

**From:** [PUCWeb Notification](#)  
**To:** [ConsumerComplaintsWeb](#)  
**Subject:** Notice: A complaint was submitted to PUCWeb  
**Date:** Wednesday, November 2, 2022 5:00:58 PM

---

The following complaint was submitted via PUCWeb:

Name: Tyler Stanford  
Submission Time: Nov 2 2022 4:37PM  
Email: skistanford@msn.com  
Telephone: 208-599-4327  
Address: 664 S Streamleaf Ave  
Star, ID 83669

Name of Utility Company: Idaho power

Contacted Utility: No

Comment: "We need to protect those who have already invested into solar by maintaining those pricing and net metering based on install dates!"

-----  

---

**From:** [Casey O'Leary](#)  
**To:** [Jan Noriyuki](#)  
**Subject:** Comments on #IPC-E-22-22  
**Date:** Thursday, November 3, 2022 7:15:07 AM

---

**CAUTION: This email originated outside the State of Idaho network. Verify links and attachments BEFORE you click or open, even if you recognize and/or trust the sender. Contact your agency service desk with any concerns.**

---

Casey O'Leary  
digger@earthlydelightsfarm.com

Thank you for the opportunity to submit comments regarding case #IPC-E-22-22, Idaho Power Company's application to complete the study review phase of the comprehensive study of costs and benefits of on-site customer generation. The proposed change to Idaho's net metering rates is too low compared to independent analyses conducted. At this crucial time, we should be encouraging more de-centralized power generation and rewarding homeowners and businesses who choose to purchase, install, and maintain panels at their own expense to recoup some of their costs associated. Idaho Power benefits from the power these homes and businesses generate, and should pay fair prices!

In its independent analysis, Crossborder Energy identifies a number of costs and benefits that are quantifiable, measurable, and affect rates. After including these important variables and applying sound analysis, they concluded the export credit rate should be much greater than what Idaho Power concluded in its VODER study.

I encourage you to ask Idaho Power Company to redo the VODER study to include all factors that affect the price of customer generated solar power.

**From:** [Richard Randolph \(bfdtrk6@gmail.com\) Sent You a Personal Message](mailto:bfdtrk6@gmail.com)  
**To:** [Jan Noriyuki](#)  
**Subject:** IPC-E-22-22 Public Comment  
**Date:** Thursday, November 3, 2022 7:46:19 AM

---

CAUTION: This email originated outside the State of Idaho network. Verify links and attachments BEFORE you click or open, even if you recognize and/or trust the sender. Contact your agency service desk with any concerns.

Dear Idaho Public Utilities Commission,

we made a conscious decision to put solar of our roof. we did this knowing that we will be helping our environment. we also did this to reduced our power bill. now idaho power has produced a trumped up study to say that they need to stop net metering. i urge you to tell idaho power to relook at getting a fair study done .

Please look carefully at the independent study conducted by Crossborder Energy, which points out several shortcomings in Idaho Power's own study on the costs and benefits of customer-owned rooftop solar. Idaho Power will use this study to justify trying to reduce compensation rates to solar owners. To arrive at fair rates, we first need a fair study.

Crossborder's study states, "We conclude that Idaho Power's choice of assumptions and calculation methods significantly undervalue the five components that the utility quantified. We present our own calculations of an ECR with these five elements. In addition, the VODER Study fails to quantify important benefits of distributed solar that the Commission directed the utility to analyze in Order No. 35284 -- benefits that are known and measurable, will impact rates, and will benefit Idaho ratepayers and citizens.?"

Idahoans deserve solar rates based on a more fair and complete analysis. I urge you to reject Idaho Power's study and look to Crossborder's study as a more accurate measure of the value (to ALL ratepayers) of customer-owned solar power.

Sincerely,

Richard Randolph  
602 N Archer St  
Boise, ID 83706  
[bfdtrk6@gmail.com](mailto:bfdtrk6@gmail.com)  
(208) 484-7875

This message was sent by KnowWho, as a service provider, on behalf of an individual associated with Sierra Club. If you need more information, please contact Lillian Miller at Sierra Club at [core.help@sierraclub.org](mailto:core.help@sierraclub.org) or (415) 977-5500.

**From:** [Russell McKinley](#)  
**To:** [Jan Noriyuki](#)  
**Subject:** case # IPC-E-22-22  
**Date:** Thursday, November 3, 2022 7:57:26 AM

---

CAUTION: This email originated outside the State of Idaho network. Verify links and attachments BEFORE you click or open, even if you recognize and/or trust the sender. Contact your agency service desk with any concerns.

Thank you for allowing me to comment in writing. I am out of town and would attend the meeting in person if possible.

The study done by Idaho Power is so biased it should remove them from the matter before us. By decreasing compensation rates privately generated solar power becomes less affordable to Idahoans. This is exactly the opposite of what needs to happen.

I am reminded that Idaho Power is always telling us to reduce and conserve energy. This past summer they were warning customers of rolling brown outs. Idaho Power needs private power generators, they just don't want to fairly compensate us. Please consider Crossborder Energy's study that clearly shows Idaho Power used outdated data and selected methodologies with the goal of undervaluing customer owned generation. I would go so far as to say Idaho Power's study is so biased and shamelessly self-serving that it is an insult to the commission and Idaho Power customers. As I always state, I have a real problem with a privately held public utility. Thank you for considering my comments.

Regards, Russell McKinley

**From:** [Paul Poorman](#)  
**To:** [Jan Noriyuki](#)  
**Subject:** IPUC Case IPC-E-22-22 Idaho Power Net Metering  
**Date:** Thursday, November 3, 2022 8:00:19 AM  
**Attachments:** [2022-1103-IPUC Idaho Power Net Metering Reimbursement Rate.pdf](#)

---

**CAUTION: This email originated outside the State of Idaho network. Verify links and attachments BEFORE you click or open, even if you recognize and/or trust the sender. Contact your agency service desk with any concerns.**

---

Dear IPUC Secretary,

Please accept the attached comments for tonight's hearing on case IPC-E-22-22 regarding Idaho Power's Net Metering proposal.

Regards,

Paul Poorman  
5230 N Black Cat Rd  
Meridian, ID

# **IPUC Idaho Power Net Metering Reimbursement Rate Public Hearing Comments**

**Case Number: IPC-E-22-22**

**Paul Poorman**

**November 3, 2022**

As a private citizen and homeowner with Rooftop Solar, and also as an Idaho Power stockholder, I am writing these comments to express my concern with Idaho Power's analysis of reimbursement rates for customer-generated power. In trying to make things "fair" for their customers, they end up leaving the most important part of the analysis off the table. The result which basically cuts the net metering reimbursement rate in half, they essentially will torpedo any new customer investment in self-generation. To understand why I feel this way, let us look at some trends.

First, Idaho's population continues to surge. More people, more homes, more businesses, and more schools means that power generation is going to have to increase. There aren't any more rivers to dam, and Idaho Power has pledged to eliminate fossil fuel power from their mix.

Next, consider the increasing popularity of electric vehicles. As the number of EV's increases over the next decade and beyond, the net power consumed by each Idaho resident is inevitably going to increase. These two factors point to an exponential increase in power consumption.

As climate change begins to dominate our environment, the likelihood of extended droughts will increase in the Pacific Northwest. Dependence on the hydropower backbone for primary power service will become increasingly tenuous.

The most glaring part of the analysis that is missing is the accounting for the deleterious impacts of burning fossil fuels. Over 30% of Idaho Power's generation comes from sources that emit greenhouse gasses, and depending on the mix of purchased power, it could be almost 50%. Customers that consume this power really should be paying their fair share of the costs that climate change is wreaking on our environment, economy, and habitants. Customers that generate their own renewable power, especially those that have achieved net zero, do not have this baggage.

Lastly, Idaho is blessed with some of the best solar resources in the country.

The result of all of these trends is that Idaho Power is going to have to provide a lot more power and a lot more power per capita with a shrinking hydro resource. Customer-sourced generation is going to be needed just to keep up with demand - Idaho Power and its suppliers aren't going to be able to keep up with the demand growth.

Rooftop solar provides many benefits that Idaho Power doesn't seem to recognize. First is that the transmission losses are essentially zero. Any power produced by customers travels a few doors down where it is consumed by other users, leaving few electrons being turned into heat. Contrast this with large solar farms that have to move their output dozens, if not hundreds of miles. With rooftop or tower solar installations, the environmental footprint is zero. No land space is being used above and beyond the

buildings that the systems are installed on. In contrast, solar farms consume huge amounts of land, taking away habitat for plants and animals.

By spreading out the generation, risks of a large system outage are greatly reduced. In this day and age of vandalism and violence, a large installation becomes a juicy target for those that wish to disrupt our society.

Idaho Power should welcome customer generation since all of the capital cost is shouldered by the customer. And the excess power that is generated costs Idaho Power only the transmission overhead to move it to adjacent power users. Then they turn around and sell it to other customers for 8 - 12 cents a KiloWatt-hour.

Idaho Power needs to embrace this clean, reliable resource, rather than trying to shut it down. Using this daytime resource, combined with large numbers of EV batteries and time-of-day billing seems like a model that is much better suited to the future of electric power vs. the fossil fuel beast that is feeding the climate change monster. Rather than charging customers that are striving to solve Idaho Power's generation concerns, they need to be working to reduce usage of power that is generated from fossil fuels. I strongly urge you as IPUC commissioners to send Idaho Power back to the drawing board to come up with the right answer to the net metering reimbursement rate question.

**From:** [Jacob Walker \(jlwalk02@gmail.com\) Sent You a Personal Message](mailto:jlwalk02@gmail.com)  
**To:** [Jan Noriyuki](#)  
**Subject:** IPC-E-22-22 Public Comment  
**Date:** Thursday, November 3, 2022 8:01:09 AM

---

CAUTION: This email originated outside the State of Idaho network. Verify links and attachments BEFORE you click or open, even if you recognize and/or trust the sender. Contact your agency service desk with any concerns.

Dear Idaho Public Utilities Commission,

I installed solar to insulate my family from potential future hardships on the electrical grid and allow us to produce our own energy. now i know we are not allowed to disconnect from the grid but i effective could. i produce more power than i use on most days of the year. i wanted that extra energy to help keep rates low for others around me. Not for idaho power to tell me that its not worth what they are giving me already. I know solar generation helps them. but if they don't say that its not, then they would have no reason to keep raising rates. i am not asking idaho power to pay me out. so they are not out of pocket even now. they give me energy credits and keep that money. don't devalue the good i am trying to do.

Please look carefully at the independent study conducted by Crossborder Energy, which points out several shortcomings in Idaho Power's own study on the costs and benefits of customer-owned rooftop solar. Idaho Power will use this study to justify trying to reduce compensation rates to solar owners. To arrive at fair rates, we first need a fair study.

Crossborder's study states, "We conclude that Idaho Power's choice of assumptions and calculation methods significantly undervalue the five components that the utility quantified. We present our own calculations of an ECR with these five elements. In addition, the VODER Study fails to quantify important benefits of distributed solar that the Commission directed the utility to analyze in Order No. 35284 -- benefits that are known and measurable, will impact rates, and will benefit Idaho ratepayers and citizens.?"

Idahoans deserve solar rates based on a more fair and complete analysis. I urge you to reject Idaho Power's study and look to Crossborder's study as a more accurate measure of the value (to ALL ratepayers) of customer-owned solar power.

Sincerely,

Jacob Walker  
1060 West Elias Drive  
Meridian, ID 83642  
[jlwalk02@gmail.com](mailto:jlwalk02@gmail.com)  
(208) 585-8232

This message was sent by KnowWho, as a service provider, on behalf of an individual associated with Sierra Club. If you need more information, please contact Lillian Miller at Sierra Club at [core.help@sierraclub.org](mailto:core.help@sierraclub.org) or (415) 977-5500.



**From:** [Scott Williams \(SCOTTM.WILLIAMS@YAHOO.COM\)](mailto:SCOTTM.WILLIAMS@YAHOO.COM) Sent You a Personal Message  
**To:** [Jan Noriyuki](#)  
**Subject:** IPC-E-22-22 Public Comment  
**Date:** Thursday, November 3, 2022 8:12:40 AM

---

CAUTION: This email originated outside the State of Idaho network. Verify links and attachments BEFORE you click or open, even if you recognize and/or trust the sender. Contact your agency service desk with any concerns.

Dear Idaho Public Utilities Commission,

We need the commission to conduct a fair and complete study on solar power. It needs to include the environmental impacts of traditional coal and gas power vs the benefits of solar. It's never been more clear with the record heat in the NW this year, the impacts of carbon emissions. We need more programs to encourage people to install solar. Not less!

Please look carefully at the independent study conducted by Crossborder Energy, which points out several shortcomings in Idaho Power's own study on the costs and benefits of customer-owned rooftop solar. Idaho Power will use this study to justify trying to reduce compensation rates to solar owners. To arrive at fair rates, we first need a fair study.

Crossborder's study states, "We conclude that Idaho Power's choice of assumptions and calculation methods significantly undervalue the five components that the utility quantified. We present our own calculations of an ECR with these five elements. In addition, the VODER Study fails to quantify important benefits of distributed solar that the Commission directed the utility to analyze in Order No. 35284 -- benefits that are known and measurable, will impact rates, and will benefit Idaho ratepayers and citizens.?"

Idahoans deserve solar rates based on a more fair and complete analysis. I urge you to reject Idaho Power's study and look to Crossborder's study as a more accurate measure of the value (to ALL ratepayers) of customer-owned solar power.

Sincerely,

Scott Williams  
1112 N. Harrison Blvd  
Boise, ID 83702  
[SCOTTM.WILLIAMS@YAHOO.COM](mailto:SCOTTM.WILLIAMS@YAHOO.COM)  
(408) 781-0021

This message was sent by KnowWho, as a service provider, on behalf of an individual associated with Sierra Club. If you need more information, please contact Lillian Miller at Sierra Club at [core.help@sierraclub.org](mailto:core.help@sierraclub.org) or (415) 977-5500.

**From:** [Jeff D. Luff \(luffjd@gmail.com\) Sent You a Personal Message](mailto:luffjd@gmail.com)  
**To:** [Jan Noriyuki](#)  
**Subject:** IPC-E-22-22 Public Comment  
**Date:** Thursday, November 3, 2022 9:04:46 AM

---

CAUTION: This email originated outside the State of Idaho network. Verify links and attachments BEFORE you click or open, even if you recognize and/or trust the sender. Contact your agency service desk with any concerns.

Dear Idaho Public Utilities Commission,

Customer generated power should be considered a strengthening action to assist our potentially frail electrical supply system. History shows us that diversified systems of anything prove to increase its stability and reliability. The "results" of Idaho Power's study call for actions that would discourage future and present customer generated power decisions which would disinsensitize many future potential investments in system strength and diversity. In light of the fact that we have recognized that clean electricity is the power source of the future, this suggested action by Idaho Power flies in the face of responsible management and governance. Corporate, read shareholder, profits should not be the driving force behind management decisions, Idaho Power shareholders are already guaranteed a profit due to their monopoly. Customer generated systems that contribute to the community electricity grid are also "shareholders", dependent on that same grid to share their contribution.

Please look carefully at the independent study conducted by Crossborder Energy, which points out several shortcomings in Idaho Power's own study on the costs and benefits of customer-owned rooftop solar. Idaho Power will use this study to justify trying to reduce compensation rates to solar owners. To arrive at fair rates, we first need a fair study.

Crossborder's study states, "We conclude that Idaho Power's choice of assumptions and calculation methods significantly undervalue the five components that the utility quantified. We present our own calculations of an ECR with these five elements. In addition, the VODER Study fails to quantify important benefits of distributed solar that the Commission directed the utility to analyze in Order No. 35284 -- benefits that are known and measurable, will impact rates, and will benefit Idaho ratepayers and citizens.?"

Idahoans deserve solar rates based on a more fair and complete analysis. I urge you to reject Idaho Power's study and look to Crossborder's study as a more accurate measure of the value (to ALL ratepayers) of customer-owned solar power.

Sincerely,

Jeff D. Luff  
3300 Highway 55  
New Meadows, ID 83654  
[luffjd@gmail.com](mailto:luffjd@gmail.com)  
(208) 315-1964

This message was sent by KnowWho, as a service provider, on behalf of an individual associated with Sierra Club. If you need more information, please contact Lillian Miller at Sierra Club at [core.help@sierraclub.org](mailto:core.help@sierraclub.org) or (415) 977-5500.

**From:** [Robert Gross \(janbob144@gmail.com\) Sent You a Personal Message](mailto:janbob144@gmail.com)  
**To:** [Jan Noriyuki](#)  
**Subject:** IPC-E-22-22 Public Comment  
**Date:** Thursday, November 3, 2022 9:30:56 AM

---

CAUTION: This email originated outside the State of Idaho network. Verify links and attachments BEFORE you click or open, even if you recognize and/or trust the sender. Contact your agency service desk with any concerns.

Dear Idaho Public Utilities Commission,

My wife and I recently invested thousands of dollars to "do the right thing" by increasing the amount of solar generated electricity in our neighborhood. We are not trying to make a killing, instead we just wanted to be part of the solution however small that part may be. With the proposal by Idaho Power we will be losing the ability to obtain the return on our investment before we die. The current proposal will allow Idaho Power to profit from our investment not theirs, due to the undervaluing rates provided by their study.

Please look carefully at the independent study conducted by Crossborder Energy, which points out several shortcomings in Idaho Power's own study on the costs and benefits of customer-owned rooftop solar. Idaho Power will use this study to justify trying to reduce compensation rates to solar owners. To arrive at fair rates, we first need a fair study.

Crossborder's study states, "We conclude that Idaho Power's choice of assumptions and calculation methods significantly undervalue the five components that the utility quantified. We present our own calculations of an ECR with these five elements. In addition, the VODER Study fails to quantify important benefits of distributed solar that the Commission directed the utility to analyze in Order No. 35284 -- benefits that are known and measurable, will impact rates, and will benefit Idaho ratepayers and citizens.?"

Idahoans deserve solar rates based on a more fair and complete analysis. I urge you to reject Idaho Power's study and look to Crossborder's study as a more accurate measure of the value (to ALL ratepayers) of customer-owned solar power.

Sincerely,

Robert Gross  
5233 S Chinook Ave  
Boise, ID 83709  
[janbob144@gmail.com](mailto:janbob144@gmail.com)  
(208) 869-4670

This message was sent by KnowWho, as a service provider, on behalf of an individual associated with Sierra Club. If you need more information, please contact Lillian Miller at Sierra Club at [core.help@sierraclub.org](mailto:core.help@sierraclub.org) or (415) 977-5500.

**From:** [David Cannamela \(dacannamela@gmail.com\) Sent You a Personal Message](mailto:dacannamela@gmail.com)  
**To:** [Jan Noriyuki](#)  
**Subject:** IPC-E-22-22 Public Comment  
**Date:** Thursday, November 3, 2022 9:34:06 AM

---

CAUTION: This email originated outside the State of Idaho network. Verify links and attachments BEFORE you click or open, even if you recognize and/or trust the sender. Contact your agency service desk with any concerns.

Dear Idaho Public Utilities Commission,

The latest UN report on climate confirms what we already knew- the planet has a serious fever, we caused it and we're not doing enough to fix it. We- the collective we- corporations, small businesses and individuals should be doing all we can to reverse global warming, No one is immune to the impacts of climate change- NO ONE! And no amount of money will offer protection from it. Sadly, our children and grandchildren and their children and grandchildren are inheriting a planet that is giving us a vivid picture of what's to come- and its not pretty.

When the bottom line metric is money- the planet gets sacrificed for quarterly earnings. The bottom line metric should be social good- how many people did we feed, house, educate, provide health care for, etc. We don't need to create more millionaires and billionaires-

we need to ensure that everyone is OK- that everyone has a reasonable standard of living where all of the basic needs are met- this at the very least.

Do your part!

Please look carefully at the independent study conducted by Crossborder Energy, which points out several shortcomings in Idaho Power's own study on the costs and benefits of customer-owned rooftop solar. Idaho Power will use this study to justify trying to reduce compensation rates to solar owners. To arrive at fair rates, we first need a fair study.

Crossborder's study states, "We conclude that Idaho Power's choice of assumptions and calculation methods significantly undervalue the five components that the utility quantified. We present our own calculations of an ECR with these five elements. In addition, the VODER Study fails to quantify important benefits of distributed solar that the Commission directed the utility to analyze in Order No. 35284 -- benefits that are known and measurable, will impact rates, and will benefit Idaho ratepayers and citizens.?"

Idahoans deserve solar rates based on a more fair and complete analysis. I urge you to reject Idaho Power's study and look to Crossborder's study as a more accurate measure of the value (to ALL ratepayers) of customer-owned solar power.

Sincerely,

David Cannamela  
4087 S SUMTER WAY  
Boise, ID 83709  
[dacannamela@gmail.com](mailto:dacannamela@gmail.com)  
(208) 890-1319

This message was sent by KnowWho, as a service provider, on behalf of an individual associated with Sierra Club. If you need more information, please contact Lillian Miller at Sierra Club at [core.help@sierraclub.org](mailto:core.help@sierraclub.org) or (415) 977-5500.

**From:** [James Fleming \(jamespfleming@gmail.com\) Sent You a Personal Message](mailto:jamespfleming@gmail.com)  
**To:** [Jan Noriyuki](#)  
**Subject:** IPC-E-22-22 Public Comment  
**Date:** Thursday, November 3, 2022 10:19:56 AM

---

CAUTION: This email originated outside the State of Idaho network. Verify links and attachments BEFORE you click or open, even if you recognize and/or trust the sender. Contact your agency service desk with any concerns.

Dear Idaho Public Utilities Commission,

We installed a solar array last year to supplement our current and long-term future energy costs, that, and be good environmentally responsible citizens and ease the ever increasing demand on our already outdated and weak electrical grid. Privately owned homes that provide on-site generation systems only represents a little over 1% of all solar generation in Idaho - how can this be an issue for Idaho Power business?

Don't let Idaho Power change the current credit rate structure, it would have a detrimental impact on the adoption of new solar systems on residential roofs in Idaho. We need these kinds of alternative and sustainable energy sources as the population of Idaho ever increases and taxes our grid. Solar and wind are key power sources available to us and should be welcomed by Idaho Power, not seen as a competitor. Don't let this type of "free" energy be still-born in Idaho by a large energy company that simply needs to embrace it. JF, Twin Falls

Please look carefully at the independent study conducted by Crossborder Energy, which points out several shortcomings in Idaho Power's own study on the costs and benefits of customer-owned rooftop solar. Idaho Power will use this study to justify trying to reduce compensation rates to solar owners. To arrive at fair rates, we first need a fair study.

Crossborder's study states, "We conclude that Idaho Power's choice of assumptions and calculation methods significantly undervalue the five components that the utility quantified. We present our own calculations of an ECR with these five elements. In addition, the VODER Study fails to quantify important benefits of distributed solar that the Commission directed the utility to analyze in Order No. 35284 -- benefits that are known and measurable, will impact rates, and will benefit Idaho ratepayers and citizens.?"

Idahoans deserve solar rates based on a more fair and complete analysis. I urge you to reject Idaho Power's study and look to Crossborder's study as a more accurate measure of the value (to ALL ratepayers) of customer-owned solar power.

Sincerely,

James Fleming  
1098 Pinewood Circle  
Twin Falls, ID 83301  
[jamespfleming@gmail.com](mailto:jamespfleming@gmail.com)  
(208) 316-7594

This message was sent by KnowWho, as a service provider, on behalf of an individual associated with Sierra Club. If you need more information, please contact Lillian Miller at Sierra Club at [core.help@sierraclub.org](mailto:core.help@sierraclub.org) or (415) 977-5500.

**From:** [Matthew Johnson \(matthew.james.johnson@outlook.com\)](mailto:matthew.james.johnson@outlook.com) Sent You a Personal Message  
**To:** [Jan Noriyuki](#)  
**Subject:** IPC-E-22-22 Public Comment  
**Date:** Thursday, November 3, 2022 10:29:16 AM

---

CAUTION: This email originated outside the State of Idaho network. Verify links and attachments BEFORE you click or open, even if you recognize and/or trust the sender. Contact your agency service desk with any concerns.

Dear Idaho Public Utilities Commission,

First adopters of solar in Idaho want to make a change, but also want to be a part of that change. Idaho Power is inhibiting solar adoption and taking the benefits from those who spent thousands to start building a cleaner Idaho.

Please look carefully at the independent study conducted by Crossborder Energy, which points out several shortcomings in Idaho Power's own study on the costs and benefits of customer-owned rooftop solar. Idaho Power will use this study to justify trying to reduce compensation rates to solar owners. To arrive at fair rates, we first need a fair study.

Crossborder's study states, "We conclude that Idaho Power's choice of assumptions and calculation methods significantly undervalue the five components that the utility quantified. We present our own calculations of an ECR with these five elements. In addition, the VODER Study fails to quantify important benefits of distributed solar that the Commission directed the utility to analyze in Order No. 35284 -- benefits that are known and measurable, will impact rates, and will benefit Idaho ratepayers and citizens.?"

Idahoans deserve solar rates based on a more fair and complete analysis. I urge you to reject Idaho Power's study and look to Crossborder's study as a more accurate measure of the value (to ALL ratepayers) of customer-owned solar power.

Sincerely,

Matthew Johnson  
1818 East Deerhill Drive  
Meridian, ID 83642  
[matthew.james.johnson@outlook.com](mailto:matthew.james.johnson@outlook.com)  
(360) 823-8135

This message was sent by KnowWho, as a service provider, on behalf of an individual associated with Sierra Club. If you need more information, please contact Lillian Miller at Sierra Club at [core.help@sierraclub.org](mailto:core.help@sierraclub.org) or (415) 977-5500.

**From:** [RMK](#)  
**To:** [Jan Noriyuki](#)  
**Subject:** Customer generated solar power  
**Date:** Thursday, November 3, 2022 11:52:10 AM

---

CAUTION: This email originated outside the State of Idaho network. Verify links and attachments BEFORE you click or open, even if you recognize and/or trust the sender. Contact your agency service desk with any concerns.

Hi Jan,

I just read 1/2 dozen of the comments and found most are missing the key point, what is the value of the exported electricity to Idaho Power.

The power generated June through September is worth more than just the offset cost to generate it at an Idaho power generating plant. The price of Natural gas, coal, or the available water in storage sets a base price but solar is being produced during the peak demand periods (resources are near limits and prices are higher) and at the point of use, bypassing all of the heavily loaded distribution network, saving Idaho Power the cost of upgrading their network as quickly as would be needed without solar power.

One area I think customers are getting a very valuable benefit is the carrying over of excess electricity into the winter months. I would call an October 1st, 1 cent per KWh storage fee a fair and reasonable price for the service Idaho Power is providing. At some point on site storage will become the preferred option and all of the benefits and costs associated with Customer generated Solar will not be an issue for the IPUC or Idaho Power

Regards,  
Don Hus  
208-867-9535

**From:** [PUCWeb Notification](#)  
**To:** [Jan Noriyuki](#)  
**Subject:** Notice: A comment was submitted to PUCWeb  
**Date:** Thursday, November 3, 2022 2:00:07 PM

---

The following comment was submitted via PUCWeb:

Name: Terry Maret  
Submission Time: Nov 3 2022 1:04PM  
Email: terrymaret@gmail.com  
Telephone: 208-484-3915  
Address: 4083 Argonaut  
Boise, ID 83709

Name of Utility Company: Idaho Power

Case ID: IPC-E-22-22

Comment: "To: Idaho Public Utility Commission In 2017 we installed solar panels to our home to do our part to reduce fossil fuel consumption that has resulted in global warming and enormous environmental damage from mercury emissions and other air or water borne pollutants. The cost and benefits of this solar installation on our home were based on net metering with Idaho Power. It would be unfair to have the rules changed now. Our up front investment costs would be in jeopardy. Institutions and utilities should be encouraging this move towards alternative energy sources and not penalizing those who feel we can do better to sustain our planet and way of life. Idaho Power's internal study is unfairly singling out solar customers. The Company contends that because net-metering, solar customers reduce the number of kilowatt-hours they purchase from the utility they avoid paying their fair share of fixed costs. Net-metering solar customers also provide power to their neighbors and can help reduce the need for expensive transmission and distribution infrastructure necessary to move electricity from power plants that may be hundreds of miles away. If the Company wants to look at cost shifting, they need to take a much broader look at the issue rather than just focus on the tiny changes that net-metering may make. For your information, solar now employs more people in the U.S. electricity generation than oil, coal and gas combined. Idaho needs to pass legislation to offer more incentives to encourage solar systems. There are so many new urban developments without solar in the Treasure Valley...what a shame and missed opportunity for an area with an abundance of solar energy. Idaho powers in-house study results may jeopardize this growing industry in Idaho and cast a shadow of uncertainty in the marketplace. I look forward to attending the public hearing in Boise on November 3, 2022 on this issue. "

-----

---



**From:** [Leandra Kelleher \(leandrakelleher@gmail.com\) Sent You a Personal Message](mailto:leandrakelleher@gmail.com)  
**To:** [Jan Noriyuki](#)  
**Subject:** IPC-E-22-22 Public Comment  
**Date:** Thursday, November 3, 2022 2:15:57 PM

---

CAUTION: This email originated outside the State of Idaho network. Verify links and attachments BEFORE you click or open, even if you recognize and/or trust the sender. Contact your agency service desk with any concerns.

Dear Idaho Public Utilities Commission,

I am a retired homeowner who believes in conservation of our resources. One way to do that is by using renewable resources such as wind and sun. Upon purchasing my new home, I decided to install a solar system on my roof. I believed the system would save non-renewable resources and help contribute to a healthier ecosystem. Upon my purchase I was told Idaho Power believed the same because it was willing to give my generated kilowatt hours back to me for electricity I would need to run my home. Now Idaho Power is saying my efforts and expenditures are not important or appreciated. It has decided not to give back as originally promised based on false information. All research shows solar systems work for the average homeowner. Idaho Power does not believe in community or it would not change the original agreement made to solar system owners.

Please look carefully at the independent study conducted by Crossborder Energy, which points out several shortcomings in Idaho Power's own study on the costs and benefits of customer-owned rooftop solar. Idaho Power will use this study to justify trying to reduce compensation rates to solar owners. To arrive at fair rates, we first need a fair study.

Crossborder's study states, "We conclude that Idaho Power's choice of assumptions and calculation methods significantly undervalue the five components that the utility quantified. We present our own calculations of an ECR with these five elements. In addition, the VODER Study fails to quantify important benefits of distributed solar that the Commission directed the utility to analyze in Order No. 35284 -- benefits that are known and measurable, will impact rates, and will benefit Idaho ratepayers and citizens.?"

Idahoans deserve solar rates based on a more fair and complete analysis. I urge you to reject Idaho Power's study and look to Crossborder's study as a more accurate measure of the value (to ALL ratepayers) of customer-owned solar power.

Sincerely,

Leandra Kelleher  
4854 W Rose Angel Ct  
Eagle, ID 83616  
[leandrakelleher@gmail.com](mailto:leandrakelleher@gmail.com)  
(406) 360-9580

This message was sent by KnowWho, as a service provider, on behalf of an individual associated with Sierra Club. If you need more information, please contact Lillian Miller at Sierra Club at [core.help@sierraclub.org](mailto:core.help@sierraclub.org) or (415) 977-5500.

**From:** [Dan Michaud \(danmeshow@gmail.com\) Sent You a Personal Message](mailto:danmeshow@gmail.com)  
**To:** [Jan Noriyuki](#)  
**Subject:** IPC-E-22-22 Public Comment  
**Date:** Thursday, November 3, 2022 12:00:57 PM

---

CAUTION: This email originated outside the State of Idaho network. Verify links and attachments BEFORE you click or open, even if you recognize and/or trust the sender. Contact your agency service desk with any concerns.

Dear Idaho Public Utilities Commission,

It appears to me that Idaho Power management is deceitful about their true intentions. As Crossborder Energy pointed out, the Commission directed the utility to analyze certain benefits to Idaho Power (ORDER 35284) which have been ignored by the management of Idaho Power.

The PUC needs to hold Idaho Power management as untruthful and not in line with our community and what is best for customers. Experts have made it clear that Idaho Power did not do justice in their report and it should be rejected.

Please look carefully at the independent study conducted by Crossborder Energy, which points out several shortcomings in Idaho Power's own study on the costs and benefits of customer-owned rooftop solar. Idaho Power will use this study to justify trying to reduce compensation rates to solar owners. To arrive at fair rates, we first need a fair study.

Crossborder's study states, "We conclude that Idaho Power's choice of assumptions and calculation methods significantly undervalue the five components that the utility quantified. We present our own calculations of an ECR with these five elements. In addition, the VODER Study fails to quantify important benefits of distributed solar that the Commission directed the utility to analyze in Order No. 35284 -- benefits that are known and measurable, will impact rates, and will benefit Idaho ratepayers and citizens.?"

Idahoans deserve solar rates based on a more fair and complete analysis. I urge you to reject Idaho Power's study and look to Crossborder's study as a more accurate measure of the value (to ALL ratepayers) of customer-owned solar power.

Sincerely,

Dan Michaud  
2760 w Homer Road  
Eagle, ID 83616  
[danmeshow@gmail.com](mailto:danmeshow@gmail.com)  
(208) 939-1377

This message was sent by KnowWho, as a service provider, on behalf of an individual associated with Sierra Club. If you need more information, please contact Lillian Miller at Sierra Club at [core.help@sierraclub.org](mailto:core.help@sierraclub.org) or (415) 977-5500.



**From:** [David Bartle](#)  
**To:** [Jan Noriyuki](#)  
**Cc:** [Adam Rush](#)  
**Subject:** Comments for public hearing for case IPC-E-22-22  
**Date:** Thursday, November 3, 2022 2:19:16 PM  
**Attachments:** [1. austin\\_vos\\_paper\\_final\\_2017-06-16.pdf](#)  
[understandingTheValueOfSolarForResidentialBills.pdf](#)

---

**CAUTION: This email originated outside the State of Idaho network. Verify links and attachments BEFORE you click or open, even if you recognize and/or trust the sender. Contact your agency service desk with any concerns.**

---

Hello,

These comments are regarding the Idaho Power VODER study, case number IPC-E-22-22

I have an interest in solar power for my business so I have been watching the net metering issue for the last couple years. I need resolution to this issue with some confidence of stability so I can make a financial decision. The question “What is a fair value of extra solar generation?” is being addressed in many areas of the country. I did a little research looking at other power companies and came across a unique example from Austin Energy in Austin, TX.

I have attached two documents regarding Austin Energy’s net metering scheme. One is an example residential electric bill showing how the “value of solar” is applied. The other is a detailed study published in 2017 by a group from Yale University. The title of the study is “The Effect of Austin Energy’s Value-of-Solar Tariff on Solar Installation Rates”.

From the Yale study:

"Austin Energy officials determined that it was necessary to replace net metering with a tariff structure that imposed some grid costs on PV customers while also recognizing the value their PV systems provided to the grid.<sup>1</sup>In addition, the utility sought a structure that would enable them to properly charge PV customers for consumption with more dynamic rate structures, rather than crediting customers with a simple lump sum based on their excess production. The result was the development of the VOST, designed to fairly price electricity for residential PV customers without unduly burdening them or giving them a free pass to utilize the electric system without appropriately paying their fair share of costs. "

Briefly, the Austin Energy net-metering scheme charges for energy use on a tiered usage scale (to encourage conservation), but pays back the customer solar power generated at a fixed kWh rate that is determined to be a fair value for all of Austin Energy’s customers. Because Austin Energy is a not-for-profit municipal power company, their studies for determining “value of solar” should be objective and perhaps subject to less bias than a privately owned utility.

Thank you for the opportunity to comment.

—  
**David A. Bartle**  
Mobile: 208 761 3525

---

THE EFFECT OF AUSTIN ENERGY'S  
VALUE-OF-SOLAR TARIFF  
ON SOLAR INSTALLATION RATES

---

THUY PHUNG, ISABELLE RIU, NATE KAUFMAN,  
LUCY KESSLER, MARIA AMODIO, GYAN DE SILVA



Yale School of Forestry  
& Environmental Studies

MAY 9, 2017

## EXECUTIVE SUMMARY

---

Austin Energy, the municipal utility in Austin, Texas, introduced the first Value-of-Solar tariff (VOST) in the United States for its residential customers in 2012. The VOST replaced Austin Energy's net metering policy, which had allowed for solar customers to sell electricity generated in excess of their consumption back to the utility at the electric retail rate. Under the VOST, customers are charged for their electricity usage and receive a separate credit on each kilowatt-hour (kWh) their solar panels deliver to the grid. The VOST aimed to cover the infrastructure costs associated with distributed generation, while fairly compensating customers for the electricity they produced.

Using the difference-in-differences technique to assess the impact of the VOST on residential solar adoption rates, we analyzed solar installation rates before and after the tariff was implemented. The analysis controls for other variables to account for aggregate time trends, seasonality, population, average household income, political affiliation, solar rebates, installation cost, and retail electricity rate. We use two control groups to compare with Austin's solar installation data: 1) the rest of the state of Texas and 2) the cities of San Antonio and Dallas.

Our analysis suggests that the VOST increased solar installations rates in Austin when compared to the rest of Texas. However, this positive result was not statistically significant when compared to San Antonio and Dallas. This lack of significance may be due to the smaller sample size when using San Antonio and Dallas as a control group. However, it may suggest that there are unobserved factors or trends not relating to VOST that occurred in the more progressive cities and caused the increase in solar installations rates in Austin compared to the rest of Texas. While we cannot make any conclusive statements about the impact of the VOST on solar installations in Austin, we discuss lessons learned from the implementation of this new rate structure in Austin and how replicable they are to other locations in the United States.

## INTRODUCTION

---

In October 2012, Austin Energy, the municipal electric utility in the city of Austin, Texas, became the first utility in the United States to implement a Value-of-Solar tariff (VOST) for residential electricity customers with solar photovoltaic (PV) systems on their homes. The tariff was implemented to supersede Austin's net metering policy, which had allowed for PV customers to effectively sell electricity generated in excess of their demand back to the utility at the electric retail rate.

Austin Energy officials determined that it was necessary to replace net metering with a tariff structure that imposed some grid costs on PV customers while also recognizing the value their PV systems provided to the grid.<sup>1</sup> In addition, the utility sought a structure that would enable them to properly charge PV customers for consumption with more dynamic rate structures, rather than crediting customers with a simple lump sum based on their excess production. The result was the development of the VOST, designed to fairly price electricity for residential PV customers without unduly burdening them or giving them a free pass to utilize the electric system without appropriately paying their fair share of costs.

As debate intensifies across the United States as to whether, when, and how net metering policies should be phased out and with what policies they should be replaced, Austin Energy's development of and experience with the VOST could help guide other utilities and regulatory commissions. However, while the concept of a VOST may be acceptable to utilities and solar advocates alike, the devil is in the details. A Value-of-Solar calculation that is favored by a utility may discourage solar adoption in practice, and a tariff structure that incentivizes adoption at a rate in line with a retail net metering program may place undue cost burdens on customers without PV and on utilities.

Because the VOST program was implemented by Austin Energy in part to ensure that solar customers would pay what the utility deemed to be an equitable proportion of fixed infrastructure costs, we expected that the new tariff structure would be less attractive to prospective solar customers, and would result in a decrease in solar installation rates in Austin. In the sections below, we first discuss the background of the net metering debate, Austin Energy's decision to adopt a VOST, and the structure of the new tariff. We then describe how we tested our hypothesis by analyzing solar installation rates in Austin before and after the tariff, controlling for other variables, in order to assess what kind of effect, if

---

<sup>1</sup> Harvey, Tim. Environmental Program Coordinator at Austin Energy. Telephone interview conducted by authors. April 11, 2017.

any, the VOST had on residential solar adoption. Finally, we discuss additional factors that may have influenced the solar installation rate in Austin, as well as the potential replicability of similar VOST programs at other utilities.

## BACKGROUND

---

### AUSTIN ENERGY

---

Austin Energy is the publicly owned electricity provider in Austin, Texas and surrounding areas. It is the eighth largest public utility in the United States, with more than 440,000 customers and a generation capacity of more than 3,400 megawatts (MW).<sup>2</sup> About 86% of its customers are located within Austin city limits.

Of the 12,574 gigawatt-hours (GWh) of electricity consumed by Austin Energy in 2015, coal generation accounted for 27%, natural gas and oil for 18%, nuclear for 29%, and renewables for 26% of total consumption. Austin Energy's 1.5 gigawatts (GW) of renewable capacity in 2015 was composed of 88% wind and less than 2% (or 27.5 MW) rooftop solar. As of October 2016, Austin Energy supported more than 5,600 residential solar PV systems.<sup>3</sup>

---

<sup>2</sup> Austin Energy. *Company Profile*. <http://austinenergy.com/wps/portal/ae/about/company-profile>.

<sup>3</sup> Austin Energy. *Solar Solutions*. <https://austinenergy.com/wps/portal/ae/green-power/solar-solutions/solar-solutions>



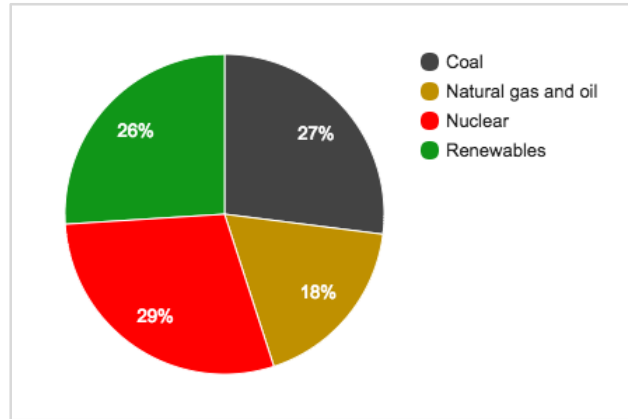


FIGURE 1. AUSTIN ENERGY'S ELECTRICITY GENERATION BY FUEL TYPE (MARCH 2017)<sup>4</sup>

Though the State of Texas has negligible renewable energy targets, the City of Austin has aggressive goals. The Austin City Council first adopted a renewable portfolio standard (RPS) in 1999, which was subsequently increased multiple times. The current RPS goal is 65% of electricity consumption from renewables by 2025, which is among the most ambitious targets in the country.<sup>5</sup> Within the RPS, the City Council approved a solar carve-out in 2014, which requires Austin Energy's generation mix to include 950 MW of solar capacity by 2025, including 200 MW of "local solar," of which at least 100 MW is required to be customer-controlled or "behind the meter" solar.<sup>6</sup> In addition, Austin Energy has a goal to reduce carbon dioxide emissions 20% below 2005 levels by 2020.<sup>7</sup> Both the RPS goal and the emission reduction goal are accelerating the installation of renewable energy in Austin, such as solar power.

As a method to provide community value, Austin Energy offers a number of energy efficiency, renewable energy, and rebates programs. These efforts aim to directly benefit customers and to help Austin Energy achieve efficiency and renewable energy goals set by Austin City Council. For example, in 2004, Austin Energy began the Solar Rebate Program, for residential customers, which is a capacity-based incentive for solar PV installations of up to 10 kilowatts (kW).

<sup>4</sup> Open Data - City of Austin. *Generation by Fuel Type*. <https://data.austintexas.gov/Utility/Generation-by-Fuel-Type/ss6t-rumq>

<sup>5</sup> US Department of Energy. *City of Austin - Renewable Portfolio Standard*. <https://www.energy.gov/savings/city-austin-renewables-portfolio-standard>

<sup>6</sup> Austin Energy. *Austin Energy Resource, Generation and Climate Protection Plan to 2025: An Update of the 2020 Plan*. <https://austinenergy.com/wps/wcm/connect/461827d4-e46e-4ba8-acf5-e8b0716261de/aeResourceGenerationClimateProtectionPlan2025.pdf?MOD=AJPERES>

<sup>7</sup> Austin Energy. *Corporate Reports & Data Library*. <https://austinenergy.com/wps/portal/ae/about/reports-and-data-library/data-library/power-supply>

## DECISION TO ADOPT A VALUE-OF-SOLAR TARIFF

---

As discussed, Austin Energy's decision to replace their net metering program was primarily a financial one. With an increasing block rate structure with two price tiers and a plan to expand to five tiers, many PV customers were being compensated for excess generation at rates higher than what similar non-PV customers would have been paying to consume a marginal kilowatt-hour (kWh) of electricity. Net metering could also be perceived as a disincentive for energy efficiency, as it kept rates low for customers who sold enough electricity back to the grid, regardless of their consumption level.<sup>8</sup> Additionally, PV customers were paying lower variable amounts under the net metering policy, and utility officials and net metering opponents were concerned that PV customers were being "cross-subsidized" by non-PV customers, as the former were paying less to cover fixed grid costs, despite using much of the same grid benefits as the latter.

Seeking to ensure adequate recovery of fixed grid costs, Austin Energy proposed in their 2011-2012 rate case to levy additional fixed fees on customers. This proposal would have led to fixed charges for residential customers increasing from \$10 to \$22 per bill period, despite the utility estimating that a fee of \$34 per bill period was necessary to fully cover infrastructure costs.<sup>9</sup> This solution was not politically palatable as it had unfavorable distributional consequences, particularly for low-income customers and could have the effect of discouraging energy efficiency. Austin Energy looked for a more agreeable path forward that would still equitably recover fixed costs, while encouraging efficiency investments.

Ultimately, Austin Energy decided that the best solution was to decouple the consumption rate from the production credit. This way, they could fairly charge PV customers for the use of the grid, while also fairly crediting them for the value of the solar electricity they provided. While the consumption portion of the bill was straightforward, the credit portion was complex and required careful and meticulous calculations. Austin Energy had been working with a firm called Clean Power Research since 2006 on a Value-of-Solar calculation methodology that originally sought to establish the appropriate rate for power purchase agreements with utility-scale solar providers — in other words, the cost-neutral point at which the utility would have no preference between purchasing energy from a solar plant or producing it themselves. Recognizing that the rate at which to credit PV customers for their electricity production should

---

<sup>8</sup> Rábago, Karl. *The 'Value Of Solar' Rate: Designing An Improved Residential Solar Tariff*. Solar Industry. February 2013. <http://rabagoenergy.com/files/ra0301bago-value-of-solar-sim-feb-2013.pdf>

<sup>9</sup> Austin Energy. *PUC Docket 40627. Response to PUC Texas Staff, 1-10. Attachment 2*. [http://interchange.puc.state.tx.us/WebApp/Interchange/Documents/40627\\_59\\_743212.PDF](http://interchange.puc.state.tx.us/WebApp/Interchange/Documents/40627_59_743212.PDF)

essentially answer the same question, the utility revisited these calculations and made tweaks to the methodology to apply it to small distributed generators. After countless conversations with stakeholders, public hearings, and approval from both the City Council and the Public Utilities Commission, the Value-of-Solar credit was rolled out to Austin Energy's PV customers in the fall of 2012.

From an economic perspective, there are a number of advantages to the VOST. First, it addresses the distributional concerns associated with net metering, as PV customers pay fully for the generation, transmission, and distribution services embedded in the retail rate of the electricity they consume.<sup>10</sup> Second, it reduces the distortions caused by the block rate structure, removing disincentives for efficiency. Third, it provides fair value for production to PV customers by compensating them based on the benefits of their electricity production to the grid. Fourth, it keeps Austin Energy financially whole by ensuring that grid costs are fully recovered before credits for solar generation are distributed. Finally, it can help Austin Energy make smarter decisions about resource planning and load balancing in the future, since the VOS program required the installation of an additional electrical meter at households with PV in order to separate the measurement of electricity generated by PV from electricity consumed from the grid.

## VALUE-OF-SOLAR CREDIT

---

Unlike with net metering, the VOST program decouples energy consumption from the Value-of-Solar credit rate; residential solar customers are billed for electricity consumed in a given bill period, then receive a separate credit on their bill for each kWh their solar panels generate and deliver to the grid. All fixed charges under the Residential Service rate schedule remain unaffected.

The credit is based on the average of the annual Value-of-Solar assessment of the next year and the previous four years' Value-of-Solar assessments, and the resultant VOS rate is effective as of January 1 the following year.<sup>11</sup> The amount of the VOST credit is calculated using algorithms developed by Austin Energy jointly with Clean Power Research. It is calculated based on the components listed below.

---

<sup>10</sup> National Renewable Energy Laboratory. *Value-of-Solar Tariffs*.  
[http://www.nrel.gov/tech\\_deployment/state\\_local\\_governments/basics\\_value-of-solar\\_tariffs.html](http://www.nrel.gov/tech_deployment/state_local_governments/basics_value-of-solar_tariffs.html)

<sup>11</sup> Austin Energy. *City of Austin - Electric Tariff Value-of-Solar Rider*.  
<http://austinenergy.com/wps/wcm/connect/c6c8ad20-ee8f-4d89-be36-2d6f7433edbd/ResidentialValueOfSolarRider.pdf?MOD=AJPERES>

TABLE 1. AUSTIN ENERGY VOST VALUE COMPONENTS AND ASSOCIATED FORMULAS<sup>12</sup>

VOS Component	Formula
Energy Value	$\left[ \frac{\sum(\text{Implied heat rate} * \text{Gas price} * \text{PV production} * \text{Risk free discount factor})}{\sum(\text{PV production} * \text{Risk free discount factor})} \right] * (1 + \text{Loss factor})$
Plant O&M Value	$\frac{[\sum(\text{O\&M cost} * (1 + \text{inflation})^{\text{year}} * \text{PV capacity} * \text{Risk free discount factor})]}{\sum(\text{PV production} * \text{Risk free discount factor})} * (1 + \text{Loss factor})$
Generation Capacity Value	$\frac{[\sum(\text{Annual capital carrying cost} * \text{PV capacity} * \text{Risk free discount factor})]}{\sum(\text{PV production} * \text{Risk free discount factor})} * \text{Load match} * (1 + \text{Loss factor})$
Transmission and Distribution Value	$\frac{[\sum(\text{Transmission cost} * \text{PV capacity} * \text{Risk free discount factor})]}{\sum(\text{PV production} * \text{Risk free discount factor})} * \text{Load match} * (1 + \text{Loss factor})$
Environmental Compliance Value	<p><i>Set at \$0.02 per kWh, based on average premium paid in voluntary green power purchasing programs in Texas when VOS was implemented</i></p>

<sup>12</sup> City of Austin - Electric Tariff Value-of-Solar Rider.

---

## ENERGY VALUE

---

The *energy value* is the estimated avoided cost of energy that would have been needed to meet electric demand, as well as transmission and distribution losses. The value is based on the solar production profile in Austin to account for the time of day when solar is offsetting those costs. It is inferred from wholesale market price data in the Electric Reliability Council of Texas (ERCOT) region, as well as from projected natural gas prices.

---

## PLANT OPERATIONS AND MAINTENANCE VALUE

---

The *plant operations and maintenance value* is the estimated cost associated with natural gas plant operations and maintenance during times of peak demand that are offset by distributed energy resources (DER) supplying power during those times.

---

## GENERATION CAPACITY VALUE

---

The *generation capacity value* is the estimated avoided cost of capital of generation that is offset by DER production during peak times. Like the energy value, the generation capacity value is inferred from ERCOT market price data.

---

## TRANSMISSION AND DISTRIBUTION VALUE

---

The *transmission and distribution (T&D) value* is the estimated savings in transmission costs that results from the reduction in the peak load by DER, as well as the savings or costs related to capital investments to the distribution grid. The distribution value in Austin Energy's service territory is currently not calculated as part of the VOST but will continue to be reviewed as solar penetration increases to determine whether and when it merits being incorporated.

---

## ENVIRONMENTAL COMPLIANCE VALUE

---

The *environmental compliance value* is the estimated avoided cost of complying with environmental regulations and local policy objectives. The environmental compliance value for Austin Energy's VOST is

currently set at \$0.02 per kWh based on the average premium that amount was being paid in voluntary green power purchasing programs in Texas when the VOST was first implemented.

The sum of the above factors is intended to reflect the value of distributed PV to Austin Energy — a value at which the utility would ostensibly be economically neutral to whether it supplies a kWh itself or a customer supplies it to the grid.<sup>13</sup> Although the VOST calculation accounts for environmental benefits of distributed PV, which some VOS stakeholders consider to be controversial, it does not include any value of economic benefits or variations in value due to the location of the system in the grid. These values have been considered in other VOS studies, and some argue that omitting them results in a more conservative calculation for the value of solar.

### ADJUSTMENTS TO THE VALUE-OF-SOLAR TARIFF

---

Austin Energy's Value-of-Solar tariff does not institute a static credit amount; it is designed to change annually as part of the utility's budget approval process, based on updated inputs to the rate components described above. Since its initial implementation, the credit rate has been readjusted for each calendar year, with the new credit rate going into effect for the January billing cycle of each year. The original VOST credit rate was \$0.128 per kWh, which was then reduced for the 2014 calendar year to \$0.107 per kWh, and then increased in 2015 to \$0.113 per kWh.

---

<sup>13</sup> Rábago, Karl. The 'Value Of Solar' Rate: Designing An Improved Residential Solar Tariff. Solar Industry. February 2013. <http://rabagoenergy.com/files/ra0301bago-value-of-solar-sim-feb-2013.pdf>

TABLE 2. AUSTIN VOS ASSESSMENT RATES AND EFFECTIVE VOS RATES,<sup>14</sup> 2012-2017<sup>15</sup>

Effective Date	VOS assessment (\$/kWh)	VOS rate (\$/kWh)
10/1/2012	\$0.128	\$0.128
1/1/2014	\$0.107	\$0.107
1/1/2015	\$0.100	\$0.113
1/1/2016	\$0.097	\$0.109
1/1/2017	\$0.097	\$0.106

In August 2014, to facilitate achieving the city’s ambitious RPS goals, the Austin City Council directed the City Manager to carry out a number of policy changes, which included changes to the VOST.<sup>16</sup> These changes included 1) the ability for credits to carry over from year to year instead of resetting at the start of each year, 2) the removal of a 20 kW cap on residential solar capacity for systems eligible for the VOS credit, 3) the establishment of an annual price floor equal to the residential electricity rates of a “tier 3 customer,” 4) the ability for leased system hosts to receive VOS credits, and 5) the adoption of a five-year rolling average in the annual calculation of the credit.

---

<sup>14</sup> As previously described, the rate is based on the average of the annual Value-of-Solar assessment of the next year and the previous four years’ Value-of-Solar assessments. The resultant VOS rate is effective as of January 1 the following year.

<sup>15</sup> *City of Austin - Electric Tariff Value-of-Solar Rider.*

<sup>16</sup> US Department of Energy. *City of Austin RPS.*

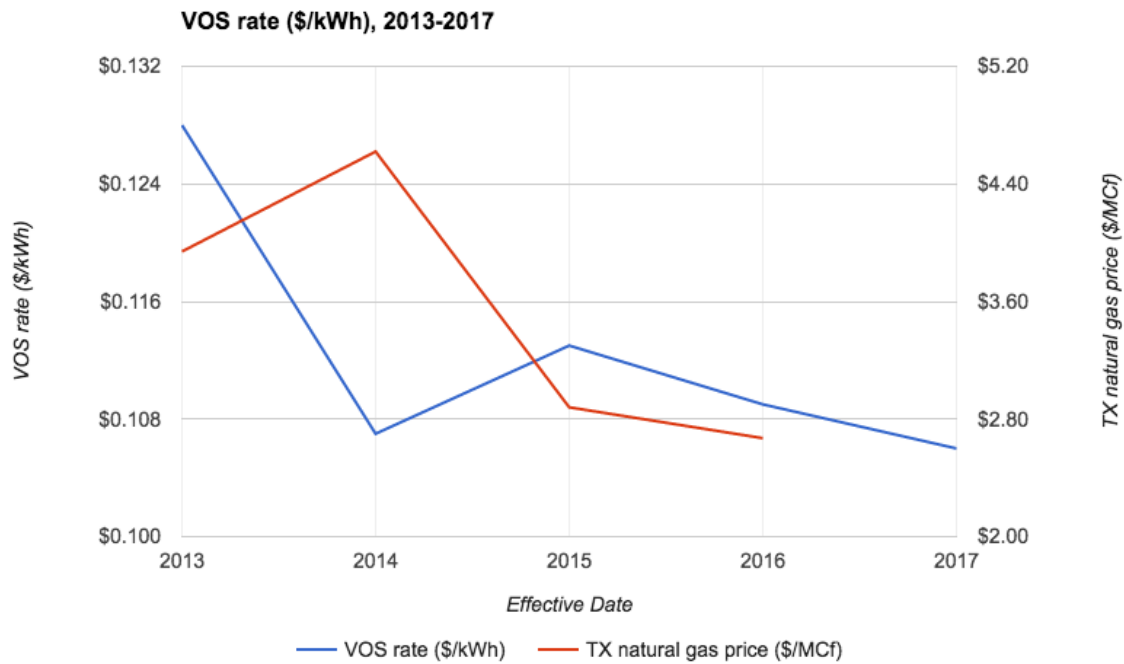


FIGURE 2. VOST RATE (\$/KWH) AND PRICE OF NATURAL GAS (\$/MCF)<sup>17</sup>

The adoption of a five-year rolling average was largely due to changes in generation costs for natural gas power plants. After a dramatic decline in natural gas prices and a corresponding decrease in the VOST credit rate, in the first few years of the program, Austin Energy modified the VOST rate to incorporate the rolling average in order to temper the impact that short-term gas price fluctuations can have on VOST rates. While the VOST rate changes annually, the rate customers receive is now an average of the current year and the four previous years. Despite falling gas prices, VOST rates in 2015 exceeded retail electricity rates by \$0.036 per kWh.<sup>18</sup>

<sup>17</sup> City of Austin - Electric Tariff Value-of-Solar Rider; EIA. Natural Gas Prices. 2017.

[https://www.eia.gov/dnav/ng/ng\\_pri\\_sum\\_dcu\\_STX\\_a.htm](https://www.eia.gov/dnav/ng/ng_pri_sum_dcu_STX_a.htm)

<sup>18</sup> Revesz, Richard and Burcin Unel. *Managing the Future of the Electricity Grid: Distributed Generation and Net Metering*. Institute for Policy Integrity, New York University Law School. February 2016.

<http://policyintegrity.org/files/publications/ManagingFutureElectricityGrid.pdf>



## ANALYSIS

---

### DATA

---

Our main objective was to investigate the VOST's impact on the rate of residential solar installations in Austin. To conduct this analysis, we used residential solar installation data from the National Renewable Energy Laboratory's OpenPV Project. This dataset provides information for each installation, such as the date of installation, zip code, cost per watt, and utility, for the entire US. However, because this database consists of data that are contributed voluntarily from a variety of sources, the data are incomplete and could be inaccurate.

For our analysis, we used data for Texas installations from 2004 through 2015. Data for 2016 were available but appeared incomplete and were omitted from the analysis. The raw dataset for this time period contained 9,347 records of solar installations in Texas. Of these, 8,163 were residential, or about 87.3% of total solar installations in Texas. Cumulative installed capacity was 234,846 kW, of which residential installations accounted for 43,809 kW or about 18.7% of the total.

It appeared, however, that the residential installation data contained a number of duplicate records.<sup>19</sup> A total of 1,504 duplicate records were identified and removed, leaving 6,659 records for residential solar installations in Texas.

As discussed below, we controlled for other variables such as population, income, and political affiliation, rebates and retail rates. We used population and income data from the US Census Bureau's American Community Survey and county-level political affiliation data from the 2016 Presidential election. We used the rebate data for installations in Austin from the Open PV Project, and added rebate data from Database of State Incentives for Renewables and Efficiency (DSIRE) for San Antonio and Dallas (since it was largely missing from Open PV). We used the retail rate data listed for each utility on the PUC website.<sup>20</sup>

---

<sup>19</sup> There may be duplication in non-residential installations as well, but these were not the focus of our analysis.

<sup>20</sup> Public Utility Commission of Texas. *Residential and Commercial Bill Comparisons for Non-Competitive Markets*. <https://www.puc.texas.gov/industry/electric/rates/NCrate/viewdownarc.aspx>  
Public Utility Commission of Texas. *Average Annual Rate Comparison Archive*. <https://www.puc.texas.gov/industry/electric/rates/RESrate/RESratearc.aspx>

The data show that Austin accounted for about 80% of all installations and installed capacity in Texas (Figure 3). There was a steady increase in the number of solar installations per month in both Austin and Texas, as seen in Figure 4. A sharp spike in monthly installations occurred in Austin in July 2012, immediately before the city's net metering policy was replaced by the VOST. It is possible that the announcement of VOST could have triggered the increase in 2012 before the introduction of VOST. However, the actual method and timing of the policy announcement remains unclear therefore no conclusion could be made.

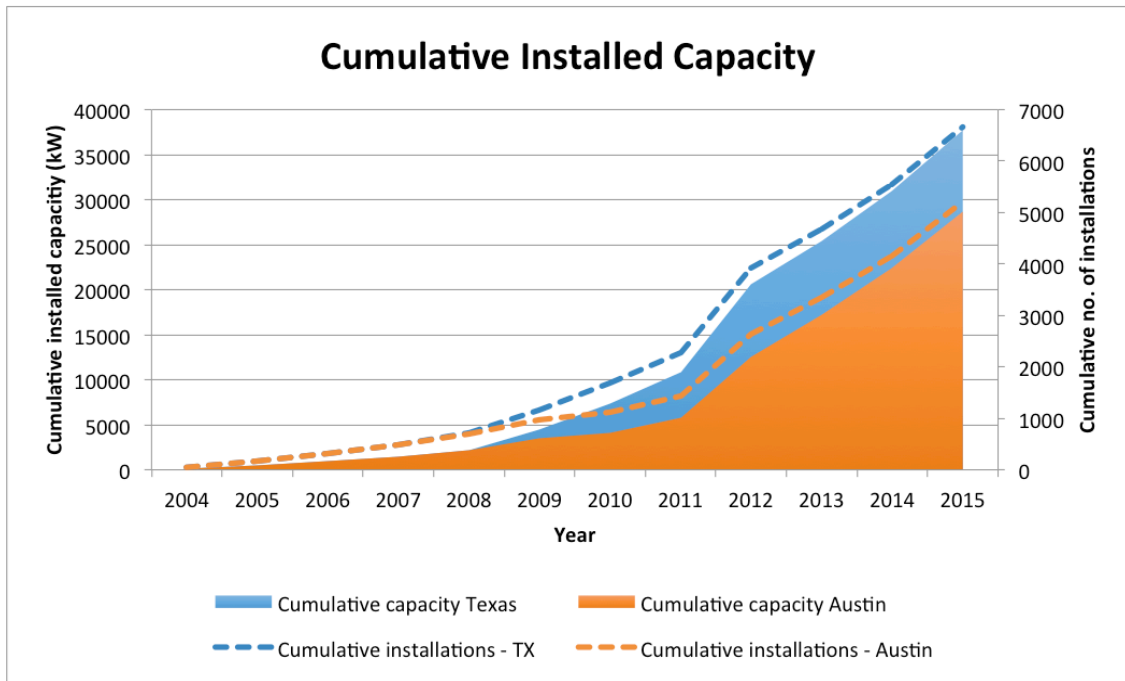


FIGURE 3. CUMULATIVE INSTALLED CAPACITY AND NUMBER OF INSTALLATIONS FOR AUSTIN AND TEXAS

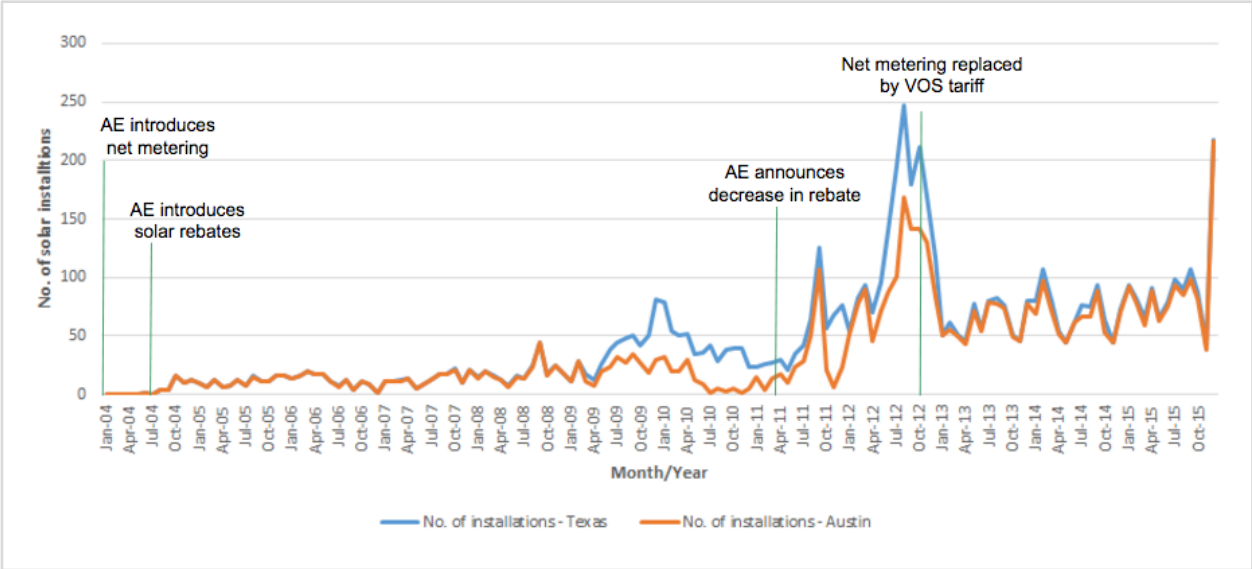


FIGURE 4. MONTHLY SOLAR INSTALLATIONS IN AUSTIN AND TEXAS (INCLUDING AUSTIN)

METHODOLOGY

DIFFERENCE-IN-DIFFERENCES TECHNIQUE

We used the difference-in-differences technique to evaluate the effect of the treatment, the implementation of the VOST program, on the dependent variable, solar installation rates in Austin, by comparing the average change over time in solar installations in Austin to two control groups — 1) the rest of Texas and 2) the cities of San Antonio and Dallas, aggregated. To effectively isolate the relationship between the introduction of VOST in Austin and a change in solar installation rates, we controlled for other variables and carefully selected control cities to conduct an appropriate comparison. Our methodology for choosing these cities and control variables is outlined below.

CONTROL CITIES

We chose the control cities of San Antonio and Dallas because they are similar to Austin in terms of solar radiation (Figure 5), income, political leaning and home ownership (Table 3). The other control group used was all of Texas excluding Austin. While this group was not as similar to Austin as San Antonio and Dallas were, it still shared the same state policies, which are important determinants in solar adoption.

TABLE 3. COMPARISON BETWEEN AUSTIN, DALLAS, AND SAN ANTONIO

City	Population <sup>21</sup>	Area (sq. mi) <sup>22</sup>	Median Household Income <sup>23</sup>	Party Affiliation <sup>24</sup>	Owner: Renter <sup>25</sup>
Austin	885,400	272	\$57,960	65.8% D, 27.1% R	51:49
Dallas	1,258,000	386	\$51,824	54.2% D, 40.8% R	51:49
San Antonio	1,409,000	465	\$52,230	60.8% D, 34.6% R	57:43

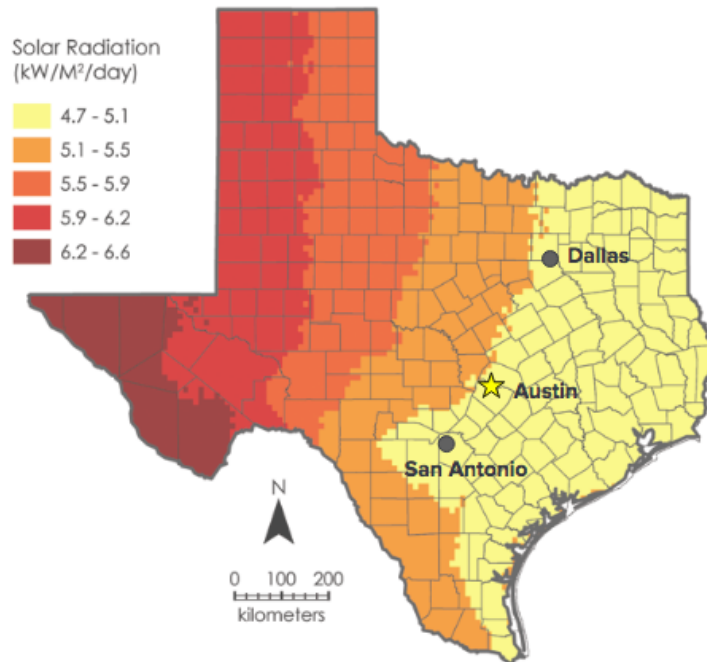


FIGURE 5. SOLAR RADIATION IN TEXAS<sup>26</sup>

<sup>21</sup> US Census Bureau. *American Community Survey 2011*. <https://www.sociaexplorer.com/explore/tables>

<sup>22</sup> US Census Bureau. *Quick Facts: Places*. <https://www.census.gov/quickfacts/table/PST045216/00>

<sup>23</sup> US Census Bureau. *American Community Survey 2011*. <https://www.sociaexplorer.com/explore/tables>

<sup>24</sup> Townhall. *County Level Election Results*. [https://github.com/tonmcg/County\\_Level\\_Election\\_Results\\_12-16](https://github.com/tonmcg/County_Level_Election_Results_12-16)

<sup>25</sup> US Census Bureau. *American FactFinder: Community Facts*.

[https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS\\_15\\_1YR\\_S2502&prodType=table](https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_15_1YR_S2502&prodType=table)

---

## CONTROL VARIABLES

---

In addition to using control groups, our analysis controlled for a series of variables that likely influenced solar adoption, in order to further isolate the effect of VOST. This included month and year fixed effects (to control for aggregate time trends and seasonality), population, average household income, political affiliation, solar rebate amount, installation cost per watt, and retail electricity rate.

---

## REBATE AMOUNTS

---

In designing our analysis, we determined that the dollar amount of residential solar rebates was one of the most important variables to control for, since financial incentives undoubtedly influence consumer decisions to adopt solar. As the solar market has grown and installation costs have declined, Austin's solar rebate amounts have decreased considerably from the original 2004 incentive of \$5 per watt. In 2015, Austin Energy introduced a capacity-based incentive ramp-down schedule to provide greater certainty and transparency for customers and allow the utility to meet its solar goals on schedule and within budget.<sup>27</sup>

Although incentives for solar decreased by 88% between 2004 and 2016, solar installations in Austin increased dramatically over the same time period.<sup>28</sup> In some instances, the announcement of a rebate decrease appears to have led to a sharp increase in solar installations. For example, according to Austin Energy, a large uptick in installations around September 2011 (Figure 6) occurred in response to an announced rebate reduction from \$2.50 to \$2.25 per watt. This resulted in \$4.5 million worth of incentive request submissions in March 2011, which triggered the spike the following September.<sup>29</sup>

---

<sup>26</sup> Clayton, Mary E., Jill B. Kjellsson, and Michael E. Webber. Earth Magazine. *Can renewable energy and desalination tackle two problems at once?* October 2014. <https://www.earthmagazine.org/article/can-renewable-energy-and-desalination-tackle-two-problems-once>

<sup>27</sup> Austin Energy. 2017. *Solar Program: Residential Solar Photovoltaic Incentive Program Guidelines*. <https://austinenenergy.com/wps/wcm/connect/e4b07e7e-da58-42bc-8240-e2dfc8171de4/Residential+Solar+Program+Guidelines.pdf>

<sup>28</sup> Harvey, Tim. Environmental Program Coordinator at Austin Energy. Email message to authors. April 24, 2017.

<sup>29</sup> Harvey, Tim. Environmental Program Coordinator at Austin Energy. Telephone interview by authors. April 11, 2017.

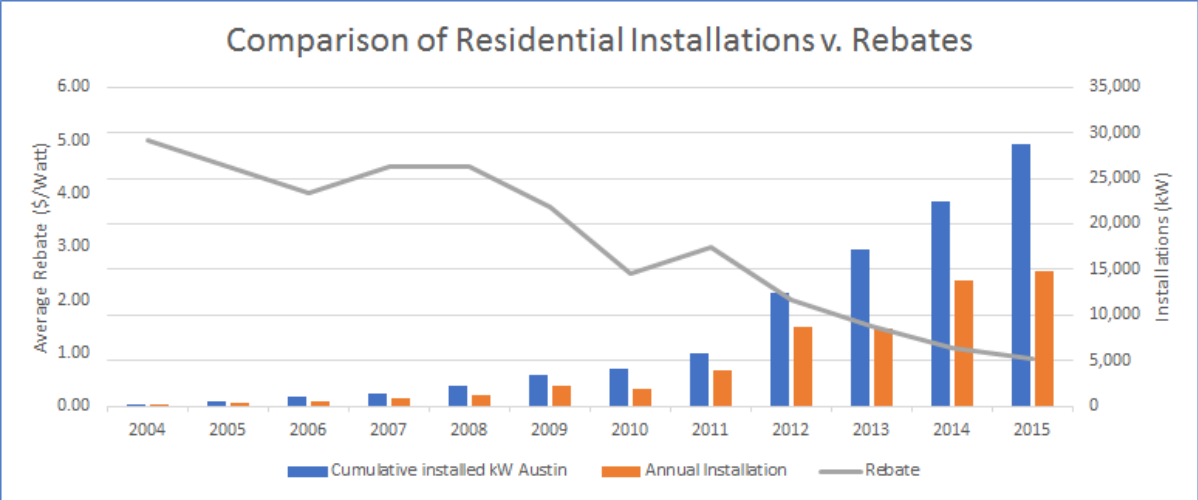


FIGURE 6. RESIDENTIAL SOLAR INSTALLATIONS AND SOLAR REBATES PROVIDED BY AUSTIN ENERGY

In contrast, San Antonio and Dallas offered solar PV rebates much later and in smaller amounts. For example, CPS Energy, the municipal utility in San Antonio, offered a rebate beginning in 2007 of \$1.20 per watt that also followed a capacity-based ramp-down schedule.<sup>30</sup> Oncor Energy in Dallas began its rebate program in 2009, which offered one-time payments of \$538.53 per kW and \$0.2519 per kWh through 2012, and revived the program in 2016.<sup>31</sup>

<sup>30</sup> DSIRE. CPS Energy - Solar PV Rebate Program. <http://programs.dsireusa.org/system/program/detail/2794>

<sup>31</sup> DSIRE. Oncor Electric Delivery - Solar Photovoltaic Standard Offer Program. <http://programs.dsireusa.org/system/program/detail/3168>

---

## REGRESSION MODEL

---

The regression model employed in our analysis used the following equation:

$$y_{mz} = \alpha + \beta \cdot \text{cityaustin} + \gamma \cdot \text{cityaustin.postVOST} + \sum \delta \cdot \text{fixed effects} + \sum \lambda \cdot \text{other control variables}_{mz} + \varepsilon$$

where:

- $y$  = number of monthly solar installations by zip code
- $\alpha$  = constant term
- $\beta$  = treatment group specific effect (to account for average permanent differences between Austin and the control group)
- $\gamma$  = true effect of treatment
- $\delta$  = time trend common to control and treatment groups
- $\lambda$  = effect of other control variables

A key assumption of the difference-in-differences model is parallel trends between the treatment and control groups in the absence of the treatment. We compared trends in solar installations between the two groups before and after the VOST to test the validity of this assumption. As shown in Figures 7 and 8, there was somewhat of a parallel trend between Austin and rest of Texas before the VOST, whereas no discernible trend was observed between Austin and San Antonio and Dallas. This is mainly due to minimal solar installations in the latter cities (as illustrated in the LBNL Solar PV dataset), despite the introduction of solar rebates<sup>32</sup> and net metering policies (Figure 9). However, San Antonio and Dallas share similar characteristics with Austin and therefore provide a better counterfactual of solar outcomes in Austin absent VOST. As a result, we ran regressions for both control groups (Austin vs. the rest of Texas and Austin vs. San Antonio and Dallas).

---

<sup>32</sup> DSIRE. *CPS Energy - Solar PV Rebate Program*. <http://programs.dsireusa.org/system/program/detail/2794>;  
DSIRE. *Oncor Electric Delivery - Solar Photovoltaic Standard Offer Program*.  
<http://programs.dsireusa.org/system/program/detail/3168>

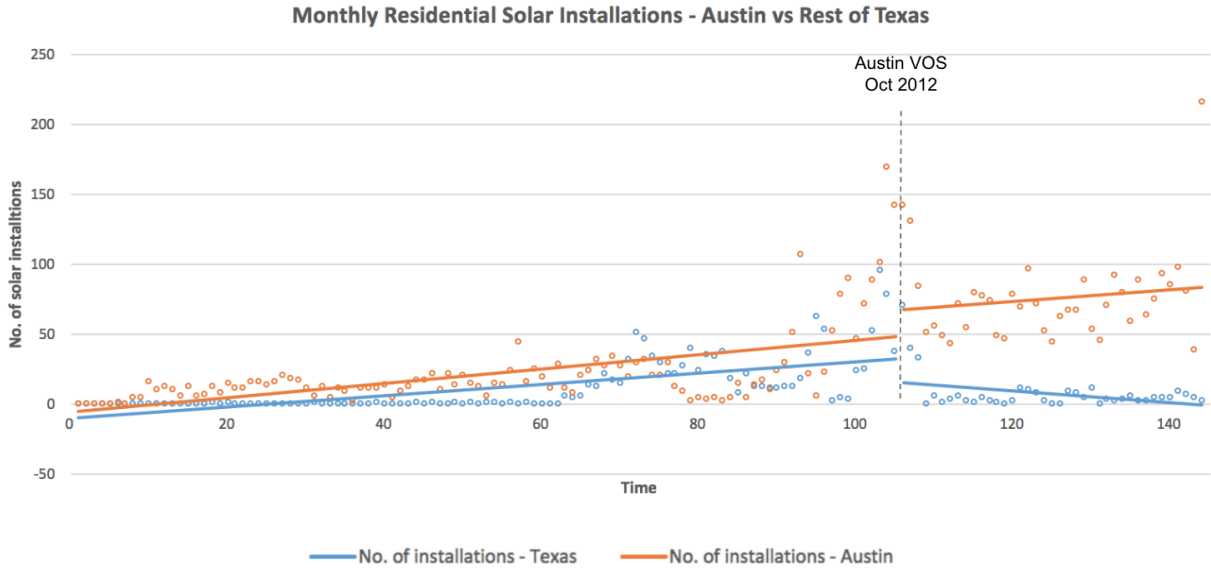


FIGURE 7. MONTHLY RESIDENTIAL SOLAR INSTALLATIONS IN AUSTIN VS. THE REST OF TEXAS

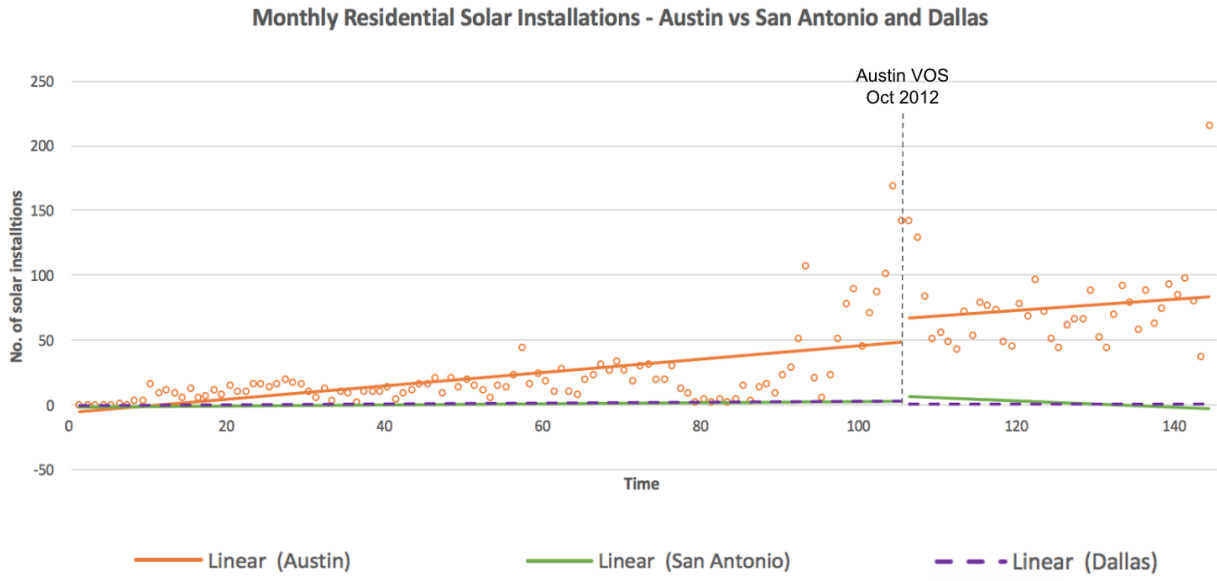


FIGURE 8. MONTHLY RESIDENTIAL SOLAR INSTALLATIONS IN AUSTIN VS. SAN ANTONIO AND DALLAS



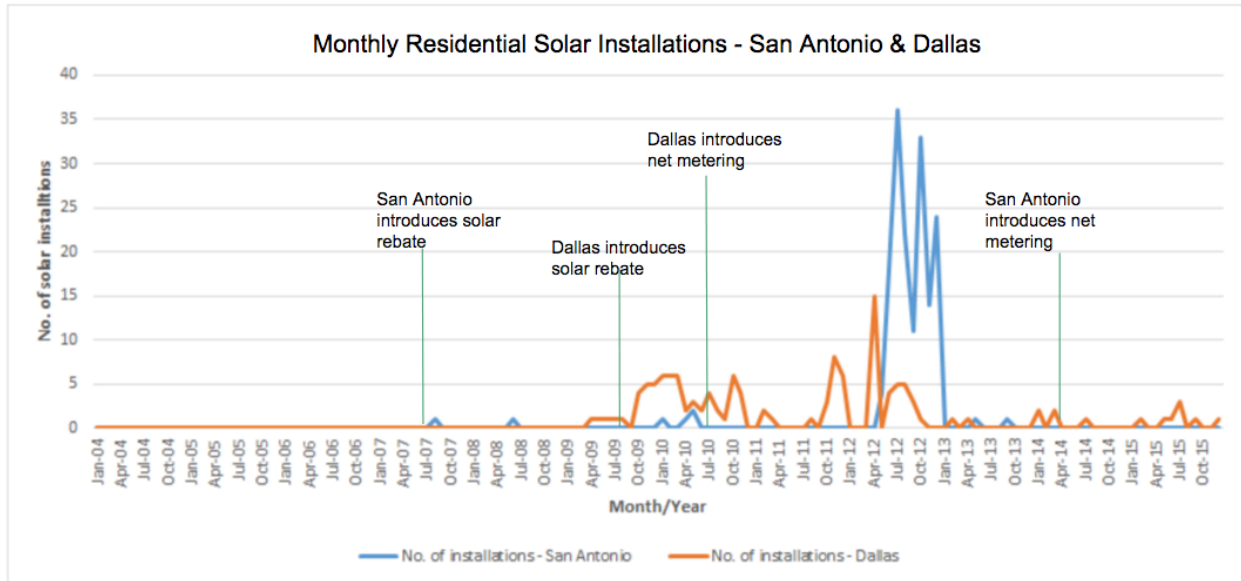


FIGURE 9. MONTHLY RESIDENTIAL SOLAR INSTALLATIONS IN SAN ANTONIO AND DALLAS

## RESULTS

As shown in Table 4, the impact of VOST on solar installations in Austin is positive and statistically significant with a p-value of 0.038 ( $<0.05$ ) when the control group is the rest of Texas. In this case, the results imply that VOST increased solar installations in Austin by 0.667 installations per zipcode per month.

However, when the control group is San Antonio and Dallas, the effect of the VOST is still positive, but not statistically significant, with a p-value of 0.154. When rebates and retail rates are included, the effect of the VOST on the rate of solar installations is reduced by half and also not statistically significant, with a p-value of 0.575. This change is mostly caused by rebates, whereas the inclusion of retail rates leads to minimal changes in the regression results. However, there are concerns with rebate data as discussed in the *Limitations* section below, so the results in the last case may be unreliable.

In addition, the results show that living in Austin clearly has a positive and statistically significant impact on solar installation rates. This is likely due to a combination of local policies — including financial incentives for solar — and the unique characteristics of Austin as described in the *Discussion* section below.

TABLE 4. REGRESSION RESULTS FOR MONTHLY TOTAL SOLAR INSTALLATIONS BY ZIP CODE

	Austin vs. Rest of TX	Austin vs. San Antonio & Dallas	Austin vs. San Antonio & Dallas (incl. rebates & retail rates)
City Austin	1.610*** (0.232)	1.650*** (0.403)	2.515*** (0.492)
Post VOST	<b>0.667**</b> <b>(0.321)</b>	<b>0.748</b> <b>(0.524)</b>	<b>0.312</b> <b>(0.557)</b>
Time Fixed Effects	Yes	Yes	Yes
Cost per Watt	-0.030 (0.050)	-0.064 (0.088)	-0.130 (0.090)
Population	0.00001*** (0.00000)	0.00003*** (0.00000)	0.00003*** (0.00000)
Average Income	0.00001*** (0.00000)	0.00001*** (0.00000)	0.00002*** (0.00000)
Political affiliation	-0.334 (0.601)	4.232* (2.108)	3.961 (2.174)
Retail Rate			1.922** (5.213)
Rebates			-0.000 (0.000)
Constant	-1.435	-5.208	-4.692

	(0.803)	(1.618)	(1.642)
R-squared	0.0912	0.0867	0.0976
Adj R-squared	0.0830	0.0750	0.0850
Number of Observations	3,149	2,216	2,175

Standard errors are reported in parentheses. \*, \*\*, \*\*\* indicates significance at the 90%, 95%, and 99% levels, respectively.

## DISCUSSION

As discussed above, we expected a decrease in solar installations following the implementation of the VOST program, since we posited that the financial attractiveness of solar would decrease under VOST compared to net metering. Contrary to our expectation, we found that VOST has a positive and statistically significant effect on solar installations in Austin when the rest of Texas is used as a control group. However, the rest of Texas may not be a suitable control for Austin due to factors that we do not observe, therefore we considered another specification that uses Dallas and San Antonio as the control group. The results from this specification are again positive although the standard errors increase (the coefficient is now not statistically significant at a significance level of 0.1). The lack of significance could be due to decreased power to detect an effect from limiting the sample size. Alternatively, these results may lead us to interpret the first specification more cautiously if we suspect that there are unobserved factors or trends not relating to VOST that occurred in the more progressive cities (Austin, Dallas, and San Antonio). Regardless, we found that Austin residents are significantly more likely to install solar compared to the rest of Texas, including San Antonio and Dallas.

## LIMITATIONS TO ANALYSIS

Our regression analysis had a number of limitations due to data availability and quality. Below, we outline the assumptions we made and how we addressed data discrepancies.

The OpenPV Project is a voluntary database, and therefore may include incomplete or inaccurate data. We identified and removed approximately 1,500 duplicate records, but there may have been additional duplicates that we were unable to identify. However, we believe that this is the most comprehensive dataset and thus we assume that any further inconsistencies are minor and do not significantly impact our analysis.

There was no single, comprehensive source of data for solar rebates in Austin, San Antonio, and Dallas. For Austin Energy's residential solar rebate, we used the data listed in the OpenPV Project, which was consistent with the data we received from Austin Energy. However, rebate data were missing for San Antonio and Dallas in the OpenPV dataset so we used the DSIRE database instead. It is important to note that there were inconsistencies in Austin's rebate data between the OpenPV dataset and DSIRE, which suggests that the DSIRE rebate data for San Antonio and Dallas may also contain inaccuracies.

The OpenPV Project provides data based on the US Census Bureau's Zip Code Tabulation Areas (ZCTA) rather than postal zip codes. However, we assume that the difference between these designations is negligible and does not impact our analysis.

Population and income data according to ZCTA were only available from the US Census Bureau's American Community Survey starting in 2011. Therefore, we applied the 2011 data to the preceding years. Lastly, for political affiliation, we used data exclusively from the 2016 Presidential election, rather than from each year for which we performed our analysis. We do not expect either of these adjustments to have a meaningful impact on our analysis.

## OTHER KEY VARIABLES

---

There are a number of factors that can influence solar adoption. In our regression, we controlled for several factors, but there were a number of factors for which we were unable to control.

First, the way Austin Energy communicated the change to the VOST, and the way customers interpreted those changes, may have had a significant impact solar adoption. According to the Environmental Program Coordinator at Austin Energy, the utility held community meetings about the policy change, but it is not clear to what extent prospective solar customers were made aware of the change, and how these

communications affected their propensity to invest in solar.<sup>33</sup> In the same vein, the way in which the change to VOST was portrayed by local players, such as city government, solar installers, and media organizations, could have affected solar adoption, but was not accounted for in our analysis.

Another factor that we could not control for was social contagion, whereby certain behaviors exhibited by one person are emulated by others. If there were a number of nearby installations, or a cluster of residential solar panels in certain densely populated neighborhoods, those proximal examples could have encouraged other residents to adopt solar, regardless of the change from net metering to VOST.<sup>34</sup>

Lastly, although our regression did control for political affiliation, which may be correlated with support for environmental causes, Austin residents may have a particular proclivity for solar energy, and may have been more inclined than customers in other regions to adopt solar PV, despite the change in policy.

---

## POTENTIAL REPLICABILITY

---

As utilities across the country pursue alternatives to net metering, it is worth considering why Austin may have been uniquely positioned to pioneer a VOST methodology, and whether similar programs could be implemented elsewhere.

---

## UNIQUE AUSTIN CIRCUMSTANCES

---

Because Austin Energy is a municipal utility, their financial decisions must be approved by the Austin City Council, in contrast to other US utilities, which are largely regulated by state public utility commissions (PUCs). PUCs tend to make decisions based on what will keep utility rates low for customers. While this is certainly a concern of the Austin City Council, the Council has a wider mission, making decisions based on a variety of objectives. The City Council is directly elected by Austin residents and as such, represents the city's relatively progressive-minded population. It is less likely that a state PUC would be as supportive of the type of pioneering VOST program that was implemented in Austin.

---

<sup>33</sup> Harvey, Tim. Environmental Program Coordinator at Austin Energy. Telephone interview conducted by authors. April 11, 2017.

<sup>34</sup> Graziano, Marcello and Kenneth Gillingham. "Spatial patterns of solar photovoltaic system adoption: The influence of neighbors and the built environment." *Journal of Economic Geography*. (2015) 15 (4): 815-839. October 7, 2014. <https://doi.org/10.1093/jeg/lbu036>.

In addition to — and perhaps because of — the features unique to Austin Energy, some of the particulars of the VOST’s component calculations may not be as palatable in other states and regulatory jurisdictions. For example, Austin Energy’s *Value of Energy* calculation is based on highly transparent ERCOT power prices, but marginal energy costs are much more opaque in other parts of the country and thus difficult to identify. Austin Energy’s \$0.02 per kWh *Environmental Benefits* component is intended to capture the societal environmental benefits associated with incremental PV deployment. However, these benefits are not financially measurable from a utility’s perspective, as few regulations currently exist to reduce the environmental externalities imposed by the electricity sector.

At present, the only other instance of a VOST in the US is in Minnesota, where legislation adopting a VOST was enacted in 2013. However, rather than comprehensively replacing net metering, the state legislature employed a more cautious strategy, making the VOST program optional to start. This way the efficacy of the program can be assessed before net metering is fully discontinued. To date, no utility has adopted the VOST, as the assessment currently values solar more highly than retail electricity rates.

Other states have taken a close look at the potential for VOST, such as Maine, where Clean Power Research has conducted a study similar to those in Austin and Minnesota.<sup>35</sup> In addition, numerous VOS studies have been released by a variety of stakeholders, most of whom have either touted the benefits of distributed solar or warned of the costs. Some utilities have commissioned VOS studies to quantify solar’s costs to the grid. In Arizona, a recent VOS proceeding has resulted in the replacement of net metering with a VOS program that will reduce PV customer compensation.<sup>36</sup>

## CONCLUSION

---

Because Austin Energy chose to replace net metering with the VOST primarily for financial reasons, we expected the change in tariff structure to lead to a decrease in the rate of solar installations in Austin. Instead, our analysis indicates that the VOST led to a statistically significant increase in solar installations in Austin when compared to the rest of Texas. However, this positive effect was not statistically significant when compared to San Antonio and Dallas. While San Antonio and Dallas provide better counterfactuals

---

<sup>35</sup> Clean Power Research. *Maine Distributed Solar Valuation Study*. 2015. [http://www.maine.gov/mpuc/electricity/elect\\_generation/documents/MainePUCVOS-ExecutiveSummary.pdf](http://www.maine.gov/mpuc/electricity/elect_generation/documents/MainePUCVOS-ExecutiveSummary.pdf)

<sup>36</sup> Utility Dive. *Arizona regulators end retail net metering in value-of-solar proceeding*. December 21, 2016. <http://www.utilitydive.com/news/updated-arizona-regulators-end-retail-net-metering-in-value-of-solar-proce/432838/>

for solar installations in Austin absent the VOST, the limited sample size may have decreased the statistical significance of the results. We therefore cannot draw any definitive conclusions about the impact of the VOST on solar installations in Austin.

Moreover, the nascent nature of the VOST and the rapid changes in the solar industry make it difficult to isolate the most significant factors on the solar installation rate in Austin. Further study would likely be helpful in assessing the impact of a VOST policy compared to a net metering policy before it is possible to speculate on the potential success of a VOST in another jurisdiction. As discussed above, the circumstances in Austin may be unique and this type of program may not be easily replicated elsewhere.

As more utilities, regulators, and other stakeholders develop VOS tariffs and other innovative programs to replace net metering, other regions can adopt similar approaches that both preserve utility financials and allow for a vibrant market for residential solar. Despite the limitations of our analysis and the uncertainty of replicability, our results indicate that the VOST did not decrease the rate of solar installations, which may have promising implications for other well-executed VOST policies in the future.

---

## APPENDIX

---

APPENDIX 1. AUSTIN ENERGY REBATE HISTORY: AMOUNT AND CAPACITY INSTALLED<sup>37</sup>

Date Rebate changed	Rebate changed to (\$/W)	Capacity Installed at rebate level (kW-AC)
4/20/2004	\$5.00	522
11/16/2005	\$4.50	88
2/1/2006	\$4.00	172
10/1/2006	\$4.50	1,350
3/13/2009	\$3.75	684
10/1/2009	\$2.50	755
5/17/2011	\$3.00	1,084
10/1/2011	\$2.50	1,614
6/11/2012	\$2.00	2,940
5/7/2013	\$1.50	2,719
12/4/2013	\$1.25	1,656
6/16/2014	\$1.10	5,290
6/26/2015	\$1.00	944
8/24/2015	\$0.90	1,275
11/9/2015	\$0.80	3,750
9/14/2016	\$0.70	2,607
2/13/2017	\$0.60	1,005

---

<sup>37</sup> Harvey, Tim. Environmental Program Coordinator, Austin Energy. Email to authors, April 11, 2017.



---

## BIBLIOGRAPHY

---

- Austin Energy. *City of Austin - Electric Tariff Value-of-Solar Rider*.  
<http://austinenergy.com/wps/wcm/connect/c6c8ad20-ee8f-4d89-be36-2d6f7433edbd/ResidentialValueOfSolarRider.pdf?MOD=AJPERES>
- Austin Energy. *Company Profile*. <http://austinenergy.com/wps/portal/ae/about/company-profile>.
- Austin Energy. *Corporate Reports & Data Library*.  
<https://austinenergy.com/wps/portal/ae/about/reports-and-data-library/data-library/power-supply>
- Austin Energy. "Distribution Interconnection Guide for Customer Owned Facilities less than 10MW". January 31, 2017. <https://austinenergy.com/wps/wcm/connect/23c5f881-73da-4064-b1bc-a7a428c9eebb/AE+Interconnection+Guide+01312017+R8+final+030917.pdf?MOD=AJPERES>
- Austin Energy. 2017. *Solar Program: Residential Solar Photovoltaic Incentive Program Guidelines*.  
<https://austinenergy.com/wps/wcm/connect/e4b07e7e-da58-42bc-8240-e2dfc8171de4/Residential+Solar+Program+Guidelines.pdf>
- Austin Energy. *Solar Solutions*.  
<https://austinenergy.com/wps/portal/ae/green-power/solar-solutions/solar-solutions>
- Clean Power Research. *Maine Distributed Solar Valuation Study*. 2015.  
[http://www.maine.gov/mpuc/electricity/elect\\_generation/documents/MainePUCVOS-ExecutiveSummary.pdf](http://www.maine.gov/mpuc/electricity/elect_generation/documents/MainePUCVOS-ExecutiveSummary.pdf)
- DSIRE. *CPS Energy - Solar PV Rebate Program*.  
<http://programs.dsireusa.org/system/program/detail/2794>
- DSIRE. *Oncor Electric Delivery - Solar Photovoltaic Standard Offer Program*.  
<http://programs.dsireusa.org/system/program/detail/3168>
- Energy Information Administration. *Natural Gas Prices*. 2017.  
[https://www.eia.gov/dnav/ng/ng\\_pri\\_sum\\_dcu\\_STX\\_a.htm](https://www.eia.gov/dnav/ng/ng_pri_sum_dcu_STX_a.htm)
- Graziano, Marcello and Kenneth Gillingham. "Spatial patterns of solar photovoltaic system adoption: The influence of neighbors and the built environment." *Journal of Economic Geography*. (2015) 15 (4): 815-839. October 7, 2014. <https://doi.org/10.1093/jeg/lbu036>.
- Harvey, Tim. Environmental Program Coordinator at Austin Energy. Telephone interview conducted by authors. April 11, 2017

Lappé, Annie. Greentech Media. *Austin Energy's Value of Solar Tariff: Could It Work Anywhere Else?* March 2013. <https://www.greentechmedia.com/articles/read/austin-energys-value-of-solar-tariff-could-it-work-anywhere-else>

National Renewable Energy Laboratory. *The Open PV Project*. <https://openpv.nrel.gov/>

National Renewable Energy Laboratory. *Value-of-Solar Tariffs*. [http://www.nrel.gov/tech\\_deployment/state\\_local\\_governments/basics\\_value-of-solar\\_tariffs.html](http://www.nrel.gov/tech_deployment/state_local_governments/basics_value-of-solar_tariffs.html)

Open Data - City of Austin. *Generation by Fuel Type*. <https://data.austintexas.gov/Utility/Generation-by-Fuel-Type/ss6t-rumq>

Rábago, Karl. *The 'Value Of Solar' Rate: Designing An Improved Residential Solar Tariff*. Solar Industry. February 2013. <http://rabagoenergy.com/files/ra0301bago-value-of-solar-sim-feb-2013.pdf>

Revesz, Richard and Burcin Unel. *Managing the Future of the Electricity Grid: Distributed Generation and Net Metering*. Institute for Policy Integrity, New York University Law School. February 2016. <http://policyintegrity.org/files/publications/ManagingFutureElectricityGrid.pdf>

Solar Energy Industries Association. *New Analysis Shows Huge Growth in Solar Over Past Decade*. <http://www.seia.org/news/new-analysis-shows-huge-growth-solar-over-past-decade>

Townhall. *County Level Election Results*. [https://github.com/tonmcg/County\\_Level\\_Election\\_Results\\_12-16](https://github.com/tonmcg/County_Level_Election_Results_12-16)

US Census Bureau. *American Community Survey 2011*. <https://www.socialexplorer.com/explore/tables>

US Census Bureau. *American FactFinder: Community Facts*. [https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS\\_15\\_1YR\\_S2502&prodType=table](https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_15_1YR_S2502&prodType=table)

US Department of Energy. *City of Austin - Renewable Portfolio Standard*. <https://www.energy.gov/savings/city-austin-renewables-portfolio-standard>

US Census Bureau. *Quick Facts: Places*. <https://www.census.gov/quickfacts/table/PST045216/00>

Utility Dive. *Arizona regulators end retail net metering in value-of-solar proceeding*. December 21, 2016. <http://www.utilitydive.com/news/updated-arizona-regulators-end-retail-net-metering-in-value-of-solar-proce/432838/>



# UNDERSTANDING YOUR SOLAR UTILITY BILL

Austin Energy customers with on-site solar photovoltaic (PV) systems receive a slightly different utility bill than non-solar customers, due to the Value of Solar (VoS) credits earned by generating solar power. These credits offset electricity charges and may result in a surplus depending on how much energy the system generates. See below to learn more about the information presented on your solar utility bill.

## Value of Solar Credits

Solar customers earn a credit for every kilowatt hour (kWh) of solar energy your system produces. Currently, this credit is worth 9.7 cents per kWh. You are billed for the total energy use of your home under the residential tiered rate structure, and then that amount is reduced by the VoS credit.

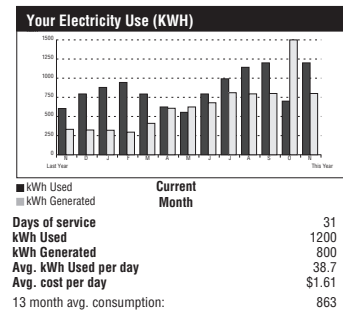
The sample bill below illustrates how the Solar Utility Bill applies VoS credits and where to find your Solar Credit Balance, if applicable:

ELECTRIC SERVICE		SAMPLE BILL	
<b>Read Date</b>	<b>10/15/2019</b>	<b>11/15/2019</b>	<b>Read Diff.</b>
Delivered Read	32628	33328	700
Received Read	20644	20944	300
Net Read	11984	12384	400
<b>Meter # 0000000</b>			
<b>Read Date</b>	<b>10/15/2019</b>	<b>11/15/2019</b>	<b>Generation</b>
Solar PV Read	38967	39767	800
Whole House Consumption in kWh			1200
Total Generation			800
COA - Electric Residential			
Customer Charge			\$10.00
Tier 1 first 500 kWh at \$0.02801 per kWh			\$14.01
Tier 2 next 500 kWh at \$0.05832 per kWh			\$29.16
Tier 3 next 200 kWh at \$0.07814 per kWh			\$15.63
Regulatory Charges 1,200 kWh at \$0.01342 per kWh			\$16.10
Community Benefit Charges			\$7.36
Power Supply Adjustment 1,200 kWh at \$0.02895 per kWh, Winter			\$34.74
Solar Credit 800 PV kWh at \$-0.097 per kWh			-\$77.60
Residential Sales Tax			
Taxable Amount			\$49.40
City Sales Tax 1%			\$0.49
<b>TOTAL CURRENT CHARGES</b>			<b>\$49.89</b>

Whole House Consumption is calculated by adding the net energy consumed from the grid to the solar PV production.

The Value of Solar credit is then applied to your account, reducing the amount owed on the electric portion of your bill.

If the VoS credit is larger than the electric bill, you will see the balance to the left of the Electric Service section of the bill. Any remaining credits roll over to the next month as long as the account remains open, but you can only use them for electricity charges. VoS credits cannot be applied towards other City of Austin charges or be exchanged for cash.



**Solar Credit Balance**

\$25.98

Your solar credit will remain on this electric account and will apply toward future electric charges.



Customer Driven.  
Community Focused.™

For more information about the Value of Solar and other solar programs at Austin Energy, visit [austinenergy.com/go/solar](http://austinenergy.com/go/solar), email [conservation@austinenergy.com](mailto:conservation@austinenergy.com) or call 512-482-5346.



# COMPRENDA SU FACTURA DE SERVICIOS ELÉCTRICOS SOLARES RESIDENCIALES

Los clientes de Austin Energy con sistemas fotovoltaicos (PV) instalados reciben una factura de servicios públicos un poco distinta a los clientes que no tienen energía solar, debido a los créditos del Valor Solar (VoS) ganados al generar energía solar. Estos créditos compensan los cargos de electricidad, y pudieran resultar en un excedente dependiendo de cuánta energía genere el sistema. Vea abajo para aprender más sobre la información presentada en su factura de servicios públicos solares.

## Créditos del Valor Solar

Los clientes solares ganan un crédito por cada kilovatio hora (kWh) de energía solar que produce su sistema. Actualmente, este crédito vale 9.7 centavos por kWh. Usted recibe una factura por el total de energía usada en su casa bajo la estructura de tarifa residencial por niveles, y luego se le restará el crédito del VoS.

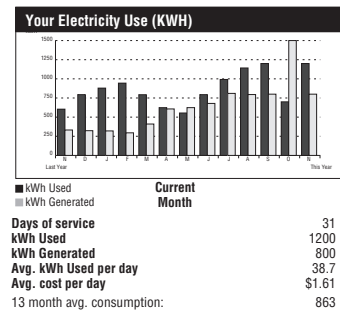
El siguiente ejemplo de factura ilustra cómo se aplican los créditos del VoS a la factura de servicios eléctricos solares y dónde puede encontrar el saldo del crédito solar, si aplica:

ELECTRIC SERVICE		MODELO DE FACTURA	
<b>Read Date</b>	<b>10/15/2019</b>	<b>11/15/2019</b>	<b>Read Diff.</b>
Delivered Read	32628	33328	700
Received Read	20644	20944	300
Net Read	11984	12384	400
<b>Meter # 0000000</b>			
<b>Read Date</b>	<b>10/15/2019</b>	<b>11/15/2019</b>	<b>Generation</b>
Solar PV Read	38967	39767	800
Whole House Consumption in kWh			1200
Total Generation			800
COA - Electric Residential			
Customer Charge			\$10.00
Tier 1 first 500 kWh at \$0.02801 per kWh			\$14.01
Tier 2 next 500 kWh at \$0.05832 per kWh			\$29.16
Tier 3 next 200 kWh at \$0.07814 per kWh			\$15.63
Regulatory Charges 1,200 kWh at \$0.01342 per kWh			\$16.10
Community Benefit Charges			\$7.36
Power Supply Adjustment 1,200 kWh at \$0.02895 per kWh, Winter			\$34.74
Solar Credit 800 PV kWh at \$-0.097 per kWh			-\$77.60
Residential Sales Tax			
Taxable Amount			\$49.40
City Sales Tax 1%			\$0.49
<b>TOTAL CURRENT CHARGES</b>			<b>\$49.89</b>

El consumo de toda la casa se calcula añadiendo la energía neta consumida de la red a la producción del PV solar.

Se aplica luego el crédito del Valor Solar a su cuenta, reduciendo el monto debido en la porción de electricidad de su factura.

Si el crédito del VoS es mayor que la factura eléctrica, usted verá el saldo a la izquierda de la sección "Servicio eléctrico" de la factura. Cualquier crédito restante se transfiere al próximo mes, siempre y cuando la cuenta permanezca abierta, pero solo puede usarlo para cargos de electricidad. Los créditos del VoS no se pueden aplicar a otros cargos de la Ciudad de Austin ni intercambiarse por dinero en efectivo.



**Solar Credit Balance**

**\$25.98**

Your solar credit will remain on this electric account and will apply toward future electric charges.



Customer Driven.  
Community Focused.™

Para más información sobre el Valor Solar y otros programas solares de Austin Energy, visite [austinenergy.com/go/solar](http://austinenergy.com/go/solar), correo electrónico [conservation@austinenergy.com](mailto:conservation@austinenergy.com) o llame al 512-482-5346.

**From:** [PUCWeb Notification](#)  
**To:** [Jan Noriyuki](#)  
**Subject:** Notice: A comment was submitted to PUCWeb  
**Date:** Thursday, November 3, 2022 11:00:09 AM

---

The following comments were submitted via PUCWeb:

Name: Tom Wagoner  
Submission Time: Nov 3 2022 10:09AM  
Email: [twagoner@betaseed.com](mailto:twagoner@betaseed.com)  
Telephone: 208-423-4648  
Address: 3791 N 2381 E  
Filer, ID 83328

Name of Utility Company: Idaho Power

Case ID: IPC-E-22-22

Comment: "Disclosure: I am a customer new to generating a portion of my home power needs power via 'green' solar rooftop panels. Comment: a. I have heard reports that the power commission is considering adding up to, a 40% tax (charge) on credits for green power generated by customers. For what? No more or upgraded transmission lines or transformers were needed for our home solar connections, than were already in use to supply (non-generating) consumption by our home. All that they replaced, was an old power meter with a new dual-direction meter. I understand that large commercial producers of wind or solar power, need upgraded or new transmission systems, but small or home customer systems designed to offset only part of a family's power needs, does not need additional costs added, other than perhaps the meter fee. b. Idaho Power advertises heavily to 'encourage' green energy practices, giving 'free' LED lights, insulation reviews..... IP touts the use of hydro and other emissions-free production: yet when a consumer gets on board and follows the trending demands for green energy, it appears this is viewed as unwanted competition: and the power commission is considering taxing the competition completely out of the market. This is wrong, for the consumer, for the environment, and for the true mission of the Public Utilities Commission. Fairly priced power, lawfully regulated by the IPUC, needs to be priced the same, whether generated efficiently by huge corporations such as IP, or by the privately purchased hardware of citizen/customers. "

-----

**From:** [Marilee Lovell \(marilee@hendersoncorporation.com\) Sent You a Personal Message](mailto:marilee@hendersoncorporation.com)  
**To:** [Jan Noriyuki](#)  
**Subject:** IPC-E-22-22 Public Comment  
**Date:** Thursday, November 3, 2022 2:24:33 PM

---

CAUTION: This email originated outside the State of Idaho network. Verify links and attachments BEFORE you click or open, even if you recognize and/or trust the sender. Contact your agency service desk with any concerns.

Dear Idaho Public Utilities Commission,

Puc- I purchased rooftop solar for my home in 2017. Since that time, there have been numerous meetings regarding the so called cost of rooftop solar to Idaho Power.

These meetings in which Idaho Power presents a report that backs up their financial concerns that customers with rooftop solar costs them money will keep happening until the room is not packed, because the customers have grown weary. Or maybe I am just weary. Weary of thinking about something to say that will sway the PUC?even though I have no background in solar efficiencies for the grid. Weary of the knowledge that Idaho Power will continue to send me tips on how to be more energy efficient, but only to a point i.e. I can weather strip and pull my cords out of the sockets to save energy?but if I have solar that saves energy, I am now costing Id Power money. Ultimately I am weary that Idaho Power promotes all they do to help climate change but can?t partner or appreciate those with rooftop solar.

Please look carefully at the independent study conducted by Crossborder Energy, which points out several shortcomings in Idaho Power's own study on the costs and benefits of customer-owned rooftop solar. Idaho Power will use this study to justify trying to reduce compensation rates to solar owners. To arrive at fair rates, we first need a fair study.

Crossborder's study states, "We conclude that Idaho Power?s choice of assumptions and calculation methods significantly undervalue the five components that the utility quantified. We present our own calculations of an ECR with these five elements. In addition, the VODER Study fails to quantify important benefits of distributed solar that the Commission directed the utility to analyze in Order No. 35284 -- benefits that are known and measurable, will impact rates, and will benefit Idaho ratepayers and citizens.?"

Idahoans deserve solar rates based on a more fair and complete analysis. I urge you to reject Idaho Power's study and look to Crossborder's study as a more accurate measure of the value (to ALL ratepayers) of customer-owned solar power.

Sincerely,

Marilee Lovell  
915 N 19TH ST  
BOISE, ID 83702  
[marilee@hendersoncorporation.com](mailto:marilee@hendersoncorporation.com)  
(208) 424-8765

This message was sent by KnowWho, as a service provider, on behalf of an individual associated with Sierra Club. If you need more information, please contact Lillian Miller at Sierra Club at [core.help@sierraclub.org](mailto:core.help@sierraclub.org) or (415) 977-5500.

**From:** [Shelise Grigg \(shelisegrigg@hotmail.com\) Sent You a Personal Message](mailto:shelisegrigg@hotmail.com)  
**To:** [Jan Noriyuki](#)  
**Subject:** IPC-E-22-22 Public Comment  
**Date:** Thursday, November 3, 2022 2:50:03 PM

---

CAUTION: This email originated outside the State of Idaho network. Verify links and attachments BEFORE you click or open, even if you recognize and/or trust the sender. Contact your agency service desk with any concerns.

Dear Idaho Public Utilities Commission,

I have come to realize that things are not as simple as people may want to make them seem especially when it comes to studies and statistics. If there is a bias with those that are doing the study the results cannot be expected to be impartial. It looks like this study did not come out with similiar results to another independent study. "Idaho Power? s study concludes excess power from local solar owners is worth 2.8-4 ¢/kWh while Crossborder determines that same power is worth 18.3 ¢/kWh -- nearly five times more. The current valued at the retail rate of electricity is around 8-10 ¢/kWh." I tend to believe an independent study over one that is done by an interested party. Please take this into consideration and reject the study and allow those who have paid into Solar to get fair compensation. Thank you!

Please look carefully at the independent study conducted by Crossborder Energy, which points out several shortcomings in Idaho Power's own study on the costs and benefits of customer-owned rooftop solar. Idaho Power will use this study to justify trying to reduce compensation rates to solar owners. To arrive at fair rates, we first need a fair study.

Crossborder's study states, "We conclude that Idaho Power's choice of assumptions and calculation methods significantly undervalue the five components that the utility quantified. We present our own calculations of an ECR with these five elements. In addition, the VODER Study fails to quantify important benefits of distributed solar that the Commission directed the utility to analyze in Order No. 35284 -- benefits that are known and measurable, will impact rates, and will benefit Idaho ratepayers and citizens.?"

Idahoans deserve solar rates based on a more fair and complete analysis. I urge you to reject Idaho Power's study and look to Crossborder's study as a more accurate measure of the value (to ALL ratepayers) of customer-owned solar power.

Sincerely,

Shelise Grigg  
1914 N Summerwind Pl  
Kuna, ID 83634  
[shelisegrigg@hotmail.com](mailto:shelisegrigg@hotmail.com)  
(208) 922-1627

This message was sent by KnowWho, as a service provider, on behalf of an individual associated with Sierra Club. If you need more information, please contact Lillian Miller at Sierra Club at [core.help@sierraclub.org](mailto:core.help@sierraclub.org) or (415) 977-5500.

**From:** [PUCWeb Notification](#)  
**To:** [Jan Noriyuki](#)  
**Subject:** Notice: A comment was submitted to PUCWeb  
**Date:** Thursday, November 3, 2022 3:00:08 PM

---

The following comment was submitted via PUCWeb:

Name: Kevin Kitz  
Submission Time: Nov 3 2022 2:49PM  
Email: kevin@kitzworks.com  
Telephone: 208-761-3442  
Address: 5078 E Stemwood St  
Boise, ID 83716

Name of Utility Company: Idaho Power

Case ID: IPC-E-22-22

Comment: "Dear PUC and Idaho Ratepayers: My name is Kevin Kitz and am a resident of Boise. I have worked as renewable energy engineer in geothermal and other energy sources for over 40 years. I have negotiated power purchase agreements with Idaho Power and multiple other utility companies. I believe that the export credit rate proposed by Idaho Power is reasonable and should be approved by the PUC. Although I have solar panels on my roof, I am opposed to net zero metering. Net-zero metering was not a well-conceived idea, and the PUC must adopt a go-forward policy that only compensates rooftop PV owners for the value that the PV system delivers to those who do not have rooftop PV so as to avoid transferring of system costs from one group of customers to another. Net zero metering (high export credit rate) is an inherently inequitable transfer of costs, with the greatest burden falling to those with the lowest incomes. Rooftop PV (lost sales and export rate) must result in a system power price lower than would be provided by utility-scale PV, which is a known cost. A slightly higher export rate may be justified since rooftop PV avoids some power delivery losses. Appendix 1 analyzes some of the components that comprise the overall export credit rate, and shows that overall the Idaho Power proposal is more reasonable. More importantly, it is logically self-evident that net-zero pricing has neither long-term nor wide-scale viability. Example: If half of the building owners pay nothing but the nominal connection charge, what happens to the cost of power for the other half? The answer is that costs will roughly double for those without PV. The net-zero group does not pay for any of the power infrastructure they use every day from wires to power plants. It is inequitable for renters, lower income owners, and those with poor rooftop exposure, among others. It is most harmful to those with the lowest incomes who can least afford increased energy costs. Export credit rates that enable net-zero payments is poor public policy. In summary, the PUC should adopt an export credit rate which makes non-PV owners indifferent to whether the PV comes from rooftops or large central plants. To this end, the proposed rate by Idaho Power is much closer to the appropriate value than a price that effectively continues net-zero metering. Respectfully, Kevin Kitz, P.E.

APPENDIX 1: Analysis of Export Credit Rate Components The Idaho Power study is overall more accurate, but the independent study raises some valid points. • Value of generation: The IPCo value of PV power of 2.8 cents is reasonable. It is possible that with passage of the Inflation Reduction Act even this value may be high. There is no evidence to support a cost of utility-scale PV power of 4.7 cents/kwh from the independent study. • Avoided capacity: The Idaho Power avoided cost of 1.1 cents may even be a little high. Any fixed value neglects that



PV capacity value falls with time and eventually arrives at zero. Plus, aggregate rooftop PV will deliver less capacity value than an ideal south-facing rooftop. Around the state rooftop PV can be observed that is shadowed by trees, chimneys, and pointing every direction including almost north all of which reduce the aggregate true capacity value. A reasonable guess for the true aggregate rooftop PV capacity value would be <75% of theoretical maximum. •

Transmission and Distribution deferral: Once PV deployment has pushed the load curve peak to close to sunset, additional PV (rooftop or utility) will not reduce future transmission or distribution capital costs. The 4.7 cents/kwh from the independent study is unrealistic. •

Fuel hedging costs: The independent study is correct to flag this as an avoided cost that is not accounted for. This has been an error in PURPA and IRP methodology for over 20 years. I don't know what the correct value of securing a long-term gas price is, but it is for sure not zero. •

Value of CO2 reduction: A combined cycle gas turbine emits 0.6 tons/MWh, so at \$20/ton of CO2 the value of CO2 is  $.6 * \$50 = \$12/\text{MWh} = 1.2$  cents. The independent study value is reasonable only if the reported full social value of CO2 of ~\$50/ton is used. Since the comparator is utility scale PV, not a gas plant, the correct value for CO2 reduction is \$0, as proposed. It is unlikely that rooftop PV is the cheapest way to remove the next increment of CO2 from the grid. "

-----

---

**From:** [Brian Formusa](#)  
**To:** [Jan Noriyuki](#)  
**Subject:** Comments on #IPC-E-22-22  
**Date:** Thursday, November 3, 2022 3:22:12 PM

---

**CAUTION: This email originated outside the State of Idaho network. Verify links and attachments BEFORE you click or open, even if you recognize and/or trust the sender. Contact your agency service desk with any concerns.**

---

Brian Formusa  
bkformusa@msn.com

I am a licensed professional engineer, who studied and obtained a degree from Cal Poly in solar engineering. I've installed many large scale solar projects in the state, many of them net metering and many more residential net metering projects. The proposed rates submitted by IPCO are undervalued and unfair to those who are trying to obtain a reasonable rate of return on their solar investments. It would be a great disservice to not only the power industry but the public in general in allowing IPCO to have such a low return rate on net metering projects approved. Thank you, case #IPC-E-22-22.

**From:** [PUCWeb Notification](#)  
**To:** [Jan Noriyuki](#)  
**Subject:** Notice: A comment was submitted to PUCWeb  
**Date:** Thursday, November 3, 2022 4:00:07 PM

---

The following comments were submitted via PUCWeb:

Name: Tom Baskin  
Submission Time: Nov 3 2022 3:54PM  
Email: tombaskin3@gmail.com  
Telephone: 208-890-2430  
Address: 3688 N willowbar Way  
Garden City, ID 83714  
Name of Utility Company: IPC  
Case ID: IPC-E-22-22

Comment: "Thank you in advance for considering these comments on IPC-E-22-22. I start with something that you have already recognized as a concern in you previous order 35409 of December 20, 2019. However, it is a point worth reiterating. It was thought impractical and too expensive to enlist a qualified third party to perform a study of the ECR. So, Applicant was directed to perform the required "fair and credible" study. This sets up an irreconcilable conflict that diminishes the value of whatever work was done. Set the "fair" part of the expectation aside for a moment. Applicant bears an almost impossible to meet burden of producing anything that will not be met with the skepticism of rooftop solar producers. The VODER is over 130 pages long. It does not invite a leisurely read. It is dense with acronyms and technical jargon. In drafting the thing, Applicant did nothing to allay the not unreasonable worry that the cat is being skinned in a way that will benefit the study's author. Quite apart from the the question of whether the conclusions of the study are credible, I question whether any study performed or commissioned by Applicant will ever be viewed as credible. This was an entirely avoidable public relations blunder. However, I think there are reasons to be concerned about both the fairness and credibility of the VODER. I have reviewed the Crossborder study and the accompanying comments of the Idaho Conservation League (ICL). If nothing else, the Crossborder study demonstrates that the ECR depends on the weight and value to be assigned to relevant assumptions, and the data set considered. The Crossborder study shows that there is more than one way to skin this cat. As ICL noted, the VODER gives inadequate consideration to environmental benefits and avoided environmental costs associated with residential rooftop solar installations. Yet, the IPUC has specified that quantifiable environmental costs and benefits must be considered in evaluating the ECR. Climate change is a global phenomenon, the tragedy of the commons writ large, and it is hard not to despair that there is nothing an individual might do that will make any difference. However, the bigness of the problem does not excuse Applicant from considering avoided environmental costs and benefits of rooftop solar. Climate change is having, and will continue to have, quantifiable health, economic and environmental impacts on everyone who lives in this state. Power generation which puts more carbon into the air can be avoided by encouraging rooftop solar, and this avoided environmental cost is quantifiable. Even renewable energy projects such as large-scale wind and solar farms implicate measurable costs that can be avoided by encouraging rooftop solar. Such large-scale projects have a real estate footprint, with associated costs and environmental impacts. Why develop such tracts when the rooftops are already there, waiting to be exploited, with no other competition for the sunlight that drenches them? I agree with ICL, and others who have commented, that the VODER does not adequately consider the full range of quantifiable costs and benefits associated with rooftop solar. "

**From:** [PUCWeb Notification](#)  
**To:** [Jan Noriyuki](#)  
**Subject:** Notice: A comment was submitted to PUCWeb  
**Date:** Thursday, November 3, 2022 9:00:07 AM

---

The following comments were submitted via PUCWeb:

Name: John Gebhards  
Submission Time: Nov 3 2022 8:57AM  
Email: gebhardsj@gmail.com  
Telephone: 208-630-4093  
Address: 1444 Dragonfly Loop PO Bxx 4391  
MCCALL, ID 83638

Name of Utility Company: Idaho Power

Case ID: IPC-E-21-21

Comment: "I am commenting on Idaho Powers continued assault on solar power generation. They downplay the value that home based arrays can have for the Power Grid and how to compensate the owners of such systems. The energy that Idaho Power receives from home arrays comes at no cost to them, other than net metering compensation. These systems were put in place by homeowners at their expense and are maintained at their expense. To me it feels as though Idaho Power is not grateful for such systems as they feel they have no control over them and can't maximize profits from such systems. Southern Idaho is a prime location for solar production, but with Idaho Powers monopoly on power production, they continue to throw hurdles in the way for those that want to make a small difference in how power is produced in our region. "

-----

Name: Troy Riecke  
Submission Time: Nov 3 2022 8:31AM  
Email: troydr@gmail.com  
Telephone: 208-908-3254  
Address: 5315 S Pegasus Way  
Boise, ID 83716

Name of Utility Company: Idaho Power Company

Case ID: IPC-E-22-22

Comment: "I oppose ID Power's plan to change net metering rates for solar generators. The current structure helps incentivize purchase and installation of solar panels. As we move into a future where vehicles are all electric we will likely discover our electric infrastructure is not adequate to supply all of this new demand. In addition, Idaho Power has a goal to provide 100% clean energy by 2045. By incentivizing solar installations and having a distributed model of power generation they will better be able to meet future electricity demands and meet their clean energy goals. I have been trying to make solar work for me but getting an appropriate payback considering cost to install and credits for power generation are already

very tight. I have been holding off on solar panel purchase until the net metering rates are resolved and will likely not purchase solar if the credit rates are reduced below what they charge."

-----

---

**From:** [PUCWeb Notification](#)  
**To:** [Jan Noriyuki](#)  
**Subject:** Notice: A comment was submitted to PUCWeb  
**Date:** Thursday, November 3, 2022 10:00:07 AM

---

The following comments were submitted via PUCWeb:

Name: John Carr  
Submission Time: Nov 3 2022 9:35AM  
Email: JohnCarr411@gmail.com  
Telephone: 801-361-1281  
Address: 2660 E Red Garnet  
Eagle , ID 83616

Name of Utility Company: Idaho power

Case ID: IPC-E-22-22

Comment: "The recent study, conducted by Idaho Power, utilizes, incorrect principles and methods for evaluating rooftop solar. Rooftop solar adds high value to Idaho's power grid. We should continue to incentivize customers of Idaho Power to install rooftop solar by continuing the current net metering practices. As electricity demands increase over the next decade, we will be glad for all of the rooftop solar. We have to bolster supply. "

-----

Name: Rick Davis  
Submission Time: Nov 3 2022 9:29AM  
Email: pokytgbem@gmail.com  
Telephone: 208-427-5301  
Address: 415 Randolph  
Pocatello, ID 83201

Name of Utility Company: Idaho Power

Case ID: IPC-E-22-22

Comment: "Re the Vader study: You have a duty to consider other factors than Idaho Power's profit margin. Rooftop solar works, and works well. Our system is several years old and we've had no problems with it. It's critical that rooftop solar installations be expanded. Allowing the company to reduce Net Metering credits is wrong on many levels."

-----

**From:** [PUCWeb Notification](#)  
**To:** [Jan Noriyuki](#)  
**Subject:** Notice: A comment was submitted to PUCWeb  
**Date:** Thursday, November 3, 2022 7:00:07 AM

---

The following comments were submitted via PUCWeb:

Name: Shannon Ansley  
Submission Time: Nov 2 2022 7:06PM  
Email: [anslshan59@gmail.com](mailto:anslshan59@gmail.com)  
Telephone: 208-220-2851  
Address: 424 South 7th Avenue  
Pocatello, ID 83201

Name of Utility Company: Idaho Power

Case ID: IPC-E-22-22

Comment: "November 2, 2022 Shannon Ansley 424 South 7th Avenue Pocatello, Idaho 83201 I do not yet have solar panels on the roof of my house, but I hope to in the near future. I feel it is one of the actions that private citizens can do to help fight the effects of climate change on our planet. While I appreciate that Idaho Power (IP) has committed to 100% clean energy by 2045, reducing their purchase price of renewable energy generated by residential solar is unacceptable. If Idaho Power devalues power generated by non-utility solar installations, then the solar industry in the IP service area will be destroyed. The proposed IP price structure presented in the Value of Distributed Energy Resources Study (VODER Study) is designed to deter the competitive threat of solar energy systems and force Idaho consumers to exclusively purchase electricity from the utility. Perhaps federal anti-trust laws and recent court precedents could be used to prevent this immoral and unethical business practice. Perhaps, Idaho citizens, who pride themselves on independence, choice, and self-reliance, will realize that big industry is once again profiting on the backs of the little guy. I want to have a choice to put solar on my home in a way that does not double the payback period for the equipment and installation. I do not want to be penalized by the regional utility because I decide to help fight climate change. There are other examples in the United States for how utilities and non-utility generators of solar power can work together in a manner that is mutually beneficial. The State of Hawaii Smart Export Program is one that should become a model for all utilities in the US. I would like for Idaho Power to go back to the drawing table, start over, and propose another strategy to work together with the residential solar industry. Best regards to PUC, Shannon Ansley "

-----

Name: Ryan Owsley  
Submission Time: Nov 2 2022 5:44PM  
Email: rsodermmd@gmail.com  
Telephone: 208-859-1509  
Address: 2834 S Kingsbury Way  
Eagle, ID 83616

Name of Utility Company: Idaho Power

Case ID: IPC-E-22-22

Comment: "I cannot make the hearing tomorrow regarding Regarding rooftop solar but wanted to comment that I have had it about 5 years and want Idaho power to continue to support those owners who want it for there own power and the ability to supply power back to the grid. "

-----



Name: Shannon Ansley  
Submission Time: Nov 2 2022 7:22PM  
Email: ansishan59@gmail.com  
Telephone: 208-220-2851  
Address: 424 South 7th Avenue  
Pocatello, ID 83201

Name of Utility Company: Idaho Power

Case ID: IPC-E-22-22

Comment: "Dear Commissioners, Please read the article below that details a utility attempting to devalue residential-generated solar in Colorado, identical to what Idaho Power is trying to do. [https://coloradosun.com/2022/11/01/colorado-solar-panels-puc-xcel-regulators-questions/?utm\\_campaign=Rockies%20Today&utm\\_medium=email&utm\\_source=Revue%20newsletter](https://coloradosun.com/2022/11/01/colorado-solar-panels-puc-xcel-regulators-questions/?utm_campaign=Rockies%20Today&utm_medium=email&utm_source=Revue%20newsletter)  
Best regards. Shannon Ansley "

-----

Name: Celia Eastman  
Submission Time: Nov 2 2022 5:25PM  
Email: celiaeastman@gmail.com  
Telephone: 208-262-1872  
Address: 302 W Spruce St  
Caldwell, ID 83605

Name of Utility Company: Idaho Power

Case ID: IPC-E-22-22

Comment: "Concerning the consideration of Idaho Power's study for future compensation of solar generators, I urge careful consideration of a fair compensation structure. Homeowners invest a significant amount to install solar, and the extra power that they don't use and send back to the utility company is a very valuable asset for Idaho Power. Please do not cut our compensation."

-----

Name: Brian Thompson  
Submission Time: Nov 2 2022 6:57PM  
Email: brianthompson1@hotmail.com  
Telephone: 360-624-3502  
Address: 1905 W Deep Creek Ct  
Nampa, ID 83686

Name of Utility Company: Idaho Power

Case ID: IPC-E-22-22

Comment: "Idaho Power should continue to buy energy from residential solar generators at the current net metering rates. Our family made the decision to add solar to our home to reduce our impact on the environment while also helping Idaho Power meet their clean energy goals. We have invested our own money into solar power generation that the utility and other utility customers don't have to maintain. All excess energy we produce is sent back to the grid to help alleviate demand issues the utility experiences. Please consider independent analysis/ studies on the benefits of customer-owned rooftop solar power and reject Idaho Power's proposed changes to net metering."

-----

Name: Cary Fortin  
Submission Time: Nov 2 2022 8:44PM  
Email: cary@trygoodbuy.com  
Telephone: 208-890-8089  
Address: 2105 E. Warm Springs Ave.  
Boise, ID 83712

Name of Utility Company: Idaho Power

Case ID: IPC-E-22-22

Comment: "I am unable to attend the hearing in person, but as an Idaho Power customer I want to let the PUC know that I am concerned that by using outdated data and methodologies that undervalue distributed generation, Idaho Power has not produced a study that fairly values electricity exported by customers with solar generation. I urge the PUC to listen to public input and make sure that electricity generated by residential and business customers with solar is compensated accurately. Distributed generation benefits both customers with solar and their neighbors without solar as it helps reduce demand at peak times and increases the amount of clean energy on the grid. I would like us to develop a modern, reliable, and resilient grid, and distributed solar is an important part of that transition. If solar generation is not fairly valued, customer investment in distributed generation will be reduced and all customers will be harmed in the long run. I ask the PUC to not support Idaho Power's study as it currently stands and instead work towards a fair and balanced study of the value of exported electricity, as was originally required by the PUC. As an Idaho Power customer with solar I would like others to be able to take advantage of the benefits of renewable energy that I currently experience. My electricity costs will be predictable and affordable in the long run and I am helping Idaho Power reach their stated goal of supplying 100% renewable energy by 2045. A cost/benefit analysis that does not accurately value distributed generation will unfairly impact future rates for customers with solar and will slow the adoption of renewable energy. Please ensure that the results of this study are not guided only by the utility company's interests, but instead by taking into account up to date information and methodologies that fairly value the benefits of distributed renewable generation to neighboring customers and the grid in general. "

-----