

**BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON
UM 1505**

In the Matter of)	
Public Utility Commission of Oregon)	Dave Sullivan’s final ideas
)	for revising the pilot solar
Solar Photovoltaic)	incentive program
Comments and Recommendations)	
)	

Executive Summary

Oregon’s pilot solar incentive program has shown Oregonians will respond enthusiastically to sufficiently high incentive rates, but problems with the program’s implementation have given it a growing reputation as being unfair and inefficient. Letting these problems fester would make matters worse and lead to a public relations debacle.

To protect the program’s reputation, the PUC needs to take decisive action to give the program a competitive spirit. The key changes should be:

1. Delay the April 1st enrollment period so everyone can plan appropriately.
2. Limit the program’s overall capacity so its rate impact won’t exceed 0.25 percent in any year.
3. Use different tools to set incentive rates and select which capacity reservations to accept. This will save ratepayers money and balance the program’s overall supply and demand.

Collectively, these changes will reposition the pilot solar incentive program as a learning system for the much larger and more important Renewable Portfolio Standard. This would help the solar photovoltaic industry transition away from special carve-outs and allow competition with other renewable energy sources such as biomass, geothermal, hydropower, ocean thermal, other types of solar power, tidal, wave, and wind,

Sincerely,



Dave Sullivan, signed on February 28, 2011

Opening editorial: Choose the right tools – even if they are unfamiliar

Alternatively, if you're holding a hammer, everything looks like a nail!

The pilot solar incentive program's current problems arose because the PUC choose the wrong tools to set incentive rates and select capacity applications. If you choose the wrong tools, no matter how skillfully you use them, the results will be poor.

As an example, consider my role as an emeritus Professor of Information Systems at Oregon State University: my area of expertise was in helping people use computers effectively. I frequently saw people who used the wrong software, usually because they had experience with it and then tried adapting it to new tasks. Perhaps the most common blunder was to build spreadsheet applications when an accounting or database program would much work better. I found the folks who had the most skill at building these spreadsheet applications also had the worst results overall. They were proud of their efforts, and cognitive dissonance kept them from considering alternatives. But if I could somehow manage to get them to try an appropriate tool for the task at hand, it was fun to see the "Eureka" moment occur.

The PUC spends most of its time setting utility rates for large-scale utilities. The utilities make huge investments in purpose-built facilities and need to recover their costs. The PUC has real skill at building sophisticated cost recovery models to set rates. Rate setting is necessary because no retail marketplace exists for pricing these facilities. The facilities are built by contractors who participate in first-price sealed-bid auctions.

The PUC has skill and confidence with cost-based rate setting and sealed-bid auctions. Thus, no one should be surprised the PUC selected these tools to create the pilot solar incentive program.

Problems arose because small and mid-size solar systems are not like industrial-scale utility projects. Instead, a residential solar system is more like a car or house. Cars and homes have market-based values that are easily determined from comparable sales. As a result, no one uses a cost recovery model to buy them.

And imagine how long a car dealership or real estate agent would stay in business if they decided to save money by forcing all customers to fill out an online sales form during bi-annual enrollment periods!

A first-price sealed bid auction makes sense for utility-scale construction projects. The bidders are huge construction firms with expertise and experience at pricing. This auction method has worked well enough for the large-scale portion of the solar pilot program, but for lots of reasons, it makes no sense for the small to mid-sized portion.

The small-scale solar systems in Oregon's pilot program have a lot in common with 15-year Treasury bonds. Both investment vehicles provide a predictable and fairly constant 15-year stream of payments. Both offer lots of essentially identical investments for sale. Both make sense to sell through a single-price Treasury-style auction. Both want to attract unsophisticated investors. I doubt whether the PUC has prior experience with a Treasury-style auction – but it would be a much better auction method for small and mid-size solar systems than sealed-bid auctions – and much better than a lottery.

The pilot program purpose's is to try out new approaches – to learn what works and what doesn't. The PUC has tried using its normal toolkit on the pilot program with poor results. Now the PUC should try more appropriate tools for setting incentive rates and selecting capacity applications in the small and mid-scale portions of the pilot program. The new tools will make better use of market-based feedback and will adjust rates to keep supply in balance with demand.

I want to close this editorial by asking the PUC Commissioners to keep an open mind as they read through the rest of my comments. I want you to use new tools. This will require a certain amount of courage and inquisitiveness, but I can promise the new tools will work better than the ones in your normal toolkit.

The eDocket Discussion So Far

These three ideas seem widely accepted about the pilot solar program:

- Last year's incentive rates for the July 1st and October 1st enrollments were too high to balance customer demand with the program's available supply of capacity.
- As a result, solar industry insiders used increasingly sophisticated methods to complete the online capacity reservation forms, and all capacity was grabbed within minutes of when each enrollment period opened at 8 a.m. This in turn has led to a growing public perception that the program's capacity reservation system has unfairly kept ordinary residential customers from successfully participating.
- No informed observer believes another 10 percent drop in incentive rates would lower demand enough to equal the available capacity on April 1st.

Largely in response to these ideas, the PUC has encouraged discussions about how to revise the program's operation. The resulting discussions have been lively – both through the eDocket system and in public meetings at the PUC office building in Salem. In these meetings, I can think of only two ideas that have received general consensus:

- Information from the capacity reservation and bidding processes (such as the size, incentive price, and timing of each capacity reservation) should be made public, but data that would identify specific people should remain confidential.
- The capacity reservation system should be left open for at least 24 hours even if more reservations are received than the available capacity. Real disagreement, however, exists about how to choose “winning” reservations: the first one received (via a first-come/first-served approach), the ones with luck (via a lottery), or the ones willing to accept the lowest incentive rate (via an auction).

Ultimately, it shouldn't be surprising that viewpoints have varied so widely. Lobbyists for the solar industry have a vested interest in making the program as large and generous as possible, but the ordinary ratepayer is on the other side of the fence and is concerned about the program's cost. Key areas of disagreement include:

1. Should the April 1st enrollment window be delayed to allow for changes?
2. Should the program abide by its 0.25 percent rate impact limit?
3. What process should be used to set incentive rates? Specifically,
 - 3.1. Should incentive rates vary on a county-by-county basis?
 - 3.2. Which capacity reservations should be approved?
 - 3.3. Should the program use shorter enrollment periods?

The rest of this eDocket filing considers each question in turn.

Question #1: Should the April 1st enrollment window be delayed to allow for changes?

Some people have asked the PUC to make no changes to the program until after the April 1st enrollment period. They have argued it isn't fair to make changes without adequate advance notice, and they have incorrectly argued that dropping the incentive rates by more than 10 percent would be a change to the program. Only one part of these arguments have made sense to me: I agree it would be a bad move to make changes to the program without giving at least a 30-day notice, so I recommend delaying the April 1st enrollment period until at least May 1st. I strongly disagree with the suggestion that leaving the current process in place for another six months would be fair. *How fair is it to leave known flaws in place – don't ratepayers deserve better?*

The real change would be to drop incentive rates by only 10 percent because this would deliberately leave supply and demand wildly out of balance. The program's original design included a rebuttable presumption about how much rates should change. For example, both the May 28, 2010 PUC Order which established the pilot program and the December 30, 2010 PUC Report to the Legislature said:

Any party can challenge a rebuttable presumption prior to the next rate period.

I formally rebutted the 10 percent rate reduction with my December 14th eDocket filing "Dave Sullivan's request for an eDocket discussion about solar incentive rates" (available at <http://edocs.puc.state.or.us/efdocs/HAC/um1505hac105014.pdf>). Nonetheless, I can understand how people have forgotten the program was originally designed with the intention to adjust rates so supply equals demand. If I worked in Oregon's solar industry, I might hope to make tens of thousands of dollars from an April 1st enrollment. This sort of financial incentive affects people's memory and perspective.

Sometimes decisive action must be taken even though it results in painful changes. If a problem will fester, it is best to act expeditiously. This advice is especially true if announcing the change will cause a public reaction. Consider the following examples:

- A doctor says a CAT scan shows aggressive cancer and recommends an operation.
- A country's central banker says the country's currency can no longer be supported at the current level and needs to be devalued.
- An FDIC examiner says a bank no longer is solvent and recommends closing it.
- A state's utility commissioners say a popular program has flaws and needs to change.

In all these examples, the underlying problems will get worse without decisive action – and the problems will be compounded if extensive public discussions are followed by formal decisions but implementation is delayed for six months.

News organizations have started paying attention to how quickly this program's capacity reservations have been snatched up. Consider the kind of publicity this program will get if the April 1st enrollment closes out faster than the October 1st enrollment. I can see both local and nationwide news articles, editorials, and video segments that describe the cops-and-robbers game being played between utilities and solar industry insiders. The cops (played by the utilities) have said they will make secret changes to the layout and naming conventions within the online capacity registration forms in an attempt to keep custom software from auto-filling the forms. The robbers (played by industry insiders) will use robust countermeasures (such as preset keyboard macros) to complete the forms faster than any human can type. Is this really the sort of publicity the PUC wants to see?

A stronger and deeper reason exists for reforming the pilot program: the PUC's reputation is at stake, and our society relies on trust. A key reason why the United States is more productive than other countries comes from a shared sense of honesty. Ask anyone on the street, and they will tell you the Public Utilities Commission exists to protect ratepayers from handing unwarranted profits to utility suppliers. People pay taxes voluntarily, complete business transactions honorably, and function together cooperatively because of trust. But when a government agency is seen violating the public trust, people begin to question how they should act individually.

In theory the PUC has said it wants to promote competition among electricity suppliers. For example, the PUC Commissioners said it would be an irreversible mistake to set the incentive rates too high:

A critical element of the success of the pilot program is setting the initial rates for energy produced by small-scale and medium-scale systems under the net metering arrangements. ... The consequences of setting rates too high cannot be undone. Eligible capacity will be reserved without recourse for ratepayers. In contrast, rates set at levels too low to promote participation can be raised during later stages of the pilot program.¹

But in practice the PUC has set incentive rates much too high on each of the first two enrollment periods. So far I've found many informed observers are willing to forgive these blunders as start-up errors in a new pilot program. I fall in this category, and I've stopped writing editorials attacking the PUC partly I don't want to undermine our society's trust of government, but also because I hope the pilot program's obvious start-up problems will be fixed.

¹ "Order: Pilot Program Established," May 28, 2010, by Ray Baum, Susan Ackerman, and John Savage, page 13. (Available at ¹"Solar Photovoltaic Volumetric Incentive Rate Pilot Program: Report to the Legislative Assembly," December 30, 2010, by Ray Baum, Susan Ackerman, and John Savage (available at <http://edocs.puc.state.or.us/efddocs/HDB/um1505hdb135032.pdf>).

The situation would be different this year: The PUC has compelling evidence incentive rates should drop by at least 30 percent to balance supply with demand for an April 1st enrollment period. If the PUC doesn't take action before the next enrollment period, what message will this send to ratepayers, news reporters, and editors? Does the PUC want to be seen as defending ratepayers and promoting competition – or does it want to be seen as being “in the tank” for the solar industry? Does the PUC care about its credibility? Please consider these questions as you decide how and when to make changes in this pilot program.

This program's current flaws require decisive action, and they need to be announced in an unmistakable manner. Minor adjustments to a program can be made incrementally, but structural changes should not be snuck in quietly. While the eDocket system is useful, it remains obscure enough that relatively few people understand the scope of changes being considered. Fewer than 50 people were in the room on February 18th to discuss upcoming changes. For all these reasons, I urge the PUC to postpone the April 1st enrollment period.

Specific recommendation: Issue an order to delay the April 1st enrollment period until May 1st.

Question #2: Should the program abide by its 0.25 percent rate impact limit?

Oregon's Legislature didn't know how expensive the pilot solar incentive program would be, so to play it safe the program's enabling legislation suggests the PUC should limit the program's size to make sure:

... the rate impact of the pilot program for any customer class does not exceed 0.25 percent of the electric company's revenue requirement for the class in any year.

The PUC's mission statement says it will foster competition to achieve just and reasonable rates. In addition, the PUC wrote to the legislature on December 30, 2010:

As a matter of policy, the Commission does not support carve outs for any renewable resource in the RPS. A carve-out would create winners and losers in the development of renewable generation. It would also dilute the RPS and create disincentives for innovation in the solar industry to compete against more economic renewable resources.²

Given these facts, I don't see how the PUC can honorably expand the pilot solar incentive program beyond the 0.25 percent rate limit. Sticking to this rate limit doesn't stop solar

²“Solar Photovoltaic Volumetric Incentive Rate Pilot Program: Report to the Legislative Assembly,” December 30, 2010, by Ray Baum, Susan Ackerman, and John Savage. (Available at <http://edocs.puc.state.or.us/efdocs/HDB/um1505hdb135032.pdf>).

systems from being used in Oregon – instead, it asks solar systems to compete with other energy sources within a much larger Renewable Portfolio Standard system. This viewpoint places the pilot solar incentive program as a one-time, limited carve-out within the RPS, and a key goal of the program should be to help the solar industry learn how to compete within the RPS. This viewpoint suggests the pilot solar incentive program should be refocused on efficiency and reducing costs – passing out unwarranted profits with excessive incentive rates will only make the solar industry dependent on the pilot program and will hamper its long-term ability to compete within the RPS.

Limiting the program to the 0.25 percent rate limit will require adjusting each utility’s capacity allocations. Each utility’s situation is different, so I will address each one in turn.

Idaho Power should be immediately released from awarding future capacity reservations. Enough capacity has already been awarded to Idaho Power customers so their rate impact will be above the 0.25 percent limit until 2024.

PGE’s future capacity allocations should be immediately cut by 50 percent. To help understand this recommendation, Table 1 shows the relevant portion of PGE’s rate impact projections from PUC’s December 30, 2010 Report to the Legislature:³

Solar Photovoltaic Pilot Programs - PGE						
Estimated Costs of Photovoltaic Pilot Programs						
Year	Implementation Costs	VIR Payments	Offsets to Costs	Total Program Costs	Revenue Requirement	% Rate Impact
2010	463,365	2,457,206	196,840	2,723,731	1,734,017,686	0.16%
2011	455,563	4,804,175	400,567	4,859,171	1,786,038,217	0.27%
2012	622,083	7,150,775	632,410	7,140,448	1,839,619,363	0.39%
2013	544,380	9,497,281	864,241	9,177,420	1,894,807,944	0.48%

Table 1: PGE’s rate impact if capacity allocations remain unchanged and incentive rates drop by 10 percent from 2011 through 2013. This table was developed by PUC Staff.

Table 2 makes two key assumptions to revise Table 1: capacity allocations have been cut by 50 percent from 2011 through 2013, and incentive rates have been reduced by an additional 20 to reach a 30 percent total reduction.

Year	Implementation Costs	VIR Payments	Offsets to Costs	Total Program Costs	Revenue Requirement	% Rate Impact
2010	463,365	2,457,206	196,840	2,723,731	1,734,017,686	0.16%
2011	322,030	3,395,994	278,331	3,439,693	1,786,038,217	0.19%
2012	377,092	4,334,634	371,068	4,340,658	1,839,619,363	0.24%
2013	302,260	5,273,236	463,800	5,111,695	1,894,807,944	0.27%

Table 2: PGE’s rate impact if capacity allocations are reduced by 50 percent from 2011 through 2013 and if incentive rates drop by 30 percent.

³ Ibid, page 12.

Warning – Technical Details: To calculate Table 2, I began by reducing the columns for **VIR Payments** and **Offsets to Costs** for 2011 through 2013 in two ways: I lowered the amount of new capacity by 50 percent, and I lowered the assumed VIR rates for 2011 through 2013 by an additional 20 percent from the rates shown in Table 1. No changes were made to the 2010 line because its capacity reservations and incentive rates have already been determined. Next, I lowered the **Implementation Costs** column so that its relationship to the **VIR Payments** column is proportionally the same in Tables 1 and 2.

Summary: Table 1 suggests the rate impact on PGE customers will be 0.48 percent in 2013 if the PUC lowers incentive rates by only 10 percent and leaves capacity allocations unchanged. Table 2 shows the rate impact on PGE customers will be 0.27 percent in 2013 if the PUC lowers incentive rates by 30 percent and cuts capacity allocations by 50 percent. This shows if PGE’s future capacity allocations are cut in half (and if incentive rates also drop by 30 percent), then the program’s rate impact will still exceed the 0.25 percent rate impact.

Pacific Power’s future capacity allocations should be immediately cut by 50 percent. Tables 3 and 4 are identical in nature to Tables 1 and 2 except they refer to Pacific Power instead of PGE.

Solar Photovoltaic Pilot Programs - Pacific Power						
Estimated Costs of Photovoltaic Pilot Programs						
Year	Implementation Costs	VIR Payments	Offsets to Costs	Total Program Costs	Revenue Requirement	% Rate Impact
2010	525,000	1,841,513	197,840	2,168,673	1,076,153,000	0.20%
2011	500,000	3,393,548	428,321	3,465,227	1,137,476,000	0.30%
2012	500,000	4,686,566	670,847	4,515,719	1,171,600,280	0.39%
2013	500,000	5,769,779	939,820	5,329,959	1,206,748,288	0.44%

Table 3: Pacific Power’s rate impact if capacity allocations remain unchanged and incentive rates drop by 10 percent from 2011 through 2013. This table was developed by PUC Staff.

Year	Implementation Costs	VIR Payments	Offsets to Costs	Total Program Costs	Revenue Requirement	% Rate Impact
2010	525,000	1,841,513	197,840	2,168,673	1,076,153,000	0.20%
2011	362,795	2,462,327	290,032	2,535,090	1,137,476,000	0.22%
2012	317,880	2,979,534	387,043	2,910,372	1,171,600,280	0.25%
2013	295,750	3,412,819	494,632	3,213,937	1,206,748,288	0.27%

Table 4: Pacific Power’s rate impact if capacity allocations are reduced by 50 percent from 2011 through 2013 and if incentive rates drop by 30 percent.

Summary: Table 4 shows if Pacific Power’s future capacity allocations are cut in half (and incentive rates also drop by 30 percent), then the program’s rate impact will still exceed the 0.25 percent rate impact.

Specific recommendations:

- *Issue an order that asks Idaho Power not to award new capacity allocations and asks both PGE and Pacific Power to cut future capacity allocations in half.*
- *The order should modify OAR 860-084-0150 to say:*
860-084-0150 (1) New capacity reservations will not be accepted after March 31, 2015, or when the cumulative capacity of contracted systems in pilot programs reaches 25 megawatts of nameplate capacity, or when the pilot program's costs are such that the projected rate impact will exceed 0.25 percent of the electric company's revenue requirement in at least one year.
- *The order should modify OAR 860-084-0220 (3) to remove the phrase:*
"at the time the pilot program reaches 25 megawatts of alternating current."
- *The order should delete OAR 860-084-0380 (3) because it would be redundant and confusing in light of the two OAR changes listed above. OAR 860-084-0380 (3) currently says:*
The Commission may establish total generator nameplate capacity limits for an electric company so that the rate impact of the pilot program for any customer class does not exceed 0.25 percent of the company's revenue requirement for the class in any year.

Question #3: What process should be used to set incentive rates?

So far the PUC has set incentive rates for the small and mid-size solar systems based on historical cost models without using any significant amount of market-based feedback. My wife watches Dr. Phil on TV from time to time. When he wants people to consider change, he asks them, "How well has that been working for you?" A Dr. Phil moment has arrived, and the PUC needs to ask itself, "How well has that been working for you?"

Lots of methods exist to put market-based feedback into the incentive-rate setting process. This section recommends making three simple changes that would enhance competition and lower incentive rates by using market-based feedback.

Question 3.1: Should rates vary on a county-by-county basis?

My eDocket filings with the PUC have consistently argued for state-wide incentive rates. For example, my January 11, 2011 filing (available at: <http://edocs.puc.state.or.us/efdocs/HAC/um1505hac11424.pdf>) said,

Stop paying higher incentives for installing solar panels in rainy, foggy places!

Incentives usually are used to encourage good behavior, but Oregon has paid higher incentive rates to encourage people to put solar panels in rainy parts of Oregon. I suspect this decision was made because lots of voters live in dreary Portland while few voters live in sunny Lakeview or Twin Falls where the panels would be 30 percent more efficient. But whatever the initial logic behind this decision might have been, the decision should be abandoned. Let people from all over Oregon place bids in a public auction, and whoever is willing to accept the lowest incentive rate should win the auction. This approach will let market forces place expensive solar panels where they will do the most good.

I wasn't the first person to argue for statewide solar rates. For example, last May the PUC Commissioners wrote:

PGE opposed geographically differentiated solar rates. PGE recommends, for a particular project size, a single volumetric rate for the entire state. ... We adopt Staff's proposed recommendations [to create county-by-county rate zones]. Staff's proposal allows us to test both approaches and learn whether geographical differentiation is important to economically deploying SPV systems in a wide range of areas.⁴

The time has come to revisit this decision. After a year's experience, we now know Oregonians will enthusiastically deploy solar systems without resorting to "geographical differentiation." Ratepayers no longer should be forced to pay premium prices to put solar panels in places where the panels will perform poorly.

Two other reasons exist to adopt statewide incentive rates. First, they are easier to calculate, administer, and explain. Simpler is better.

Second, the Renewable Portfolio Standard (RPS) won't have county-by-county incentives, and the pilot solar program should be refocused to act as a training system for the RPS.

Specific recommendations:

- ***Issue an order to change the program so there is only one incentive rate for each project size and utility.***
- ***No changes to the PUC's Oregon Administrative Rules are necessary to implement this change.***

Question 3.2: Which capacity reservations should be approved?

Last year's experience has shown many more people want to use the pilot program than its limited capacity will allow. Three methods could be used to select successful applications:

⁴ Ibid, pages 14-15.

1. The **first-come/first-serve** method selects the first applications received.
2. A **lottery** method uses luck-of-the-draw to select applications.
3. An **auction** method adjusts the incentive rate to select applications.

3.2.1 First-come/first serve method:

This method is widely and correctly seen as having been unfair to the ordinary residential customer: Solar industry insiders have used increasingly sophisticated methods to grab online capacity reservations quickly.

3.2.2 Lottery method:

Various people have suggested using a lottery to select applications. Don't do this! Making this change will cost money, will be a distraction, and won't do anything to solve the underlying program of balancing supply with demand. At best, it may make an overly expensive system seem fairer. A couple of analogies will help explain how poorly a lottery-based system would work:

- A lottery-based system makes as much sense as a doctor who prescribes a painkiller when an antibiotic is needed to cure the disease.
- A lottery-based system makes as much sense as painting leaves green instead of watering a dry plant.

3.2.2 Lottery method:

I have consistently argued to use an auction to select applications. For example, my January 11, 2011 filing (available at: <http://edocs.puc.state.or.us/efdocs/HAC/um1505hac11424.pdf>) said,

The decision to base incentive rates on historical cost estimates has proven to be a disaster. ... Fortunately, a simple and effective alternative exists: use public auctions to determine market-based incentive rates that balance the available capacity with demand. Lots of easily implemented auction systems exist. For example, charities use simple paper-based silent auctions to sell things all the time. With minor modifications, a similar paper-based system could be used to auction capacity in the pilot program. Alternatively, an eBay-like auction system could collect bids and match available capacity with demand.

I recommend using an auction method similar to the ones used by the US Treasury to sell bonds. For an excellent description of the US Treasury bidding process, try reading ThisMatter.com (available at <http://thismatter.com/money/bonds/types/government/united-states-treasury-auctions.htm>). Here are relevant portions from that site's description:

The U.S. Treasury uses an auction process to sell their securities and to determine their rate or yield.

With a competitive bid, a bidder specifies the discount rate that is acceptable. ... At the close of an auction, Treasury accepts ... accepts competitive bids in ascending order in terms of

their yields until the quantity of accepted bids reaches the offering amount. All bidders will receive the same rate or yield at the highest accepted bid.

A Treasury-style auction provides a simple and easily understood way to select capacity applications. The only change needed to the existing online capacity reservation forms would be to add a new field labeled, “Lowest incentive rate you are willing to accept.” Then, capacity reservations should be accepted in ascending order of incentive rates until the available capacity has been reached. All bidders will receive the same incentive rate as the highest accepted bid. This approach would reject applications unwilling to accept the market-clearing incentive rate, and all remaining applications would receive the market-clearing rate.

Often an example helps clarify things. Suppose the following facts happen:

- Pacific Power has enough capacity in a given enrollment period to accept 500 KWh of capacity in the small-scale system category.
- Pacific Power receives capacity applications totaling 3,000 KWh of capacity.
- Sally Smith enters a capacity reservation for an 8-KWh system, and her lowest acceptable capacity is 26 cents/KWh.
- Tim Jones enters a capacity reservation for a 3-KWh system, and his lowest acceptable capacity is 52 cents/KWh.
- An analyst at Pacific Power puts all the capacity reservations for the enrollment period in a spreadsheet and sorts them in ascending order based on the “Lowest Acceptable Rate” column. She determines the market-clearing incentive rate is 36 cents/KWh.
- Sally Smith gets her reservation approved at the 36 cents/KWh rate – as do the other 492 kilowatt hours of capacity in this enrollment period.
- Tim Jones is told his 52 cents/KWh rate was too high to be accepted in this enrollment period. His deposit is refunded, and he is encouraged to apply in the next enrollment period.

Comparing the three selection methods

The following table shows how PGE and Pacific Power might use a spreadsheet to determine which applications to accept under each of the three systems. I included the table to show how similar the three systems are from the utilities’ perspective.

First-come/first-serve	Lottery	Auction
Put all applications in a spreadsheet		
	Add a new column filled with random numbers	A new column titled Lowest Acceptable Rate
Sort in ascending order based on the Date/Timestamp column	Sort in ascending order based on the Random Number column	Sort in ascending order based on the Lowest Acceptable Rate column
Insert a Cumulative Applications column that shows the requested capacity of all rows at or above the current row		
Scan down the Cumulative Applications column and approve all applications on rows above the available capacity limit.		

Table 1: Three methods of selecting successful applications

I've done my best to describe each method's advantages and disadvantages in an unbiased manner in Table 2:

First-come/first-serve	Lottery	Auction
<p>Pros:</p> <ul style="list-style-type: none"> • Simple, understandable process • Widely used to sell items. Example: concert tickets • Requires no changes to existing system 	<p>Pros:</p> <ul style="list-style-type: none"> • Simple, understandable process • Widely used to sell items. Example: Megabucks lottery tickets • Gives everyone a fair chance to win 	<p>Pros:</p> <ul style="list-style-type: none"> • Simple, understandable process • Widely used to sell items. Example: US Treasury bonds. • Balances supply with demand by lowering the incentive rate to a market-clearing level. • Saves ratepayers money
<p>Cons:</p> <ul style="list-style-type: none"> • Lets industry insiders use sophisticated methods to grab nearly all capacity • Widely seen as unfair to ordinary residential applicants who can't get into the program • No one know how much unmet demand existed because once the program fills up people no longer have any reason to fill out capacity reservations 	<p>Cons:</p> <ul style="list-style-type: none"> • Requires minor modifications to the current application process • Makes no attempt to balance available capacity with underlying customer demand. • Encourages people to game the system by submitting many essentially duplicate applications. 	<p>Cons:</p> <ul style="list-style-type: none"> • Requires minor modifications to the current application process • Applicants don't know in advance exactly what their incentive rate will be

Table 2: Relative merits of three ways to select successful applications

Three reasons have been given for avoiding auctions:

1. ***“It isn’t fair to put together all the work to submit an application only to find it was rejected by an auction.”***

I will admit this is a real psychological problem – but is it any larger of a problem than to put together all the work to submit an application only to find it was rejected by a random number – or even worse – wasn’t it submitted as quickly as other applications. Getting your bid rejected isn’t fun no matter what the reason, but some method has to be used to make the decision, and finding a market-clearing price is the classic way this sort of decision has been made in America.

2. ***“Residential customers and small-scale projects don’t have the sophistication necessary to put together an appropriate bid.”***

This objection makes a lot of sense for first-price, sealed bid auctions. With that auction method, if a bidding mistake is made, then the bidder is compelled to take the price. First-price, sealed bid auctions are not forgiving and require sophisticated and well capitalized bidders. This objection doesn’t apply to a Treasury-style auction. Lots of unsophisticated people buy a bond or two through each Treasury auction. If a bidder makes a low-ball bid, it simply means the bidder will be in the program and will get the market-clearing price. In any event, the pilot solar incentive program, the most a bidder can lose would be the deposit for the bid, because the bidder could decide not to build the actual solar system – just as a few people who got confirmed reservations in 2010 will undoubtedly decide not to build their solar system. This would allow that capacity to be recycled into a later enrollment window.

3. ***“The legal issue of Market Based Rate Authority was discussed. PacifiCorp had one large-scale winning bidder and they are apparently having problems getting market based rate authority at FERC. If the PUC adopted auction mechanisms for additional sizes, each participant would have to obtain market based rate authority which could be unduly burdensome on participants.”***⁵

This legal issue would not apply to small- or mid-scale systems that continued to use the pilot program’s modified net metering approach. If selecting applications based on a first-come/first-served or lottery is legal, then it should be legal to select them based on whether they fall above or below a market-clearing price. With a Treasury-

⁵ Take from Kelcey Brown’s informal summary of the January 20, 2011 UM 1505 Staff Workshop sent to me via a personal email.

style auction, no individual bid sets the incentive rate. Instead, that would still be set by PUC policy, and collectively the “Lowest acceptable incentive rate” figure submitted along with each application simply allows the PUC to determine where to set the rate.

Specific recommendations:

- ***Issue an order to have PGE and Pacific Power add a new field labeled, “Lowest incentive rate you are willing to accept” and tell them that if more people fill out capacity applications during the first 24-hours of an enrollment period, then the incentive rate set via a Treasury-style auction.***
- ***The order should modify OAR 860-084-0195 to say:***
 1. Capacity reservations for small-scale and medium-scale systems are awarded based on a Treasury bill-style auction in which:
 - (a) Applicants are asked what the lowest incentive rate they are willing to accept is.
 - (b) Capacity reservations are accepted in ascending order based on their lowest incentive rate bid until the annual capacity limit for the system size class is reached.
 - (c) For any one utility and in any one size class, all accepted capacity reservations will receive the same incentive rate as the highest accepted capacity reservation.
- ***The order should modify OAR 860-084-0200 (1) to remove the phrase: “based on the capacity reservation date.”***
- ***The order should clarify the intent of 860-084-0360 and 860-084-0365 by changing their titles to:***
 - Volumetric Incentive Rates and Payments – Small and Medium Scale Systems
 - Volumetric Incentive Rates and Payments – Large Scale Systems

Question 3.3: Should the program use shorter enrollment periods?

In the eDocket discussions early last year, people considered adjusting the incentive rates on a quarterly basis. Ultimately, the PUC Commissioners decided it would be too costly to have quarterly enrollment periods, so they decided to go with six-month enrollment periods.

Now that we have a year’s experience with six-month enrollment periods, this decision should be reconsidered. With the hindsight of Monday-morning quarterbacking, it is easy to see this decision was faulty. With six-month enrollment periods and the presumption that prices should be adjusted by only 10-percent each period, it is only possible to raise or lower prices by 20-percent annually. This just isn’t enough to keep up with the dynamic changes occurring in the marketplace

Changing from a six-month to a quarterly enrollment period would be an easy policy decision to implement. No other policies would need to change. This change would have several practical benefits:

- Quarterly enrollment periods would make the program's capacity available in a more constant pattern, so solar installers would have a more predictable, less cyclic pattern of work.
- Quarterly enrollment periods would allow incentive rates to rise or fall as necessary to track marketplace changes.

People wouldn't have to wait up to six months before they can sign up for a capacity allocation.

Specific recommendations:

- *Issue an order to change from six-month to three-month enrollment periods and to spread the available capacity evenly each year across the four quarterly periods.*
- *No changes to the PUC's Oregon Administrative Rules are necessary to implement this change.*

Overall Conclusion

I hope the PUC will adopt all recommendations in this eDocket filing, but if the PUC Commissioners only agree with one or two of them, each set of specific recommendations can stand on their own. My final request, however, is: *Put more market-based information into this pilot program – make it fairer to ratepayers.*