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BEFORE THE ARIZONA CORPORATION COMMISSION

ORIGINAL

BOB STUMP  
CHAIRMAN  
GARY PIERCE  
COMMISSIONER  
BRENDA BURNS  
COMMISSIONER  
BOB BURNS  
COMMISSIONER  
SUSAN BITTER SMITH  
COMMISSIONER

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2014 FEB 14 PM 2 33

Arizona Corporation Commission

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FEB 14 2014

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VALUE AND COST OF DISTRIBUTED  
GENERATION (INCLUDING NET  
METERING).

Docket No. E-00000J-14-0023

RUCO's COMMENTS

RUCO appreciates Staff's efforts in moving this docket forward. Establishing a statewide framework to evaluate the costs and benefits of distributed generation (DG) is a crucial endeavor that will help reduce uncertainty and unproductive debate in the future.

To summarize, RUCO recommends the following:

1. Examine levelized costs and benefits on the margin with a twenty year time horizon
2. Form the analysis in an open and dynamic spreadsheet
3. Limit scope of the costs and benefits to those directly impacting non-participating ratepayers

When evaluating the costs and benefits of distributed generation RUCO believes that a twenty year time horizon is most appropriate. A spreadsheet should be developed that looks at fixed cost losses and the cost avoidance of the next marginal unit of capacity. Further, in order to manage the scope of this docket, RUCO recommends excluding hard to quantify national environmental and health benefits as well as nationalized costs for supporting programs ranging from tax credits for solar to fuel related tax incentives for natural gas. Diving into national

1 benefits and subsidies is utterly complex and would detract from the main objective of this  
2 docket.

3 To setup the examination a few key pieces of information need to be supplied to help  
4 build the valuation model:

- 5 1. When does the utility need new generation and transmission lines?
  - 6 a. What type of generation is needed and how much?
  - 7 b. Are those transmission lines small enough to be impacted by lower demand?
- 8 2. What amount does the average customer pay in fixed costs per year?
- 9 3. What amount does the average solar customer pay in fixed costs per year after solar?
- 10 4. What is the proper fixed cost inflation rate?
- 11 5. What is the marginal capacity value of different DG technologies and orientations?
  - 12 a. What is the projection based on future grid penetration levels?

13 After those foundational questions are answered, the scope and methodology of the  
14 analysis needs to be defined:

- 15 1. **Does the model cover both commercial and residential** – *RUCO recommends both.*
- 16 2. **Time horizon of analysis** – *RUCO recommends a twenty year look.*
- 17 3. **Benefits and costs to include** – *RUCO recommends direct benefits and costs to the non-participating ratepayer.*
- 18 4. **How to calculate capacity savings** – *RUCO recommends applying the marginal capacity value to the levelized cost of a combustion turbine or combine cycle natural gas plant discounted by how many years out the utility needs the asset.*
- 19 5. **Fixed cost and fuel price projections** – *RUCO recommends using a high, medium, and low inflation rate to properly determine the range of prices over twenty years.*
- 20 6. **Self-supply vs. export** – *RUCO recommends looking at the entire transaction not just exports.*

21 After analysis, RUCO believes that there is a small core group of benefits that should be  
22 levelized and calculated. There may be other benefits; however, they are too small to quantify.  
23 Additionally, direct participants are in effect getting compensated for value that is not 100%  
24 guaranteed to ratepayers. This introduces some risk that can counter these smaller benefits.

1 Although this is concerning, the alternative of paying direct participants after a non-event is  
2 impractical at best.

3 Benefits listed in order of significance that RUCO believes are prudent and reasonable to  
4 quantify:

- 5 1. Avoided Fuel / Purchased Power Costs - levelized<sup>1</sup>
- 6 2. Avoided Generation Capacity/ Operating reserves
- 7 3. Avoided / Delayed Transmission System Investment
- 8 4. Avoided Line Losses
- 9 5. Avoided Capacity Losses
- 6 6. Avoided O&M both fixed and variable
- 7 7. Avoided / Delayed Distribution System Investment (Mostly, if not all, for  
8 commercial)

10 It is important to note that the avoided cost of capacity can contain benefit values based  
11 on the technology attributes of the generation - such as low NOx and SOx emission equipment,  
12 low water usage, etc. This makes it much easier to quantify a grouping of benefits and costs.

13 There are also benefits that do not accrue to ratepayers currently but could upon  
14 technology adoption and/or technology development. These technologies include:

- 15 1. Technology synergies
- 16 2. Accurate weather forecasting
- 17 3. Smart inverters

18 RUCO feels that it is important to quantify these values that might not exist in  
19 mainstream technology but are on the verge of coming out or have not come out due to  
20 improper price signals discouraging adoption.

21 In contrast, RUCO recommends that the following costs must be examined:

- 22 1. Lost fixed cost revenue

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23 <sup>1</sup> If examining just the direct impact to non-participating ratepayers, fuel related benefits can be excluded because  
24 they are a direct pass through and it adds complexity to the analysis. However, it should be quantified if the  
Commission seeks to understand appropriate price range of a buy all/sell all arrangement.


2. The current integration costs for DG and future projections of those costs based on penetration levels
3. If needed, any additional fast start capacity to handle higher penetration (just for DG not utility scale)
4. Administrative costs
5. Consumer protection costs
6. Forecasting costs

Finally, some subjects can flip from a cost to a benefit or vice versa. This characteristic can be seen in REST compliance avoidance and fuel hedging costs. For example, the above market cost of utility scale assets form the basis of the REST compliance savings. Yet if natural gas prices increase, then the above market cost can actually be entirely extinguished and the assets can bestow a benefit. In fact, if fuel prices remained at the level seen at the start of the REST, new PPAs would likely have a near zero above market cost. RUCO recommends acknowledging these values that can flip but forgo including them in the analysis.

In terms of data acquisition, RUCO recommends pulling information from the integrated resource plans of each utility, data from in-state solar test yards and real world monitoring, university studies from ASU and UofA, information from the tech workshop APS hosted last year, and WECC for a cost of generation model.

In sum, RUCO recommends to keep the scope of the costs and benefits as simple as possible by focusing on those which directly impact non-participating ratepayers. All of the costs and benefits should be stated as levelized costs. If some value and cost areas prove to be controversial, they should be presented to the Commission as a policy call. An attempt to measure these values should be made nonetheless. Finally, benefits that can come from new technology or planning methods should be quantified. All these figures should all be compiled in an open and dynamic Excel based model.

1 RESPECTFULLY SUBMITTED this 14th day of February, 2014.

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5 Daniel W. Pozefsky  
Chief Counsel

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7 of the foregoing filed this 14<sup>th</sup> day  
8 of February, 2014 with:

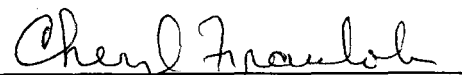
9 Docket Control  
10 Arizona Corporation Commission  
1200 West Washington  
Phoenix, Arizona 85007

11 COPIES of the foregoing hand delivered/  
12 mailed this 14<sup>th</sup> day of February, 2014 to:

13 Lyn Farmer  
14 Hearing Division  
15 Arizona Corporation Commission  
1200 West Washington  
Phoenix, Arizona 85007

16 Janice Alward, Chief Counsel  
17 Legal Division  
18 Arizona Corporation Commission  
1200 West Washington  
Phoenix, Arizona 85007

19 Steve Olea, Director  
20 Utilities Division  
21 Arizona Corporation Commission  
1200 West Washington  
Phoenix, Arizona 85007

22 By   
23 Cheryl Fraulob