

Rocky Mountain Association of Energy Engineers Energy Forum

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Office of Consumer Counsel (OCC)

- ▶ The OCC represents residential, small business and agricultural utility consumers, as a class, in electric and natural gas proceedings before the Public Utilities Commission.
- ▶ This presentation represents my personal position and does not represent the position of the OCC.



Black Hills Proceedings

- ▶ 16AL-0326E Electric Rate Case
 - Primarily to put a new simple cycle combustion turbine (LM6000) into rate base
 - Added under the Clean Air, Clean Jobs Act (CACJA)
 - Rate increase of 4.77%
 - Hearings last week



Black Hills Proceedings

- ▶ 16A-0436E Electric Resource Plan
 - No need for conventional generating capacity
 - Need for renewable capacity before 2020
 - Black Hills focused on 60-MW wind farm
 - OCC ensured that large scale solar was allowed
 - With declining Production Tax Credit (“PTC”), will solar be less expensive than wind?
 - I suggest start up on December 31, 2019
 - Give ratepayers the longest break and the most time for solar costs to come down while still meeting the State’s RES requirement
 - Settlement near?
 - Request for Proposal (RFP) to follow



Black Hills Proceedings

- ▶ 2018-2021 Renewable Energy Compliance (“RES”) Plan: Rooftop and Community Solar
 - Rooftop: 2017 1.15 MW, 2018-2021 1.5 MW per year
 - 2017 incentive for small customers at \$0.05,
 - 2018-2021 incentive for small customers at \$0.045, \$0.040, \$0.035, \$0.030
 - Higher residential rates than PSCo, so significantly higher credit for rooftop solar
 - 2017-2021 Medium and large: \$0.075, \$0.075, \$0.070, \$0.065, \$0.060
 - Community Solar: 2.5 MW per year for 2018-2021



Public Service (PSCo) Proceedings

- ▶ 16A-0055E Solar*Connect
 - Now Renewable*Connect
 - Price dependent on bid from solar project
 - Settlement verbally approved by the Commission, written decision soon
 - RFP for 50 MW solar project coming soon



Public Service (PSCo) Proceedings

- ▶ 16A-0139E 2017-2019 Renewable Energy Compliance Plan
 - Rooftop solar: 63, 76, 86 MW 2017-2019
 - New Time-of-Day “Option B” program
 - Incentives

• Year	Sm Opt A	Sm Opt B	Medium
2017	\$0.005	\$0.0500	\$0.0475
2018	\$0.005	\$0.0475	\$0.0425
2019	\$0.005	\$0.0350	\$0.0375

Large – competitive solicitation



Public Service (PSCo) Proceedings

- ▶ 16A-0139E 2017-2019 Renewable Energy Compliance Plan (Continued)
 - Community Solar Gardens
 - 30 MW, 35 MW and 40 MW in 2017-2019
 - 4 MW per year for low-income garden
 - Competitive solicitation and std. offer
 - Class average bill credit for commercial to address low-load factor customers. May eliminate negative CSG bid prices.



Public Service (PSCo) Proceedings

- ▶ 15A-0847E Innovative Clean Technology (ICT)-
Stapleton Battery Project
 - Companion to Panasonic Project
 - Some feeders approaching the limit on the number of solar customers
 - Concern and opportunity
 - ICT project has PSCo installing batteries
 - Cost?? \$5,000 per additional solar customer?
 - PSCo install or developer install?
 - If PSCo installs, how do solar customers pay?



Public Service (PSCo) Proceedings

- ▶ 16A-0396E Electric Resource Plan
 - 615 MW Resource Need
 - Adjustments could reduce this amount
 - Solar counts about 0.5, so 1,200 MW of solar?
 - RFP Mid-2017?
 - Will that enable wind with 100% PTC?
 - I expect a competitive solicitation with nothing but wind and solar selected, no gas-fired generation?



Public Service (PSCo) Proceedings

- ▶ 16A-0396E Electric Resource Plan (Continued)
 - Large Generator Interconnection Requests
 - http://www.rmao.com/wtpp/PSCO_Studies.html
 - 2012: 6 Requests
 - 2013: 7 Requests
 - 2014: 14 Requests
 - 2015: 1 Request
 - 2016: 26 Requests



Public Service (PSCo) Proceedings

- ▶ 16A-0396E Electric Resource Plan (Continued)
 - Large Generator Interconnection Requests
 - 2016 Solar: 2,120 MW
 - 2016 Wind: 1,749 MW
 - In addition to 600 MW Rush Creek
 - All listed as Lincoln County
 - 2016 Gas: 6.5 MW



Public Service (PSCo) Proceedings

▶ Cost of Utility-Scale Solar (\$/MWH)

- Greeley \$43.88
- Denver \$45.26
- Grand Junction \$42.23
- Pueblo \$40.92
- San Luis Valley \$37.18
- Palmdale, CA* \$36.76

- Generation based on NREL PV Watts, <http://pvwatts.nrel.gov/>

- * City of Palo Alto purchase:

- http://www.pv-magazine.com/news/details/beitrag/city-of-palo-alto-considers-solar-power-contract-at-under-37-mwh_100023329/#axzz40uql4Hnn



Net Metering Questions 1

- ▶ How do solar customers pay for the fixed costs that they impose on the system?
 - PSCo proposed a fixed grid use charge
 - PSCo moving toward demand charges
 - Or time-of-day energy charges
- If PSCo must make expenditures in order to connect more solar customers to the system, how will solar customers be charged for this?



Net Metering Questions 2

- ▶ How to deal with net metering as solar costs come down?
 - Should pay cost of solar, not excessive payments because NM cannot adjust
 - Reduce net metering below full credit, then adjust REC payment as necessary
 - Solar customers could pay for DSM, for example. Take DSM out of NM credit.



Net Metering Questions 3

- ▶ Time-of-Day Net Metering Issues
 - Roll over of on peak, shoulder and off peak
 - Use full price in each time period to adjust quantity
 - For example, 1 kWh on peak might equal 3 kWh off peak
 - Or cash out each year



Net Metering Questions 4

- ▶ Value of Solar / Benefit of Solar
 - VOS mostly irrelevant under current Colorado law
 - Pay cost, not value
 - \$80 million DSM program, for example, has had \$200 million in net benefits each year. DSM participants are not paid that.
 - Wind and large-scale solar have benefits. They are paid the cost that they bid
 - Why should rooftop and community solar be different?
 - We need solar payments to track solar costs.



Public Service (PSCo) Proceedings

- ▶ DSM Strategic Issues to be filed March 31, 2017
 - Enabling legislation has 2018 compliance date: will DSM program be continued?
 - Smaller savings likely:
 - Residential lighting about 25% of savings, replaced by EISA 2020 federal standards
 - Different/no incentive structure?
 - PSCo replacing DSM with solar?
 - Flat growth: no capacity benefit?
 - Low avoided energy costs?

