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OPEN MEETING AGENDA ITEM

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Geothermal Exchange Organization

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Douglas A. Dougherty, President and Chief Executive Officer



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ARIZONA CORPORATION COMMISSION
DOCKET CONTROL

October 28, 2014

ORIGINAL

Commissioner Susan Bitter Smith
Arizona Corporation Commission
Commissioners Wing – 1200 W. Washington - 2nd Floor
Phoenix, Arizona 85007

Arizona Corporation Commission
DOCKETED

OCT 31 2014

DOCKETED BY

Dear Commissioner Bitter Smith:

Thank you for meeting with the Geothermal Exchange Organization (GEO) last spring, and the opportunity to share the benefits of geothermal heat pump systems (GHPs) in Arizona. We discussed Western Farmers Electric Cooperative's study of their incentive program. They found GHPs saved 4x the electricity (.65 kw/ton) compared to air-source heat pumps (ASHPs) under peak demand conditions. We also talked about how SEER ratings for ASHPs show a seasonal efficiency average, belying the sharp drop in efficiency that occurs during hot summer weather conditions. In contrast, GHPs maintain consistent efficiency year-round by drawing upon the constant temperature of the earth.

Considering these facts, we contend that it makes little sense for utilities in Arizona to currently offer rebates for high-SEER ASHPs, but no incentives for GHPs. We believe that reducing peak power demand and keeping residents cool during the hot summer months should be a priority for Arizona energy policy. Including GHPs in rebate programs makes financial sense for utilities by reducing the need for expensive peaking power, and for ratepayers by reducing the amount of peak kilowatt-hours they need to purchase.

Seventy percent of average household's energy consumption is used to meet thermal loads. By incenting GHPs, Arizonans can help tame the single largest contributor to their utility costs. Reinstating GHP incentives for Arizona Public Service (APS) customers would be incredibly simple. APS last offered incentives for GHPs in 2013, so that program could be brought back. The proposal on the following page details what APS' 2015 geothermal incentive program could look like and provides more context regarding the 2013 APS rebate program for GHPs. If you have any questions, please contact us.

Respectfully,

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Proposed APS 2015 Geothermal Incentive Program

Where would funding come from?

We propose that the geothermal incentive program share funding with the existing solar hot water incentive program. Here's why:

- APS' 2014 solar hot water incentive program made \$500,000.00 available for system installation.
- As of 10/17/14, \$341,026.00 remains.
- If the final quarter of 2014 keeps pace with the previous 3, less than half of the available \$500,000.00 will be allocated.
- In 2013, when APS last funded a geothermal incentive program, \$254,406.00 were awarded.

Given these data points, we believe that solar hot water and geothermal could easily share the \$500,000 that is currently being made available only to solar hot water installations. Splitting this fund 50/50 would still leave room for the solar hot water industry to grow in 2015, while also opening the door for the geothermal industry to gain traction in the state.

How would funds be awarded?

We propose that the geothermal rebate be calculated using the methods APS already developed and used up until 2013, but that funding levels be reduced.

In 2013 and previous years where funds were available, the rebate was calculated using the lower of 2 values:

- 1) Kilowatt savings X .8
- 2) Percentage of proposed installation cost
 - a) 40% of natural gas or electric homes
 - b) 50% for liquefied petroleum gas (due to the higher btu to kw conversion)

For the proposed 2015 program, a reduced incentive could be calculated using the lower of 3 values:

- 1) Kilowatt savings X .7
- 2) Percentage of proposed installation cost
 - a) 30% of natural gas or electric homes
 - b) 40% for liquefied petroleum gas
- 3) \$2500.00/per ton of system capacity

In addition to reducing funding levels, we believe adding a \$2500/ton cap is important to ensure that the incentive makes installation feasible for the greatest number of customers possible. During the 2013 program, incentives averaged \$5,000-\$7,000/ton. At this level, 11 systems were eventually installed through the program. At the funding levels we are recommending, 2-3 times as many systems could be installed, paving the way for future growth in the coming years.

The geothermal industry is in its infancy in Arizona, but this technology has already been successful in other states with very hot summer weather like New Mexico, Oklahoma, and Florida. In other states peak demand reduction is achieved at low cost by experienced installers and the well-developed infrastructure that supports them. The goal of offering a geothermal incentive in Arizona is to grow the industry to the point that competition naturally drives down installation costs and improves quality for all Arizonans.

Finally, in order to achieve high quality at the lowest cost, it may be important to ensure that inexperienced contractors do not jump into the industry to take advantage of these funds and install poor quality systems. One way to prevent that from happening would be to promote or limit the incentive to IGSHA certified installers. The International Ground Source Heat Pump Association provides a geothermal certification that only well-trained professionals are able to achieve.



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