 min.
 - 2015 VoS Assessment
 - 2015 VoS Factor



What is Value of Solar (VoS)?

- Avoided cost study
 - Attempts to quantify value at which the utility is “neutral” to paying for locally generated PV
- First study conducted in 2006 by Clean Power Research (CPR), value used internally
- Value has fluctuated historically based on *forecasted* market changes
- Integrated into residential solar tariff in 2012 and reviewed annually
- In July 2013, CPR hired again to review the study
- In October 2013
 - CPR presented the study results to the Joint EUC/RMC meeting
 - VoS for 2014 was announced to be effective from Jan 1st, 2014 per tariff



Residential Solar Tariff Changes Going Forward

- Remove year-end credit sweep
 - allow *non-refundable* credits to roll-over until/unless participant ceases to be AE customer
 - credits non-transferable, applicable only to electric bills
 - may apply credits to customers' other electric accounts on same premise
- Remove the 20 kW tariff cap
 - All residential projects will be on residential solar tariff, regardless of size



Enabling Leased Solar Systems

- Requires change to tariff language
 - Currently states has to be “AE customer and owner” to receive VoS under Residential Solar Rider
 - Leased system “hosts” will now be able to receive VoS credits
- Leases must be equipment leases, cannot be energy leases/transactions



Residential Solar Rate Stability

- Solar rate volatility a concern to solar customers and contractors
- Looked at options to improve surety and stability
- Implementing “rolling average” methodology to smooth rate changes, dampen impact of year-on-year natural gas futures fluctuation
- **“VoS Factor”** used to calculate solar credits will be based on 5 year rolling average **annual “VoS assessment”**
 - VoS Factor for the next year = average of forward year VoS assessment & past 4 years’ VoS assessments

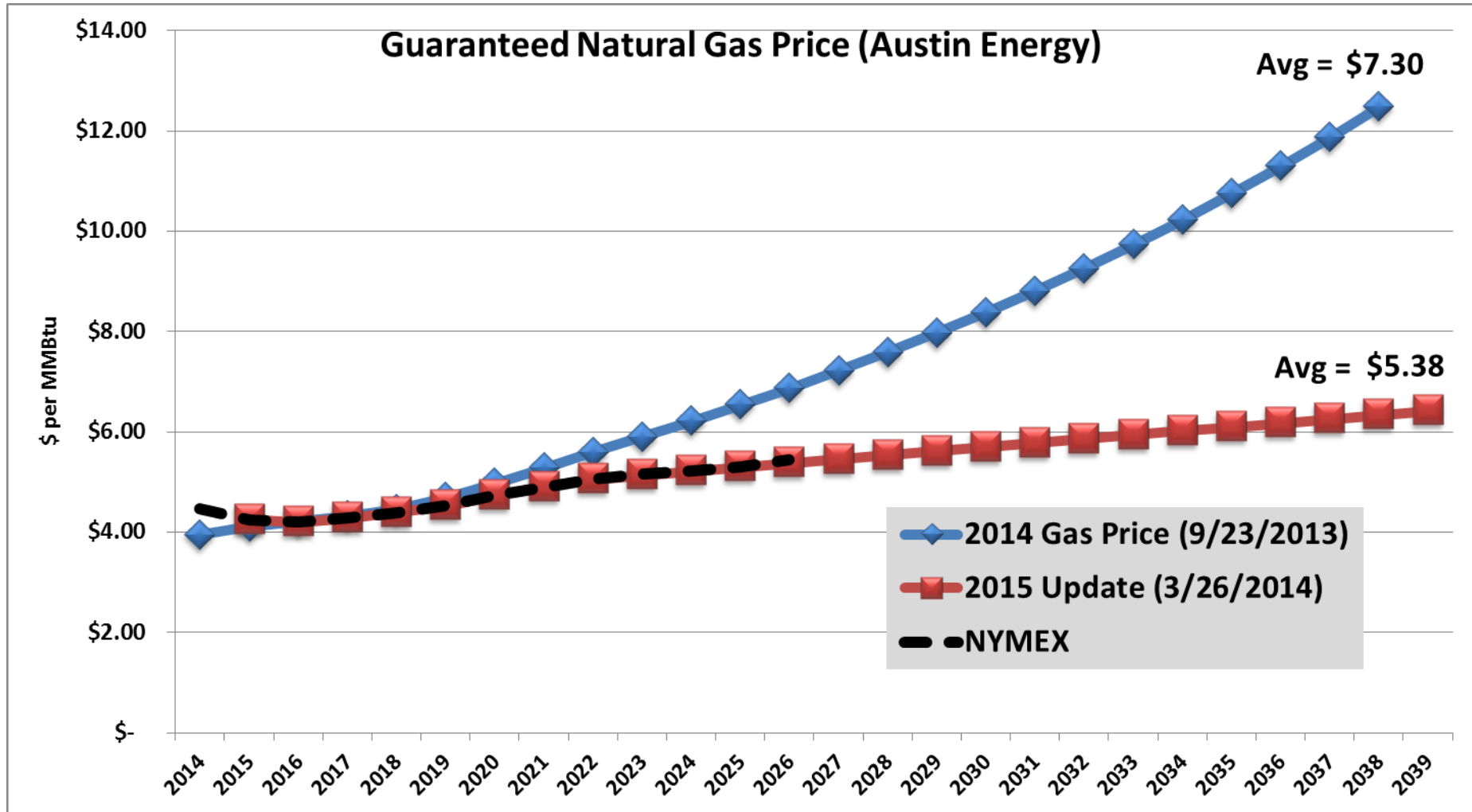


VoS Calculation Update

Value Component	Update	Current 2014 Assessment	2015 Assessment
Base Year	New Rate Year	2014	2015
Guaranteed Gas Price (25-yr price quote)	Refreshed Quote	Date: 9/23/2013 Avg. \$7.30 per MMBtu	Date: 3/26/2014 Avg. \$5.38 per MMBtu
Capacity Value	2.10% Inflation	\$676 per kW	\$690 per kW
Plant O&M	2.10% Inflation	\$7.04 per kW-yr	\$7.19 per kW-yr
Avoided T&D	New 2014 Cost that includes CREZ build out	\$28 per kW	\$41 per kW
Discount Rate	Refreshed 30-yr Treasury Yield	Date: 8/27/2013 Avg. 2.27%	Date: 4/01/2014 Avg. 2.72%



Guaranteed Fuel Value Update





Update Results

2015 Value of Solar Assessment

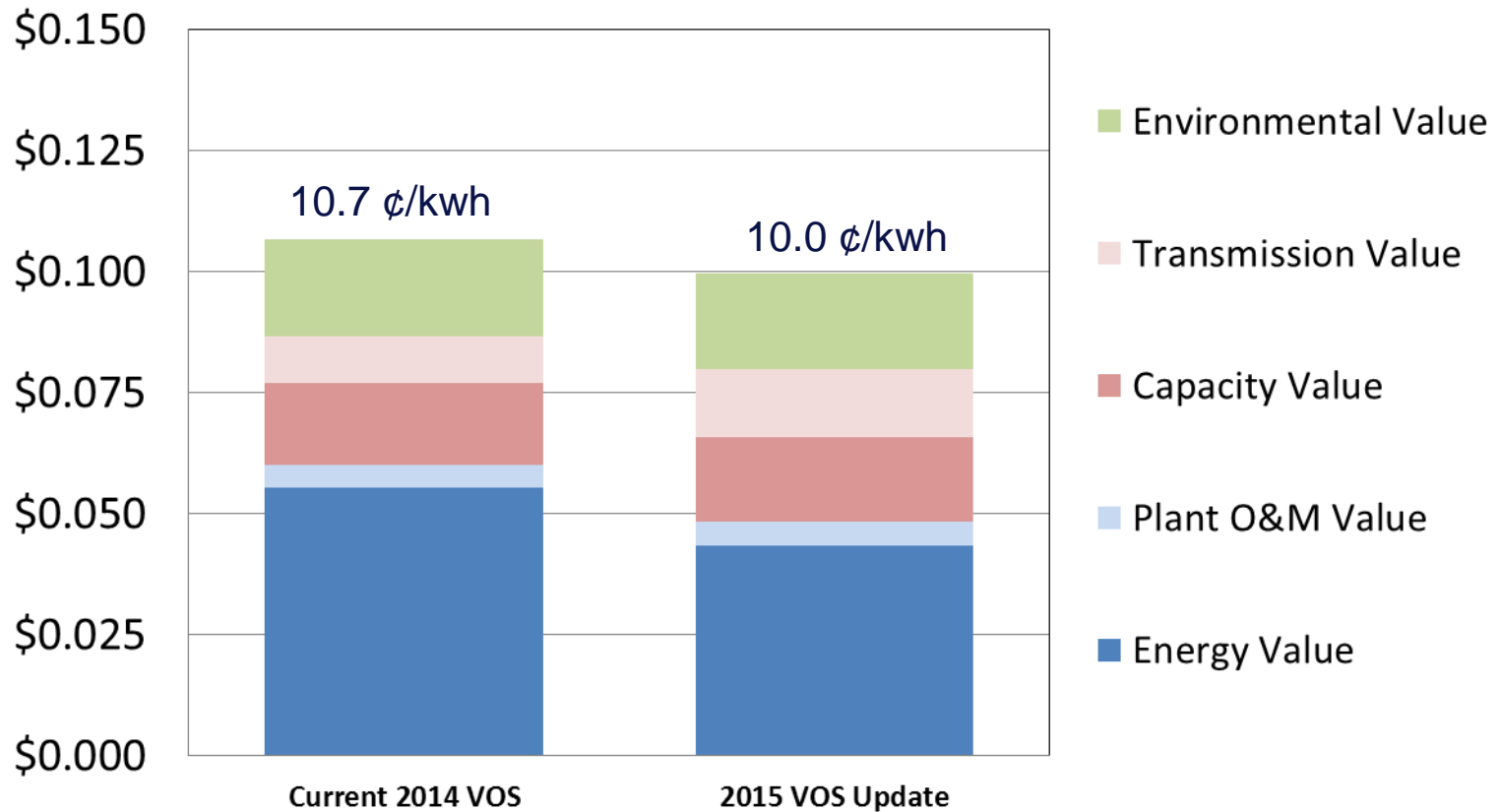
	Economic Value (\$/kWh)	Load Match (No Losses) (%)	Distributed Loss Savings (%)	2015 Distributed PV Value (\$/kWh)	Weighted Percent Change	\$ Change for 1 kW System
Energy Value	\$0.042		4%	\$0.043	-11%	(\$23.3)
Plant O&M Value	\$0.005	100%	6%	\$0.005	0%	\$0.4
Capacity Value	\$0.026	62%	6%	\$0.017	0%	\$0.7
Transmission Value	\$0.021	62%	6%	\$0.014	4%	\$8.6
Environmental Value	\$0.020		0%	\$0.020	0%	\$0.00
Value of Solar (VOS)	\$0.114			\$0.100	-6.6%	(\$13.6)

Current 2014 Value of Solar Assessment

	Economic Value (\$/kWh)	Load Match (No Losses) (%)	Distributed Loss Savings (%)	Distributed PV Value (\$/kWh)
Energy Value	\$0.053		4%	\$0.055
Plant O&M Value	\$0.005	100%	4%	\$0.005
Capacity Value	\$0.026	62%	6%	\$0.017
Transmission Value	\$0.015	62%	6%	\$0.010
Environmental Value	\$0.020		0%	\$0.020
Value of Solar (VOS)	\$0.118			\$0.107



VOS Assessment Comparison





Rolling Average VoS Calculation

2015 Residential Solar Rate Calculation			
	VOS assessment	#months	weighted
2012	12.8	3	38.4
2013	12.8	12	153.6
2014	10.7	12	128.4
2015	10	12	120
Total		39	440.4
2015 VoS Factor		11.3	

Example 2016 Residential Solar Rate Calculation			
	VOS assessment	#months	weighted
2012	12.8	3	38.4
2013	12.8	12	153.6
2014	10.7	12	128.4
2015	10	12	120
2016	9.6	12	115.2
Total		51	555.6
Example 2016 VoS Factor		10.9	

Example 2017 Residential Solar Rate Calculation			
	VOS assessment	#months	weighted
2013	12.8	12	153.6
2014	10.7	12	128.4
2015	10	12	120
2016	9.6	12	115.2
2017	10.4	12	124.8
Total		60	642
Example 2017 VoS Factor		10.7	



Summary Recommendations to Council with FY15 Budget

- 2015 VoS Factor of 11.3 ¢/kwh, effective January 2015
- Eliminate annual sweep of excess credits
 - Excess applicable to customer's other electric services at premise
- Remove 20kW Residential Solar Tariff cap
- Enable leased residential system hosts to receive VoS
- Better stability in VoS rate through smoothing