MINUTES OF THE MEETING
OF THE
ASSEMBLY COMMITTEE ON COMMERCE AND LABOR
SUBCOMMITTEE ON ENERGY

Seventy-Ninth Session
March 27, 2017

The Committee on Commerce and Labor Subcommittee on Energy was called to order by Chair Chris Brooks at 4:20 p.m. on Monday, March 27, 2017, in Room 4100 of the Legislative Building, 401 South Carson Street, Carson City, Nevada. The meeting was videoconferenced to Room 4401 of the Grant Sawyer State Office Building, 555 East Washington Avenue, Las Vegas, Nevada. Copies of the minutes, including the Agenda (Exhibit A), the Attendance Roster (Exhibit B), and other substantive exhibits, are available and on file in the Research Library of the Legislative Counsel Bureau and on the Nevada Legislature's website at www.leg.state.nv.us/App/NELIS/REL/79th2017.

COMMITTEE MEMBERS PRESENT:

Assemblyman Chris Brooks, Chair
Assemblywoman Irene Bustamante Adams
Assemblyman Paul Anderson
Assemblyman Nelson Araujo
Assemblywoman Maggie Carlton
Assemblywoman Sandra Jauregui
Assemblyman Jim Marchant

COMMITTEE MEMBERS ABSENT:

None

GUEST LEGISLATORS PRESENT:

Assemblyman Justin Watkins, Assembly District No. 35

STAFF MEMBERS PRESENT:

Marji Paslov Thomas, Committee Policy Analyst
Wil Keane, Committee Counsel
Earlene Miller, Committee Secretary
Olivia Lloyd, Committee Assistant

OTHERS PRESENT:

Sean Gallagher, Vice President of State Affairs, Solar Energy Industries Association
Jessica Scott, Regional Manager, Interior West, Vote Solar
Judy Stokey, Vice President, Government & Community Strategy, NV Energy
Bo Balzar, Division Manager, Bombard Renewable Energy
Alexander McDonough, Vice President, Public Policy, Sunrun, San Francisco, California
Daniel Witt, Manager, Business Development and Policy, Tesla, Inc.
Louise Helton, Private Citizen, Las Vegas, Nevada
Jorge Gonzalez, Private Citizen, Las Vegas, Nevada
Laurie Lee, Private Citizen, Blue Diamond, Nevada
Travis Miller, Director, Great Basin Solar Coalition
Erica Dahl, Director, Public Policy and Government Affairs, Vivint Solar Developer LLC, Lehi, Utah
Joshua J. Hicks, representing SunStreet Energy Group, LLC
Mark Dickson, President, Simple Power, Truckee, California
Tim Webb, Private Citizen, Las Vegas, Nevada
Jane Feldman, Private Citizen, Las Vegas, Nevada
Monika Payne, Private Citizen, Las Vegas, Nevada
Robert Bastien, Private Citizen, Carson City, Nevada
Eli Smith, Private Citizen, Reno, Nevada
Casey Coffman, Regional Vice President, Agriculture and Commercial Division, Sunworks Solar Power, Reno, Nevada
Thomas Gray, Private Citizen, Carson City, Nevada
Verna Mandez, Private Citizen, Las Vegas, Nevada
Marcia Bollea, Private Citizen, Las Vegas, Nevada
Unidentified Speaker on behalf of Alondra Regalado, Private Citizen, Las Vegas, Nevada
Kevin L. McGehee, Private Citizen, Reno, Nevada
Tom Polikalas, Private Citizen, Reno, Nevada
Linda Nerstad, Private Citizen, Reno, Nevada
Natalie Hernandez, Private Citizen, Reno, Nevada
Larry Fosgate, Private Citizen, Las Vegas, Nevada
Eric W. Young, Private Citizen, Las Vegas, Nevada
Thomas M. Dudas, Private Citizen, Las Vegas, Nevada
Linda Saunders, Private Citizen, Reno, Nevada
Mike Rocco, Private Citizen, Truckee, California
Kyle J. Davis, representing Nevada Conservation League
Tobi Tyler, Private Citizen, Stateline, Nevada

Chair Brooks:
[Roll was called. Subcommittee rules and protocol were explained.] This afternoon we will hear one bill, Assembly Bill 270, concerning net metering. I would like to remind the Subcommittee members that we are responsible for reviewing and analyzing proposed energy legislation that has been referred to us by the Assembly Committee on Commerce and Labor. We will make recommendations on legislation, which will then be provided to the Committee for deliberation. Therefore, I strongly encourage the Subcommittee members to ask questions and provide input as we go forward in this process.

Today, in order to allow as many people to testify as possible, I encourage you to keep your comments brief and to the point. Please refrain from repeating arguments or points made by prior presenters. There is nothing wrong with a simple "me too" or "I agree." If you have written testimony, please refer briefly to the testimony and provide it to the Subcommittee secretary. There is no need to read the testimony in its entirety. Additionally, if you are unable to provide your testimony today, you are welcome to submit written testimony within the next 48 hours for inclusion in the record.

I will open the hearing for Assembly Bill 270. I want to make sure everyone knows we are working off an amendment that the stakeholders and Assemblyman Watkins have been working on in the last few weeks (Exhibit C). Those of you following along, make sure you are looking at the amendment to A.B. 270, not the original bill.

Assembly Bill 270: Revises provisions governing net metering. (BDR 58-686)

Assemblyman Justin Watkins, Assembly District No. 35:
With me today are two copresenters, Sean Gallagher from Solar Energy Industries Association (SEIA) and Jessica Scott from Vote Solar. I would be remiss if I did not say that if this table were longer, I would have many more people up here with me. We have had a number of stakeholders working toward a solution. As Chair Brooks stated, we are working off a mock-up amendment that SEIA has provided and that I am in agreement with, but I do not anticipate the amendment will be the final version of the bill. I do think it carries all of the points we will be discussing moving forward with all the industry leaders, but if we had extra seats up here, I think NV Energy deserves a place at this table. People in the industry and people at the Public Utilities Commission of Nevada (PUCN) also deserve a seat at this table. That being said, we will present the amendment in full.

I would like to start off by providing a little bit of a history to how we got to the point where we are today. You will notice from the title of Assembly Bill 270, this bill is meant to restore net metering. Three months ago, I think I had an understanding of what net metering was and is, but that has evolved over time as I began working on this bill and educated myself on energy policy.

Net metering started in 1997 in Nevada. It is an industry term used to signify the rate a utility must provide and pay to a customer who produces excess energy to the system, either through solar or any other renewable means. Typically, solar has been the excess energy provider in this state. In the simplest terms, net metering is the generation of power in kilowatt hours that works its way through an energy system in reverse and actually reverses the meter of energy that is provided to the system. At any time of the day, customers' solar systems may produce more or less electricity than is needed for their home or business. When the system production exceeds the customer's demand, the excess energy generation automatically goes through the electric meter to the utility grid running the meter backwards; hence the term "net metering." What a customer's meter would read at the end of the month would be the difference between the energy produced and the energy consumed.

Many people in Nevada now understand net metering. I can say from being in the field and knocking on doors that we made close to 30,000 attempts to meet voters. In my district, solar was the second most important issue behind education.

In 1997, when net metering was introduced to Nevada, it was a true retail rate, meaning every kilowatt hour produced through a customer's solar system canceled out every kilowatt hour consumed through the grid. As somewhat of a pilot program, it was limited to the number of customers who could be on the utility at any given time on solar. Over time, through several legislative sessions, the Legislature amended net metering. The Legislature either raised the cap or changed what net metering would be in this state.

Most significant was the 2015 amendment to Nevada's net metering policy. In 2015, we attempted to get rid of the net metering cap that was in place. Up to that point, net metering was 3 percent of the utility customers in Nevada. We moved it to 5 percent, with the provision that the PUCN was tasked with determining what the value of solar was going to be long term. That was enacted through Senate Bill 374 of the 78th Session. As part of S.B. 374 of the 78th Session, the new net metering rates were to transition from small commercial and residential customers to a cost-based rate structure over the next 12 years, running through 2028.

What happened was the 5 percent cap was reached by August 2015. When that was reached, the PUCN had to decide on what the value of solar would be. In December 2015, the PUCN came to a decision, and it was implemented on January 1, 2016. What these rates did was lower the rate that customer generators received for the production of their excess solar to the grid. The rates were low enough that it all but ended residential access to solar generation.

What we are tasked with here as a legislative body is to determine what our policy is going to be moving forward. If the PUCN is correct in the valuation of solar being at the level it is, do we want to allow that moving forward? What A.B. 270 and its amendment (Exhibit C) look to do is two things: provide an immediate sense of relief and access to residential customers in Nevada to rooftop solar by immediately instituting retail rates for net metering in rooftop solar; a long-term solution for the foreseeable future of net metering in Nevada. What that looks like in the amendment, and what will be discussed in detail by

Mr. Gallagher, is two things. First, there would be an evaluation of solar by the PUCN, which they have done before, with a safety net to the consumer—a rate at which it could never fall below. Second, there would be an evaluation of the environmental benefits for encouraging people to use rooftop solar and add that value to the evaluation of what is provided to the customer. You will see the different rates that are provided in the last part of the bill that will be discussed by Mr. Gallagher.

We have had many discussions with NV Energy and many of the stakeholders. I do not anticipate this being the final point, but I do anticipate all the talking points being included in this amendment. Moving forward, I believe we will be able to find consensus in not only this bridge of true retail net metering, which is A.B. 270, but the solution—or the other side of the bridge—will be agreed upon as well.

With the indulgence of the Chair, I will turn it over to the copresenters, or I can answer questions now.

Chair Brooks:
We will hold questions until after the presentation.

Sean Gallagher, Vice President of State Affairs, Solar Energy Industries Association:
Solar Energy Industries Association (SEIA) is the national trade association of the United States solar industry. Through advocacy and education, SEIA and its 1,000 member companies work to make solar energy a mainstream and a significant energy source by expanding markets, removing market barriers, strengthening the industry, and educating the public on the benefits of solar energy.

We are here today to talk about a policy that encourages deployment of residential rooftop solar in Nevada. Our goal is to make it feasible for residents to put solar on their homes in a timely fashion and to do so in a sustainable manner that is fair to all customers and puts people back to work.

Legislation is necessary as the current solar industry in Nevada is struggling and customers are not getting what they want. In the words of the PUCN in the recent Sierra Pacific Power Company rate case order, the January 2016 net metering Assemblyman Watkins referred to all but crushed the rooftop solar industry in northern Nevada and reduced the booming industry from 983 applications by residential homeowners and small commercial businesses in the Sierra Pacific Power Company service territory in 2015 to 41 applications in 2016. Statewide, the decline was even bigger. Solar applications fell from almost 22,000 in 2015 to less than 300 in 2016. This proves the case that solar is just not feasible under the current structure.

We are seeing the effects of this firsthand. A number of our member companies have laid off or transferred hundreds of employees to other states. We have a member company which had intended to expand into Nevada in 2015, but changed its plans due to uncertainty in the market. The company had already entered into a long-term lease for a warehouse in Las Vegas. To date, this warehouse remains empty, although they would love to have a thriving facility buzzing with workers. We have seen a number of long-term local solar businesses close up shop or are in the process of doing so. Some of them are merely hanging on by a thread, in some cases shifting other business plans away from solar. This is unfortunate because before the regime change, Nevada was one of the fastest-growing markets for solar deployment and the investment and job creation that comes along with it.

We are confident this was not the intent of S.B. 374 of the 78th Session, because some of the stated goals in that legislation included encouraging private investment by customers in renewable energy resources, stimulating economic growth, and enhancing the continued diversification of the energy resources used in the state. We think rooftop solar does all those things. The outcome of the legislation and the regulatory process just did not achieve those goals.

We are here today to ask for your support. We are thankful to Assemblyman Watkins in reestablishing this burgeoning industry because we have the potential to create a significant number of jobs. There are already 260,000 Americans working in the solar industry nationwide. That is more than double the number in 2010. By 2021, that number is expected to increase to more than 360,000 workers. We would like Nevada to benefit from those jobs and from the local investment that comes along with them. We want to reestablish the industry in a way that is thoughtful and that allows for a long-term and sustainable future. Sustainable is the key word. We want to engage you and other stakeholders, including NV Energy, into what that future looks like and make sure it benefits all Nevadans.

At this point, we would like to discuss the amendment to the existing bill (Exhibit C). The amendment would work within the existing regime that the PUCN set up early last year and, as Assemblyman Watkins described, establish a fair compensation mechanism for any solar power that hits the grid—what is exported from the customer to the utility. That includes a minimum floor on the value of those solar exports.

The proposed amendment does four primary things, each of which I will explain a bit further. First, it makes technical changes necessary to establish a new tariff that we are calling the "net billing tariff," to distinguish it from traditional net energy metering. Second, it reinstates traditional net metering for a temporary period upon the effective date of the legislation, pending the PUCN's approval of the new utility net billing tariff that is created by the amendment. Third, it creates a new provision defining the net billing tariff and provides guidance to the PUCN as to how to calculate the value of customer-generated solar power and setting the minimum floor values. Finally, it has a provision that protects the benefit of the bargain into which customer generators enter when they make their solar investments. It grandfathers those customers into the existing tariff structure in a way that is consistent with the settlement that the PUCN approved last September.

As described earlier, we created a mock-up of the amendment for you (Exhibit C) in a format similar to what you would receive from the Legislative Counsel Bureau. I believe it has been distributed to you here in the room, and I believe it is on the Nevada Electronic Legislative Information System (NELIS) for people who are viewing online or in Las Vegas. I will briefly describe in more detail the proposed amendment.

Sections 1, 2, and 3 add new definitions and make technical changes to create the new renewable energy net billing tariff within the existing statutory framework as simply as possible to *Nevada Revised Statutes* (NRS) 704.768, and adds new code sections: NRS 704.7685 and NRS 704.7715.

The new tariff is called "net billing" to differentiate it from traditional net metering. As described earlier, net metering is energy and net billing is dollars. The new system introduced in 2016 by the PUCN adds up all the energy the customer sends to the grid, and it applies the export tariff rate to that energy. It adds up all the energy the customer takes off of the grid and applies the regular retail rate to that energy. The customer is billed on the difference in the dollar amounts between those two rates rather than have the meter spin backwards. Our amendment works within this framework.

Section 4 of the proposed amendment reinstates traditional retail net metering for an interim period, pending adoption by the PUCN of the new utility net billing tariff pursuant to the amendment. Section 4 also requires utilities to treat rooftop solar customers like other residential customers, and it ensures that solar customers pay a minimum bill like other residential customers.

Section 5 is the meat of the amendment. It establishes a new section in NRS Chapter 704, NRS 704.766, which defines the net billing tariff. It sets out factors for the PUCN to consider when they are establishing the monetary value of rooftop solar energy and when they are reviewing and approving the new export tariff. It requires the PUCN to evaluate specific benefits to the grid, as well as to societal benefits to the environment, the economy, and the labor force. It also sets the minimum floor value for these factors, which approximates existing retail rates. It requires the PUCN to consider these benefits, not only for the purposes of the new net billing tariff, but also for purposes of determining whether or not rooftop solar unreasonably shifts costs to nonsolar customers. Finally, it grandfathers existing customers into retail rate net metering or retail billing for the life of the rooftop solar system or for 20 years, whichever is longer, unless it would save the money to use the new export tariff.

The categories of the benefits that section 5 directs the PUCN to consider are standard with emerging values of solar literature and other solar cost benefit studies. For example, the categories that the amendment asks the PUCN to consider are consistent with a standard approach that was recommended by the Interstate Renewable Energy Council, Inc. in their

A Regulator's Guidebook: Calculating the Benefits and Costs of Distributed Solar Generation, published in 2013, and they are consistent with a similar report by the Rocky Mountain Institute from 2013 that sought to promote a standardized approach to such studies. We have now seen studies like this done in a number of states, and there is sort of a consensus around what factors to value.

The minimum floor values in the proposed amendment are also consistent with studies in both Nevada and elsewhere that conclude the benefits of clean, locally distributed generation tend to equal or exceed the costs. For example, in 2014, the PUCN study by Energy and Environmental Economics (E3) concluded that for systems installed in 2014 and 2015, the value of the rooftop solar actually exceeded retail prices, so it provided benefits to nonparticipating customers. In 2016, nonparticipants were essentially neutral and would not experience either a benefit or a cost. The key conclusion of the 2014 study is whether a net energy metering system or a net cost or benefit is sensitive to some key input assumptions, but in either case, it should be relatively small. In 2016, E3 updated their study and actually concluded that net energy metering would have some costs to nonparticipating customers who exceeded benefits by about $36 million a year. We do have some methodological and substantive questions about that update, but I note that the $36 million cost is against about $1.3 billion in revenues for residential customers alone, and that excludes environmental and societal benefits.

Using essentially the same data and the same methodology, the Natural Resources Defense Council and SolarCity put out a study in 2016 that concluded the benefits of rooftop solar exceed the cost by about 1.5 cents to almost 3.5 cents per kilowatt hour, depending on whether the environmental and societal benefits were included. That is, solar customers save other customers money. That was the conclusion of that study. Other studies have come out the same. The Brookings Institution issued a report in May 2016 which indicated the accumulating national literature on the cost and benefits of net metering increasingly concludes, regardless of whom it is performed by, that the economic benefits of net metering actually outweigh the cost and impose no significant cost increase for nonsolar customers.

Similarly, Environment America puts out an annual report. The last report in 2016 showed that 12 analyses out of 16 found that the value of solar energy was worth more than the retail rate. Finally, the Lawrence Berkeley National Laboratory put out a study in January 2017 that concluded even if rooftop solar was producing 10 percent of the total energy in a state, the total impact on retail rates was likely to be plus or minus 5 percent. That is at 10 percent penetration. In Nevada, we are below 1 percent in terms of production of total energy by rooftop solar.

These amendments would be easily and quickly implementable, and they would allow Nevadans to get boots back on the roof while we have discussions about a long-term energy future. We look forward to working with all of you and other stakeholders as this process moves forward. We appreciate your attention and support.

Jessica Scott, Regional Manager, Interior West, Vote Solar:
Vote Solar is a nonprofit organization with the mission of bringing solar energy into the mainstream. We are not a solar company or a trade association. The solar industry and the environmental community are united in their support for A.B. 270 as a mechanism to restore Nevada's solar market. This bill gets solar back on roofs and puts Nevadans back to work in a workforce that is expected to employ over 350,000 Americans by 2021.

Assembly Bill 270 makes changes to energy law as it pertains to net metering, undoing the legislation from last session under S.B. 374 of the 78th Session that opened the door to the December 2015 PUCN decision that effectively ended the ability for Nevadans to install rooftop solar. Creating a path forward for solar energy in Nevada will clear the way for Nevada families and businesses to choose solar energy and to support local economic development. Restoring Nevada's net metering program will clear the way for Nevada families and businesses to choose solar energy and support clean energy jobs. Local investments in solar and other clean, homegrown energy resources improve energy security and reduce water use, making Nevada and our country safer and more resilient.

All across the United States, solar job growth is far outpacing the general economy. According to The Solar Foundation's National Solar Jobs Census, the solar workforce grew at a rate 12 times faster than the overall economy. Since 2010, the United States' solar workforce has increased by 123 percent. Now is the time to revitalize Nevada's rooftop solar market by allowing Nevadans to choose energy sources that will make the state a solar leader once again.

Nevada's families and businesses have demanded policies that restore the rooftop solar market and give them access to job-creating clean power sources. Assembly Bill 270 answers that call. Vote Solar, along with the solar industry and the environmental community, supports A.B. 270 as a pathway to reposition Nevada once again as a clean energy leader. We look forward to working with you on this bill, and we are happy to answer any questions.

Chair Brooks:
Are there any questions from the Subcommittee to the bill sponsor or the two presenters?

Assemblywoman Jauregui:
Do we have a timeline as to how long it would take for the filing and the approval of the new renewable energy net billing tariff?

Assemblyman Watkins:
As I understand it, there will be two different rate decisions; one for northern Nevada and one for southern Nevada. Northern Nevada is due to have its rates assessed later this year, and southern Nevada next year. I know it is a misdemeanor to misrepresent, so do not quote me on that.

Sean Gallagher:
I think the idea in implementing the new tariffs could be a straightforward process, so we did not put a date in the amendment, and that gives an incentive to the utility and the PUCN to get those done quickly.

Assemblywoman Jauregui:
What is the soonest customers could start benefiting from the net billing?

Sean Gallagher:
Customers would benefit immediately from the reinstatement of net metering, and we would move to the net billing once the utilities file their new tariffs pursuant to the legislation and the approval of the PUCN. We think that could happen relatively quickly, but I do not want to guess at a date.

Assemblyman Paul Anderson:
I would like to thank Assemblyman Watkins for bringing the bill and the discussion. I also appreciate the characterization of what we did in 2015. It was certainly the goal to get out of the cap and net metering atmosphere and get it into the hands of those who we felt were professionals who could understand the energy market better than we could as citizen legislators to make some quality decisions. As we talk about this, I still have a couple of questions about what our role is when we talk about setting thresholds and limits. I guess what we are really trying to define is the delta between the cost of having solar energy put back into the electric grid and the cost of utilizing electricity under the grid, whether it is being used as produced by the provider or as produced by a solar customer by whatever means it is being produced.

If we look at NRS Chapter 704B, there is a cost associated with customers not utilizing what is anticipated. For example, when a utility does a rate calculation, they assume a certain utilization rate of their product and come up with a rate that all consumers would pay based on that utilization. I would assume it would be very difficult to forecast that without a cap or some sort of measure of the cost of production transport to that consumer. Hopefully, that makes sense. The forecasting of that got very difficult from this desk, which is why in 2015 we thought it would be better for a more savvy group to make those decisions.

You mentioned the establishment of a floor value. What would be taken into account when that floor is established? It is arbitrary in some ways. We would want to make sure that those who made an investment in residential solar are getting a return on that investment, as well as those who provided the installation and the financing of those products. Otherwise that industry does not flourish and grow or create the jobs that were mentioned.

What do we take into account when we talk about a floor? Is it some of the mandates that we put on the producer that might be 20 years old? Perhaps 20 years ago we wanted the utilities to buy a power purchase agreement that was geothermal or solar, or whatever the mandate might have been, which is much more expensive in today's dollars. Solar purchased ten years ago versus today's prices is substantially different. That is my first question.

My next question is how do we, as citizen legislators, look at the studies? You brought up three studies that all came to different conclusions and the one that cost more, you had questions about the methodology. Oftentimes, these studies can start on the wrong side of the equal sign and work its way back to what is trying to be accomplished. That concerns me because I do not have enough information to decipher that. I would certainly rely upon those in the industry on both sides of the argument to give me some good feedback to better understand. Any information you can give me to help to decipher what those studies mean, the methodology that makes sense from both angles, would be helpful. I would expect you to be able to argue the other end as well, whether you are a proponent of the net billing or net metering.

I am making a choice here on a societal benefit to the environment, which seems very subjective to me. I do not know how you objectively have a set metric of what a societal benefit to the community or the environment is. If I were a residential solar consumer, there could be all kinds of benefits. If I am the ratepayer and those costs could affect my rate payment in the middle of the summer heat, I could probably argue differently about what the benefit would be to me. Those are my three questions. I apologize for the length, and if you cannot answer them now, I would be happy to have a further discussion.

Assemblyman Watkins:
Thank you for the comments and the questions. I rose to the opportunity to discuss this on the record before the public because I have just learned some of this information. If the public has a better understanding of how our energy system works through an open discussion on the record, then I think we are moving in the right direction. I want to start off by prefacing everything I am about to say in response to your three questions by saying I thought, when I got involved in this issue, I was going to find an exact, verifiable, data-driven answer to this problem. That is not practical. It is not practical because there is a fallacy in our system and that is to believe the amount of money customers are being charged, either a fixed rate or energy consumption, is an actual reflection of what that cost is to you. It is not. It is an actual reflection of the average cost for any user on the system. At any given time, 50 percent of the people on the grid are subsidizing the other 50 percent. The person who lives closest to the generation point is subsidizing the person at the end of the line. It does not cost the same to provide energy to those two users.

What is also impractical is to have three million different rate classes at three million different times. We cannot do that. At some point along the way, we have to come up with an idea of what it generally costs the average consumer to be connected to the grid, and we have to spread that across all the users.

One of the things I want to address that was not part of your question but was in your comments is that if you look at section 4, subsection 2 of the amendment, there are some fees and charges that are not allowed to be credited off in either a net metering or a net billing system. These are the basic service charges, taxes, and all the fees and charges that do not pertain to actual consumption and that all customers are charged. This is meant to reflect the fixed cost associated with simply being connected to the grid.

As a launching point, that helps to go into your three questions. To your first question, the floor has a number of different considerations, and the 9 cents is arbitrary. All of our rates are arbitrary. However, what is it intended to reflect? The 9 cents is intended to reflect just about what the retail rate is right now. If I am being honest here, do I think 9 cents is going to be the end game when we get this passed? Probably not. This is the easiest point to negotiate if we are going to find some sort of consensus. However, I think it is a fair starting point because, depending on whether the user is in the north or the south, the retail rate, or the flat rate, is somewhere between 8.5 cents and 10 cents.

How do we then go about evaluating the societal benefits? Societal benefits are benefits to the environment for using solar. Again, it is somewhat arbitrary, but I believe we have something we can look to. That is community solar. What are people willing to pay above and beyond what the retail rate is to have the comfort that their energy is 100 percent renewable? I submit to you that it is somewhere around 2 cents above retail rate. Any public utility out there right now could go into the community and tell the users if they subscribe, they will pay 2 cents over retail, but all of the energy will be 100 percent renewable. There would be enough subscribers to build a solar array. That is not guessing; that is actually happening in this country.

Finally, when we look at the different studies that show the benefits of solar in one direction or the other and how we use that in this discussion, I think there are a couple of different things we can do with it. One, we can dig in our heels and choose to believe one side and go with the advocacy studies of one side or the other. Two, we can all acknowledge as we sit here today that there are fallacies in the system and we must accept those fallacies in the system for ease of the consumer, for ease of the utility, and for ease of the industry. We must decide where we want to go. If we want to increase our renewable portfolio standard, if we want to decrease air pollution, if we want to preserve our public lands, the air, the ground, and the water we are providing to our children and grandchildren, and if we have a basis to believe this net metering system will help achieve those goals, and we have used it in the past to that benefit, then I think there is no harm in moving forward under that premise knowing we need to keep track of it and study it all along. I know that was a long-winded answer to your three questions, but someone here may want to add to it.

Jessica Scott:
I would like to add to one point. To Assemblyman Paul Anderson's question regarding the societal benefits, some of the categories that could be included would be avoided criteria pollutants, avoided carbon dioxide emissions, water used or consumed, and direct and indirect economic benefits to the state, including job creation. There are some factors that we can attach a value to within that category.

Sean Gallagher:
To briefly elaborate on the other piece regarding the avoided energy benefits, the list of benefits that the PUCN would have to calculate does account for the kinds of things you mentioned. If the utility built a power plant 20 years ago or signed a power purchase agreement 10 years ago, what we are asking the PUCN to value here is the avoided energy cost, or the avoided capacity cost. If they cannot avoid delivering that power, then that does not go into the equation. However, as customers begin to generate their own power, the utility does save some money by not buying as much power or capacity. The utility may have to build less new transmission and distribution capacity. There are some avoided costs for the utility, and that is primarily how the benefit side is built up.

Assemblywoman Carlton:
For clarification on the document in NELIS (Exhibit D), who did it come from?

Chair Brooks:
That is a breakdown of the amendment submitted by Solar Energy Industries Association.

Assemblywoman Carlton:
Thank you. I will get the contact information later in case I have any questions. Thank you, Assemblyman Watkins, for tackling this issue. It is not an easy issue. I have been dealing with it since 1999. I cut my teeth on solar and deregulation all in the same year while we tried to privatize workers' compensation. That was an interesting year for Commerce and Labor.

To address some of the issues, I understand where you are trying to go. However, the Chair knows where I stand on a number of these issues. Solar is not an inexpensive proposition, and not everyone can afford to put rooftop solar on their homes. It has become more affordable over time, but it is still at a point where for even someone like my husband and me, the long-term return on investment would not be worth it for us. However, when I look at some of the things proposed, I am not sure how this is going to affect the seniors who live in the mobile home park in the middle of my district. Putting solar on their homes is just not going to work. People just do not put solar on a mobile home, and they cannot afford it. For years we had a cap, there were discussions on rates, and we wanted to make sure we protected both sides while making sure the industry had some time to grow. The concern I have with solar in my district right now is I have folks who cannot hook up to the grid because they have bad systems and the contracts they had were not good. They are a bit stuck, and we are working through that right now. The Chair knows my goal in this issue is the consumer protection side. I look forward to that bill coming out.

I understand the cost avoidance, but when I knock on a door in that mobile home park and try to explain to them that they are paying for something elsewhere because someone is not polluting the air in Summerlin, Henderson, or Lake Las Vegas, how do I make that case to them? Honestly, when we implemented the universal energy charge, which was 5 cents on

the bill, my phone rang off the hook. We are going to need a good explanation of why their bill is doing one thing and someone else's bill is doing another, and they are not getting the benefit. Ultimately, whatever is done here, I have to explain to my constituents. I need your help in understanding what this will really do for the people in my district.

Assemblyman Watkins:
I appreciate that statement and the question. I know this is not the easiest thing to say at a constituent's door—I also knocked on many doors—but the reality is the person you described is subsidizing the person at the end of the line right now. The basic service charge being a flat charge does not cost the same for the person living right next to the generation as it does to those at the end of the suburbs. The fact that they all pay the same basic service charge now means the person who lives closer to the generation is subsidizing the people further away.

Unfortunately, there are many people who cannot afford rooftop solar. Those are probably the same people who cannot afford some of the more energy-efficient appliances, so they are getting hit again. I think that is also something that needs to be addressed. As a bigger part of this whole discussion, how do we get people who cannot afford to be on the cutting edge of energy efficiency to not be subsidizing everyone else?

Assemblywoman Carlton:
I am going to go back to your opening statement because I do not think I am convinced. Energy is transmitted in such a way that it ebbs and flows. It is not necessarily stored. I want to make sure I understand. Are you saying that my basic consumer access fee that is on my electric bill is not fair to everyone? I am trying to understand when you talk about the person closest to the generation. There is transmission and distribution in all the districts, so I understand what that is. However, there is a basic line access fee that everyone pays. Are you saying that is not fair because the person closer should not have to pay the difference, or the person farther away should have more? For some reason I am not understanding that because I do not understand where that is coming from.

Assemblyman Watkins:
The reality is the basic service charge is equal for everyone. What I pay is what you pay.

Assemblywoman Carlton:
That is access to the grid. Is that correct?

Assemblyman Watkins:
Yes. However, supplying the grid to your house and supplying the grid to my house is not the same. It does not cost the same. I am not saying it is unfair. In fact, my previous answer was to say that it is the fairest thing we can do. We cannot have three million different basic service charges. That would be impractical. The cost of supplying that line to each house is different. The cost of supplying that energy to each house is different. If we are being honest about the discussion, the people who live closest to the generation are subsidizing the people who live farthest away. That is the truth.

Assemblywoman Carlton:
I am going to let this one go because I just do not get this argument. There is a cost to generating the energy and delivering the energy. I think we are taking this down to a gnat's eyelash, which I do not really think is the discussion point on generating electricity. We will take this offline so I can understand it better. I think I have a problem with this issue.

Chair Brooks:
I appreciate your making the point that the cost to serve every consumer of energy in the state is different, and that we make policy decisions to aggregate some of those costs. This is another policy decision we are looking at to aggregate another group of costs.

Assemblyman Paul Anderson:
I get that there is an average cost for everyone. I think certainly if the utility has to put up more transmission lines to get to one person versus another, there is an added cost. However, those costs are fixed into everyone's bill. You are making a subsidy argument that everyone is subsidized at some level, and we all pay some sort of average cost to get energy to us. It is also what you are asking for on the solar side to be subsidized at some level, similar to how everyone else is subsidized at some level. In many respects, that is what Assemblywoman Carlton was saying. I apologize for putting words in her mouth if this is not what she is saying, but essentially her constituents are subsidizing users who do not have solar. There is a subsidized argument that goes across all the rate cases. If I buy raw electricity as a commercial entity, I am getting a much lower per kilowatt hour cost because I am buying it raw. I have to buy my own transformers and break it down to usable energy and cleaner energy to use it.

Solar certainly has to have some subsidy built into it as well because there are times, until we have some storage available on everyone's houses, when we have to have backup energy with surging timeframes and markets. I think that is the average cost of providing energy. That goes back to my initial question. How is that predicted? In a growing solar market, as a sole provider of energy in specific markets, how am I coming to the PUCN to make a rate case on the products where I have depreciating value because they are generated with natural gas or other means and older solar that is more expensive, on top of adding solar energy at a specific price that might be arbitrary at this point because it is set by statute or some agreement versus the PUCN, a study, or business folks all coming together? I am still trying to better understand the subsidy argument. I want all the jobs back, I want to see people getting back to work and coming back to the state. I think it was a vibrant new technology. I love disruptive technologies as part of my nature and my business. I also want to do it in a way that is sustainable.

Mandating and legislating things tend to be short-term ways of getting an industry up and running and allowing it to incubate itself and run on its own. There is still that subsidy argument that we are going to set into statute with the 9 cents or whatever we might get to without having what that means behind it, whether the true cost of transmitting that power can then be transferred back and forth.

Sean Gallagher:
The context for the last two questions is that, in the amendment, it does direct the PUCN not to approve a net billing tariff that unreasonably shifts costs from customer generators to other customers of the utility. What are unreasonably shifting costs? These are not a cost shift at all, as we described earlier. If you take into account the right factors and they are calculated correctly, and studies around the country have found, both in Nevada and elsewhere, that if the math is done correctly, you will find the benefits that customer generators provide to the system tend to equal or exceed the cost.

Assemblyman Paul Anderson:
There is a subjective value there. We thought we were doing that with the last decision in 2015. We thought we were adding some hard numbers, looking at the studies, and getting that done. However, it depended on who was on that board and on the committee at the time, and possibly even political winds that may have shifted from a decade or more. There were a lot of things that walked into that valuation. Are we entirely controlling in that list of items?

Sean Gallagher:
The best way to describe this is the Legislature gave the PUCN some direction in 2015. This time you are giving them a tighter box with more clear direction as to what to consider and how to consider it. It is still a framework, and you are not telling them exactly what to do. You are giving them a framework that is consistent with the literature across the country. Frankly, I think the PUCN will welcome that direction.

Assemblywoman Bustamante Adams:
My question has to do with page 7 of the amendment. I remember in our discussions from last year about the consumer advocate, and there were some questions around their ability to act on behalf of the consumer. Is that in the amendment on page 7, or is that being taken care of in another bill regarding consumer protection?

Assemblyman Watkins:
I am not sure which part on page 7 you are looking at, but I believe Assembly Bill 405 is going to be the solar bill of rights, which is in front of this Subcommittee on Wednesday.

Assemblywoman Bustamante Adams:
I do not remember all of the details from the conversation last session, but I just want to make sure we are going to cover consumer protections at some point.

Chair Brooks:
What you are looking at in section 5 on pages 6 and 7 (Exhibit C) are the different attributes that will be looked at by the PUCN in determining the value of that solar based upon this proposed piece of legislation. In that process, the consumer advocate does have a role through the PUCN process. These are the components they would be looking at.

If the Subcommittee has no further questions of the presenters, I want to bring up another presenter. In our conversations through this process, we have always looked at a short-term solution that would restore some faith in the industry by our constituents. A mid-term solution, which is what we have here, sets some rates and parameters. A longer-term conversation would be around an integrated approach to integrating distributed generation into the overall resource planning process. I want to see if NV Energy could come up and talk about that. We always talk about this bridge to something, so if NV Energy could go into a little bit of detail on what that something looks like in their estimation. That is something I think we will be working on either in this bill or other bills moving forward. We have discussed amongst the stakeholders in this bill transitioning toward a future and a more distributive resource planning process.

Judy Stokey, Vice President, Government & Community Strategy, NV Energy:
I appreciate the fact that NV Energy has been included in these conversations, and we have been working with the sponsors on this bill. Before I get into our proposal, I would like to put everything into context here of what you have done and have helped NV Energy and the state accomplish.

Carbon emissions at NV Energy are down nearly 40 percent from 2005 levels. Just this month, as Chair Brooks mentioned, Reid Gardner Generating Station in southern Nevada burned its last piece of coal. In 2019, Nevada Power Company will not have any coal generation in its fleet. NV Energy has contracted for over 1,000 megawatts of utility-scale solar that are either under construction or are already up and running. The energy being purchased from these facilities is some of the best solar energy rates in the country. NV Energy has been able to achieve all these environmental and renewable goals while keeping the rates at the same level they were in 2007.

A commitment to the environment is one of NV Energy's core principles, and the development of renewable energy is a key aspect of that core principle. What we have today is a proposal that I do not have in writing to hand out, but I have been talking to Chair Brooks about it. We are looking for a long-term solution. I think the state is going to take the lead in coming up with a long-term solution for all.

Our plan is in three steps. What we are proposing is a short-term transition plan, going to a mid-term plan, and then a long-term, distributed resource planning process. The first phase, or short-term solution, is within 30 days of a bill passing this session, we would file a tariff with the PUCN. In that tariff would be rates that we would be charging and what we would be paying for excess energy that comes to the grid. That would be for a 20-year period, and we would purchase that excess energy. That is something this body, in negotiations, would talk about—what is really the right number to use. This directive would go to the PUCN and would not go through the normal hearing process. It would be something that we could put into effect immediately.

Step two, at the same time NV Energy would be working on the other piece, we would also be implementing a competitive bidding process for private generation, or what others call rooftop solar. By the end of this year, NV Energy, through a stakeholder process, will develop and file with the PUCN a tariff that allows NV Energy to conduct competitive requests for proposal for private generation and purchase the excess energy from those systems. One month later, in January 2018, NV Energy will have its first request for proposals on the street. Bids will be reviewed through the independent evaluator, and we would offer that perhaps the Office of Energy of the Office of the Governor would be the office that could implement that. The bidders would be required to commit to certain percentages of energy provided to the utility from systems installed on low-income customers' homes or areas. That would be part of the process. We would require bidders to commit to paying a prevailing wage so the workers and the contractors are getting back to work and being paid appropriately. The installations by the winning bid or bidders must occur within one year of winning the bid. However, NV Energy will commit to purchase all excess energy from the systems installed for a 20-year period.

The third step of the proposal is the long-term plan, and this is something I think this state has needed for a while. I believe this is a very good plan for everyone to get the right price. The third step is more formal distribution resource planning, similar to the other planning we do at the company for larger scale generation. We would enter into a bidding process. Through that process, NV Energy and the stakeholders would conduct a rulemaking. This is longer term and would go through the PUCN process, all of the stakeholders would be involved, and we would have those discussions at the PUCN on the bidding process. Distributed energy resources are not just rooftop solar. It could include storage or any other new technology that comes about. We want to do something that will grow over time so we are not back here every session dealing with the same issue.

I should mention that the bill allows customers to choose to install private generation any time and at any location outside of this bidding process. The customers can use the system to offset their use, as they normally would, any time of the day. NV Energy would purchase that energy at market-based prices. On this long-term plan, we would go through the resource distribution planning process, designate areas where we know it would benefit the system that we go out for bid to enter into some kind of contract with the solar industry to build in those areas. However, at any point in time, if customers want to build in a neighborhood where we have not identified a need, they can always do that.

We believe a long-term policy is needed in this state. I think other states would look at Nevada for being a leader and trying to resolve this issue going forward. The long-term policy moves Nevada swiftly to a competitive bidding process for distributed energy resources. We want to move quickly to this market-based process. That would also include the carve-outs for the disadvantaged areas of town.

I could go on and on, but because of the time limit, I would like to say we would put this in writing. We would like the Subcommittee members to look it over and ask any questions they may have. There are still some holes to be filled. We appreciate being a part of the working group and working with Assemblyman Watkins on this issue.

Chair Brooks:
I appreciate your being so available in working with us at all hours of the night and over the weekends. Are there any questions from the members?

Assemblyman Araujo:
Thank you for sharing that update with us. I might have missed it, so I would like to circle back to step two. You mentioned as part of the bidding process, stronger consideration would be given to folks who provide incentives to low-income neighborhoods and also have prevailing wage as a part of their application. I did not hear that in the long-term plan discussion. I would like to make sure that will also be part of the long-term plan.

Judy Stokey:
It is for the long-term plan also.

Chair Brooks:
Seeing no further questions from the members, I will open the hearing for those wishing to testify in support.

Bo Balzar, Division Manager, Bombard Renewable Energy:
I am here in support of the direction of the amendment to A.B. 270. I appreciate the work the stakeholders have put into the amendment, and I applaud the sponsor and the Chair for their efforts. I also understand there will be future amendments, and I offer my experience and expertise to participate. I look forward to participating in helping this bill achieve the goal of restoring the deployment of rooftop solar systems that help contribute to renewable energy jobs in Nevada, the sustainable development to reach Nevada's clean energy goals, and independent voluntary ratepayer investment in Nevada's clean energy future.

As has been discussed, the rooftop solar industry provides a tremendous opportunity to grow an important part of the economy in Nevada and an important part of my business. Currently, my company has nearly 500 employees installing solar, and very few of them are in the rooftop section. This bill has an opportunity to change that. To do this, we need to create a sustainable, predictable market for rooftop solar, and ratepayers need to be able to accurately evaluate the investment of a rooftop solar system.

Alexander McDonough, Vice President, Public Policy, Sunrun, San Francisco, California:
I am here on behalf of Sunrun to express our support for A.B. 270. Sunrun is the largest dedicated residential solar company in the United States. In Nevada, we have invested over $73 million and have over 3,000 customers. I want to thank Chair Brooks and Assemblyman Watkins for their leadership in bringing renewable energy jobs to Nevada, and we appreciate the Subcommittee's consideration of legislation to restore Nevada's residential solar market.

Assembly Bill 270 establishes a pathway to quickly provide residential solar in Nevada and give Nevadans the freedom to choose solar for their homes. Hundreds of Nevadans who worked for Sunrun lost their jobs after the PUCN decision in December 2015. Las Vegas was our highest-volume warehouse among nearly 40 warehouses nationwide. Many of our employees were forced to find work in other industries or move their families out of Nevada to keep their well-paying jobs working for Sunrun.

Assembly Bill 270 would bring solar jobs back to Nevada by creating a fair approach to compensating families for the clean energy they generate and send to the grid. Passing A.B. 270 would restore Nevada's leadership on renewables by recognizing the full benefits of solar to everyone connected to the grid; by compensating customers fairly; and by sending a message to the renewable energy industry that Nevada is open for business. Sunrun supports the interim and long-term rates established in A.B. 270 because they create certainty for our customers as well as for our business.

After the PUCN's 2015 decision, it is critical that Nevadans who choose solar have confidence that the policy will not drastically change again. Assembly Bill 270 identifies a list of grid benefits and social benefits that must be quantified and incorporated in the PUCN's evaluation of an expert rate. Identifying these known benefits provides clear guidance to the PUCN that it should fully account for solar's value rather than picking and choosing which benefits are valuable, which is what happened in the past.

A long-term solution that fairly compensates solar owners cannot ignore benefits that are being shared with other grid users. Solar companies are not asking for a subsidy. We are asking for fair compensation and certainty for our customers. Sunrun has collaborated with a range of stakeholders, including legislators, other solar installers, and advocacy organizations on this legislation. We are committed to working with legislators and other stakeholders to pass this legislation, which will bring solar jobs back to Nevada and restore homeowners' ability to choose clean energy.

Thank you for the opportunity to support this legislation. We appreciate your effort to bring residential solar back to Nevada.

Chair Brooks:
I would like to remind the audience that because we have so many people wanting to testify, please keep your remarks to under three minutes.

Assemblyman Paul Anderson:
In your comments, you talked about creating an environment confident it will not change again. I am wondering how we effect that. As Assemblyman Watkins went through the history of net metering in the solar industry, every two years it seemed to change, whether we were increasing the cap or changing policy around that. What ideas do you have to keep this consistent so it will not change again?

Alexander McDonough:
We think the amendment to A.B. 270 would achieve consistency by creating a framework for the PUCN to consider when laying out the criteria. Policy is going to change. The PUCN has to reevaluate rates on a regular basis, and we recognize that the policy cannot be static. However, we want to fairly compensate solar homeowners for the value they provide to the grid, as well as the social and environmental benefits and that the framework is there. The numbers might change, but the framework will be there under this amendment.

Chair Brooks:
I imagine there are quite a few industries that would wonder how the decisions this body makes in this building would not affect them every year when they come back as well.

Assemblywoman Carlton:
Has Sunrun always been Sunrun, or is it a derivative of another company?

Alexander McDonough:
The company has always been Sunrun.

Assemblywoman Carlton:
You said something about subsidies earlier. For a number of years, there were subsidies for solar to be put on roofs. Are you not talking about having those subsidies again?

Alexander McDonough:
That is correct. The industry has received subsidies in the past. We have received incentives. We do receive a federal incentive. However, this legislation does not create a subsidy. It creates a framework for measuring the compensation for renewable energy that is exported to the grid.

Assemblywoman Carlton:
Will the federal subsidy still exist?

Alexander McDonough:
The federal subsidy is being phased out. It will be fully phased out in five years.

Assemblywoman Carlton:
It will still be in effect for another five years. I want to make sure the record is accurate that there is still a federal subsidy for solar.

Alexander McDonough:
There is a federal tax incentive, which is the investment tax credit.

Assemblywoman Carlton:
For a number of years we had a lot of discussion about caps and subsidies. As soon as they start to dwindle, that is when people get a little hinky. I just want to make sure we realize that five years from now—I will probably not be here but some of you will be—that may be an issue you run into.

Chair Brooks:
To clarify, is that a federal investment tax credit that exists, similar to the one for most other energy industries?

Alexander McDonough:
That is a federal investment tax credit. It is a 30 percent tax credit that will phase down over time. It is a tax incentive. It is not a cash subsidy.

Daniel Witt, Manager, Business Development and Policy, Tesla, Inc.:
I will make my comments very brief, but I do want to notify you that we are introducing an amendment (Exhibit E). To throw our support toward the principles of this legislation, we adhere to many of the comments that have been made. We are looking forward to continuing the discussion on how to provide a sustainable pathway to allow Nevadans to invest in long-term solutions for rooftop solar, battery storage, and other innovative technologies. In that vein, we are very pleased to offer an amendment (Exhibit E), which I believe has been provided to the Subcommittee.

Chair Brooks:
That amendment is on NELIS. I want to make sure the amendment is based on the mock-up amendment (Exhibit C). Is that correct?

Daniel Witt:
That is correct. I will provide a brief summary on the amendment (Exhibit E). During this discussion, several members have already commented on it. As part of the long-term solution that is developed, we are seeking to incorporate an optional tariff. This legislation directs the utilities from both densely populated as well as less densely populated areas of the state to submit a tariff that will be ratified by the PUCN no later than March 15, 2018, which would provide an optional time-varying rate tariff. In theory, that would essentially recognize the benefits of battery storage when placed either in combination with rooftop solar or as a separate device unto itself. That is the long and short of the amendment, and I would be pleased to answer any questions.

Assemblywoman Carlton:
Is this strictly toward battery use?

Daniel Witt:
This amendment and this tariff are meant to look at storage technology. We are particularly interested in battery storage technology. However, we do not necessarily surmise that is the only technology that could be taken into account. The term is "energy storage system."

Assemblywoman Carlton:
I just want to understand. I see in section 3, subsection 3, paragraph (g) of the amendment (Exhibit E) it says, "'Time-variant' means a rate or schedule that includes components which vary depending on time of day during which the electricity is used or fed back to the electric utility." What I know it as, from the late 1990s and early 2000s, is "time of use."

Daniel Witt:
Yes, I believe this terminology is more appropriate when describing when the energy is essentially fed back to the grid. Essentially, it is the same basic principle. The energy a customer is providing back to the grid, depending on the time of day, may have more value based on the overall need of the grid at that time.

Assemblywoman Carlton:
On the other side of the equation, I do not pay more for my electricity at noon than I do at midnight. Would this not be a little one-sided?

Daniel Witt:
Ultimately, we are directing this to the PUCN for the particulars to be worked out. In order for it not to be one-sided, there would have to be some kind of distinction between the cost of energy at various times of the day.

Assemblywoman Carlton:
I have real concerns about time of use. It hurts people who work swing shift or graveyard and seniors. I already have seniors who turn off their air conditioners and spend the day at the mall so they do not have to pay those high rates during the day. If we start doing time of use, that could be a problem. I want to be very careful that if we do something for batteries, we do not impact those working people and those seniors who do not have a choice but to pay the high rate during the day because that is just how they live.

Chair Brooks:
I absolutely understand. I believe that is a time of delivery variant-rate tariff that would value that energy. You are absolutely right. Your constituents do not pay the true cost of energy at a different time than they should be. That could negatively impact them. That is why it is being subsidized or levelized by the other ratepayers in the system. I think this is just time of delivery, not time of use that they are proposing that gives the true value of the time of delivery of the energy from the energy storage system.

Assemblywoman Carlton:
I understand that. As I said earlier, if we take this down to a gnat's eyelash, people will not be able to flip their lights on because they will end up paying a lot more than other people would because they happen to be home at that moment and the other people are at work. I just want to be careful how far down we take equivalency because it can get so equal in delivery that it can price people out of the market.

Daniel Witt:
I will sum up by saying we completely respect and understand those concerns. Energy storage technology is meant to address the very scenarios that you laid out where energy is very expensive. If it is stored at a much cheaper time, it can offset those higher costs. We view this technology as being part of a comprehensive solution. Obviously, we are very interested in seeing solar and other renewable generation take off again here in the state. We believe these advanced technologies, like storage and energy storage solutions, are a part of the long-term solution.

Chair Brooks:
We will move down to Las Vegas for those wishing to testify in support.

Louise Helton, Private Citizen, Las Vegas, Nevada:
I am one of the proud owners of 1 Sun Solar Electric. We are a small solar business that was founded in Las Vegas in 2008. In 2008, as all of you know, it was a tough time to start any business, but we passionately believed that rooftop solar would be a game changer for our economic development. Diversifying our economy is something we have all agreed needs to be done and talked about during the entire 35 years I have lived here. We have worked hard, and we kept our eye on the future of solar as we envisioned southern Nevada as a place where we would be able to train and maintain a great crew of people for our company as we sought to build a strong and solid solar industry in our community.

Having started the business in 2008, we are proud to have made it through some really tough times. The recession held us all in its grip for many years. On top of the local market incentive that we did have, it was based on an ungainly and almost impossible lottery rebate system. Fortunately, equipment prices came down and the economy began to improve in 2014, and the rebate was no longer critical. We made it through the valley of the shadow of those dark times. Our business was turning a corner when we were finally able to enjoy a positive market environment to do business in. Just as that dawn was breaking, the policy on net metering shifted and we found ourselves in an even more difficult position.

Decisions that were made virtually eliminated our industry—the rooftop solar business—and took thousands of jobs with it. The residential rooftop solar market melted down in the beginning of June 2015, and it continues today. In this period of time, I have seen colleagues lose their companies and friends lose their jobs, suppliers close up shop and leave the state all together, distributors who lost money, and good, hard-working Nevadans who lost their solar careers.

At the same time we were killing the rooftop solar industry in Nevada, the folks in Los Angeles were at a pace to bring 150 megawatts of local solar online. That was enough to power more than 32,000 homes. In addition to significantly reducing carbon emissions, clean Los Angeles solar also translated demand for clean energy into local economic growth, which benefited the entire community. The program was said to create 4,500 jobs and generate $500 million in economic activity. That is according to the Los Angeles Business Council.

In the interim, the citizens of this state have definitely tried to have their voices be heard. It was incredible that there were over 100,000 Nevadans who signed petitions to bring back net metering. I have been fortunate to have a diversified business that has allowed me to continue in this industry and continue the fight. We have held out hope that the bad decisions that came before would be fixed in the next legislative session if we could just hold on. We were also encouraged that instead of a rush to create bad policy, the Governor's New Energy Industry Task Force held multiple meetings that were thoughtful and considerate and very transparent. We further encouraged five bills to be passed this session, and A.B. 270 is one of them. The bill you are considering today will allow us to build this industry back. While it is too late for many of my former colleagues, those of us who remain are begging you to allow us to take up where we left off, building a strong Nevada rooftop solar industry and creating thousands of jobs that will benefit all Nevadans.

Jorge Gonzalez, Private Citizen, Las Vegas, Nevada:
I am with the Nevada Solar Owners Association, and I am also a consultant for the consumer NetZero Brokers. Three years ago, I started in the solar industry as a salesperson during the 2015 boom. I was obviously affected like everyone else. I have lived in Las Vegas for 46 years, the majority of my life. I have never seen an industry crash the way the solar industry did and how many people it affected. From one decision to the next, jobs were taken away. We were essentially made a grid-defective state to the point where solar batteries were supposed to come into play. We all know that in the desert batteries do not last. It took a little bit longer. There is actually a 2.0, without mentioning the brand, that never saw the 1.0. It has turned the corner now where we do support the presenter's stance to bring back net metering.

There are things that are pretty odd to me. If power is delivered from the generator to a home that no longer needs it, that home is not using the grid. When power goes up to a transformer, the next person who needs the power uses it. They are not using the grid. In 2016, there was a study that came out where it actually cost more to be in a net metering agreement. That is beyond me. I have tried to understand it. I have even taken the steps to continue my studies in environmental policy.

For solar homeowners, we are just here to say net metering works and it should be in Nevada. There is no negative impact on society, and it is definitely a plus on the environment. All it is going to do is create jobs. Passing the bill with the amendment (Exhibit C) is a big improvement. When they passed Senate Bill 374 of the 78th Session,

that essentially wiped out the utility bill. However, there was a fee assigned to solar homeowners, while the fee dropped from 12 cents to 11 cents for all the users. Who was it really hurting? If everyone was able to get a reduction in their power bill, solar homeowners were able to have the benefit of providing power to the grid. We are not the cause of the problem. Everyone enjoyed a decrease, especially here in the south. The only person who actually had an increase was the actual solar homeowner. Where is the cost? Where is NV Energy being hurt by people having solar on their homes?

I am in complete support of this bill and those who are here. Tesla did a great job of bringing the amendment for solar batteries (Exhibit E). For those areas with renters, or for those who cannot put solar on their roof, the community solar bills that are coming in the future are also going to be important. Solar rights are also important for homeowners who have solar. Nevada has not stepped back commercially at the utility scale. They have continued to build solar, let the homeowners have the same.

Laurie Lee, Private Citizen, Blue Diamond, Nevada:
In the fall of 2013, we began drawing up plans to build a new house. On top of the list of priorities was an energy-efficient home, including but not limited to use of a sustainable energy source or solar energy, a water-saving home, gray water, water-saving appliances, and landscape reclaimed with native plants. Our willingness to spend more on an energy-efficient home was motivated by the environmental science of climate change as well as our desire to plan ahead for our retirement. At every phase in the building process, we were hit with roadblocks or regulations that would not allow environmental science to trump regulations.

Solar energy continued to make sense, and Nevada was moving ahead of many states in continuing the net metering and paying at retail prices. We contracted a solar company to draw up plans and had made a commitment to them by paying for the plans and a down payment for installation. Then the PUCN made a change in the solar rates. The predictability of our future utility bills was in great jeopardy, and we decided to pull out of the contract. Personally, we lost over $1,000, and the solar company, I am sure, lost even more. We still have the option of putting solar in, as the house is prewired, but as the batteries become more accessible, we will not consider purchasing a battery for storage, leaving one less customer to pay for the infrastructure of the existing utilities.

We understand there are huge consequences to the utility companies, but also believe that continuing to move forward and not backward is a must for the environment. We have come a long way, and challenges have been met in the solar area. We are asking that the politicians listen to all the experts, face the challenge, and come up with a solution that can move the use of sustainable energy in Nevada one step forward.

Travis Miller, Director, Great Basin Solar Coalition:
The Great Basin Solar Coalition has members from a majority of the solar contractors in northern Nevada. Many have closed their businesses due to the existing rate structures. We believe A.B. 270 provides the structure that can allow for a thriving solar market that can benefit all Nevadans.

It is important to note that out of our roughly 1,000 members, approximately 95 percent of them are northern Nevada ratepayers who do not have distributed solar. These members believe in the rights of all Nevadans to generate their own clean energy and receive fair compensation. Our members believe that segregating solar consumers into separate rate classes has resulted in discriminatory rates and fees, and returning solar customers to otherwise applicable rate schedules ensures consumers are all treated equally.

Erica Dahl, Director, Public Policy and Government Affairs, Vivint Solar Developer LLC, Lehi, Utah:
Vivint Solar Developer LLC is one of the largest residential solar providers in the United States. We are headquartered in Utah, and we serve 100,000 customers across 14 states. In June 2015, we were excited to enter the Nevada market with plans to serve residential solar customers. We leased office and warehouse space in Las Vegas and hired employees who were in the process of moving to Nevada with their families. Unfortunately, we were surprised and disappointed two weeks later when the net metering cap was reached much earlier than expected.

Unfortunately, we had to immediately cease operations and find openings for our employees in neighboring states. We continue to lease our warehouse space in Nevada, and we are anxiously awaiting an opportunity to bring our operations and good-paying jobs back to Nevada.

We support the amendment before you as an important path forward for solar in Nevada. We thank you for your consideration.

Joshua J. Hicks, representing SunStreet Energy Group, LLC:
SunStreet Energy Group is a group that works in the new-home building space to put solar panels on homes. We are here in support of the bill and the amendment. It really comes down to a consumer choice issue. These are popular features in new homes that homeowners look for. There is always a hope to have as much stability as possible. Stability is sometimes elusive in these things, but particularly when building a home. Having that framework as stable as it can get in a way that is popular with consumers and provides an economic incentive is a very good thing. A bill like this also works well with some of the things we have been seeing in building codes on new homes that particularly incentivize solar panels to help get the energy score of a home to where it needs to be. We are starting to see some things happen in Nevada, like the building code level. I think a bill like this is very helpful with that too, and will really help out the new-home construction side of solar installation.

Mark Dickson, President, Simple Power, Truckee, California:
I am a native Nevadan and the owner of Simple Power, a small local solar installation company. We have been operating a successful solar business in California for the past four years and, just in the last year, began operations in Nevada. This was due in part because of the many local solar businesses that have been forced to cease operations due to the PUCN decision in December 2015. Luckily for us, some northern Nevada residents still had a strong enough desire to have solar installed despite the unfavorable decision. Knowing this, we can only surmise how many more residents would be interested in solar if only the economics played out better for them. Just look at the overwhelming support for Question 3 during the last election. Over 72 percent voted in favor of having a choice in how they obtain their energy.

Ideally, Simple Power would like to move all of our operations to northern Nevada and grow a profitable and sustainable business. We want to do our part in bringing back some of the 2,500 technical, well-paying jobs that were lost following the PUCN decision.

If you listen to NV Energy and their lobbyists, you will hear how rooftop solar would result in lower profits and in turn, increase electrical rates for customers. What they are telling you is false. In fact, it has been proven that rooftop solar will be paid for by the customers wanting to install it. Thus, NV Energy would not need to make the capital expenditures to build new natural gas and solar plants. Rooftop solar will decrease the pressing need for NV Energy to upgrade their aging electrical grid. Through distributed generation, rooftop solar will strengthen their inherently weak, single-source electrical generation system when facing storms, brownouts, and potential terrorist attacks. Rooftop solar will also provide more jobs.

When looking at these elements, among others, it is a win-win situation for everyone involved. We all know NV Energy is a large monopoly owned by a massive company based in Iowa. Only a portion of its money is made from selling electricity. NV Energy makes most of their money and adds to their bottom line when building large capital projects. More capital projects equal more money for the shareholders. Additionally, if it is anything like any other national company, such as Walmart Stores, Inc. or Home Depot, only about 16 percent of their money stays in the local economy. With small, locally owned businesses like Simple Power, nearly all the money spent in Nevada stays in Nevada. We need to keep our hard-earned money in our state and, at the same time, allow our residents the choice of where they get their energy. Please listen to your fellow Nevadans and vote yes on A.B. 270.

Tim Webb, Private Citizen, Las Vegas, Nevada:
I am going to talk very briefly about the effects of the January 1, 2016, net metering changes and how it affected Robco Electric Solar Team. In 2015, our solar sales were just under $11 million, which was mostly residential sales. In 2016, our sales were barely $2 million. That is an 81 percent drop in sales. In 2016, 27 percent of the sales were from customers who were grandfathered in. Without those sales, our sales would have been $1.4 million,

or an 86 percent drop in sales. In 2016, we went from six salesmen down to one salesman. A job force loss of 83 percent. In 2016, we went from five installation crews down to one crew. A job force loss of 80 percent. Year-to-date in 2017 compared with 2016, solar sales are down by 62 percent, or 88 percent compared with 2015.

It is essential to bring back solar revenue in Nevada, bring back solar jobs to Nevada, and it makes complete sense to pass A.B. 270.

Jane Feldman, Private Citizen, Las Vegas, Nevada:
I want to speak in support of A.B. 270. Twenty-three years ago, I retired from the Air Force and I moved to Nevada. I wanted to settle in a place where there was sun. I bought myself a small home, and I started doing a variety of efficiency projects over the years. I was really excited when the solar industry started offering solar panel installation for homeowners. There was a federal tax credit that made the deal look reachable. It was still a hard decision for me to come to. I support myself on my retirement pension from the Air Force.

My house needed a system that, in 2011, cost a little shy of $24,000, which is about a mid-range car, I would guess. Prices on solar panels have been cut in half since 2011. With the return on investment at that time, I figured I needed about eleven and a half years, which is a long time. I was settled here in Nevada and was going to stay here in my home, and I had a long-term commitment to the health of the planet and the people, plants, and animals that live here, so I made the investment. I have celebrated that decision ever since.

This legislation is putting Nevada back on the path to clean energy for every homeowner. Every homeowner will be like me, being able to participate in a clean energy economy, addressing air pollution and mitigating asthma, respiratory diseases, and other public health issues, and even addressing the issues of mitigating, to at least some degree, the changes to our climate. Thank you for your consideration, and thank you for moving us along the clean energy path for Nevada.

Monika Payne, Private Citizen, Las Vegas, Nevada:
My husband and I moved to Las Vegas in June 2015, after retiring and deciding to move closer to our son. The house we bought is an older home, and we immediately found that not only did it require updates for aesthetics, it was also not very energy efficient. It had single-pane windows and required a new roof. Since we felt we needed to move forward with these updates, we also deemed it necessary to check into installing solar panels. We assumed Nevada was taking advantage of all the solar power available, and it would be a no-brainer. What we found was quite a different story. We met with two companies that installed solar panels. We were told about net metering and portfolio energy credits. Our decision was to go ahead and lease our panels and go with net metering. It was emphasized that we had to have our panels installed by a certain date to be able to grandfather in to the present scheme for net metering. If we did not, there would be no way to calculate, prior to installation, what our net metering costs would be. Essentially, we had no way of knowing if it would be cost-effective or actually cost us more if we failed to

grandfather into the present scheme. We were also warned that shortly most of the companies supplying solar panels would either be leaving Nevada or going out of business. This information did not provide ease in making our decision.

In the end, we went ahead with getting solar panels and took our chances that we would indeed grandfather in. Even if the local company that installed the panels went out of business, the company that made the solar panels in California would honor our contract. We watched anxiously as installation was delayed for one reason or another, afraid they would not be installed in time for us to grandfather in. We were fortunate that we did grandfather in.

We currently pay 10.179 cents per kilowatt hour from NV Energy and are credited 9.199 cents for any excess power generated by our solar panels. We received a letter that we were placed in the NMR-G rate class [Net Metering Rider-G] and the net metering rules and rates would remain for the next 20 years. I pulled up a sample rate scheme for the next 12 years if individuals were not grandfathered in. In year one, a homeowner would pay NV Energy 11.067 cents and be credited 9.199 cents. However, by year 12, energy would be purchased at 10.179 cents and the credit would be 2.649 cents. This would make solar power not feasible for most Nevadans.

I believe solar power should be an incentive in Nevada, not a financial punishment. We have watched SolarCity, and even the installers of our own panels, go out of business. Many jobs were lost. This should not happen in the sunny state of Nevada. Solar is the right option. We were so lucky that we were able to grandfather in. So many others have not been given that option. This bill will allow many more to install solar panels and bring back jobs to Nevada. Thank you for the opportunity to present my testimony in favor of A.B. 270.

Robert Bastien, Private Citizen, Carson City, Nevada:
I applaud the sponsors and cosponsors of A.B. 270 for your efforts and direction to establish net metering for rooftop solar generation in Nevada. As a rooftop solar generator since 2010, I support A.B. 270.

This bill will allow Nevada to become a solar industry leader in this country, as it was before 2016. My hope is that the solar companies that were basically forced out of business over a year ago will return, secure in the knowledge that rooftop solar customers will become more of the norm, and the demands for rooftop solar will once again rise to a viable business opportunity, not only in the service sector, but also in the installation and manufacturing. Hopefully, Nevada will regain those employment opportunities that were lost.

Of note are the effects of rooftop solar. I have an average-sized, three-bedroom home with a solar system that provides approximately 80 percent of my electrical needs. It is a rather small, 3.76-kilowatt direct current system providing a little over 3 kilowatts alternating current. In the six and a half years since installation, my rooftop solar system has generated 23.5 megawatt hours of electricity. In environmental impacts, according to my research, this system eliminated the need to consume either 12.25 tons of coal, 14.46 barrels of oil, or 80,354 cubic feet of natural gas. In addition, obviously the pollutants and carbon dioxide from the burning of any of these fossil fuels were not released. Now, realize what the 32,000 rooftop solar systems, which is the approximate number of rooftop solar systems in Nevada, could do in a year. Now, imagine what thousands more could do.

I hope this bill will become law, and I also hope all your legislative efforts promoting renewable energy in Nevada, such as the renewable portfolio standards, community solar gardens, energy efficient programs, and green banks, will also become law. In closing, once again, I support and applaud your efforts to enable Nevada to become less reliant on fossil fuels and become a leader in renewable energy. Renewable energy in Nevada is for Nevada, is for the United States of America, is for the world, and is definitely the right thing to do.

Eli Smith, Private Citizen, Reno, Nevada:
I am the license holder for Black Rock Solar here in northern Nevada. I am honored to testify before the Assembly, the people's house. I appreciate your taking the time to listen to what we all have to say.

I am a Nevadan, an electrician, and I am also an energy worker. Mix that all up together, and I am also a tree-hugging dirt worshiper. My company, Black Rock Solar, employing almost a dozen employees, has decided to transition away from building solar energy in Nevada. This has been based on the questionable marketplace in Nevada. As a nonprofit, our mission speaks to not only renewable energy development, but also access to the underserved communities in Nevada. To that end, we have built almost 7 megawatts of solar for underserved communities in Nevada. These are solar arrays that would not have been built were it not for Black Rock Solar and the dedicated employees who did so on behalf of underserved communities.

The removal of net metering without an acceptable replacement produced great turmoil in the small-scale local rooftop solar market. This turmoil has spread to the medium commercial-scale market as well. This has added to why we have chosen to lay off 12 workers in the energy industry and they are now going to be seeking other jobs. Rooftop solar utilizes distributed generation to offset grid development. This way, we can perform growth and expansion in a more cost-effective way.

I look at this as a fellow in the field building the solar array, a fellow sitting in the office designing the solar array, and the fellow whose name is on the license as the responsible party for the solar array. Assembly Bill 270 will go a long way toward building an infrastructure where local contractors can use local electricians and service Nevadans properly. This legislation is a step back so we can go back in time and redo things. My organization is closing. Several other organizations have closed. Most of the national corporations have left the state. Please step up and develop these jobs in Nevada.

Casey Coffman, Regional Vice President, Agriculture and Commercial Division, Sunworks Solar Power, Reno, Nevada:
Sunworks Solar Power is a regional rooftop solar installer with a focus on customer solar ownership. I run the sales for our division in Nevada that we established January 1, 2015, which was one heck of a time to join this industry.

There are really only a few things that are important to make rooftop solar work. The first thing is good solar access. I do not think we need to go into that here. Equitable net metering is obviously very important, and that is what we are talking about today. Another really important thing is long-term net metering and legislative stability, for example, grandfathering.

Two of those things come from legislative guidance, and that is what we are talking about here with A.B. 270. It is an incredible bill to bring this industry back. I think this is an obviously contentious issue in the Legislature and the PUCN, but it is not a contentious issue on Main Street. As has been said before, over 7 out of 10 people supported the referendum that was unfortunately pushed back by the Supreme Court. Also, the Energy Choice Initiative passed with an incredible margin—margins that are not usually seen. I can say, we will support you. Your constituents in your districts will support you if you support us.

There is widespread support for rooftop solar. We have many private citizens who want to participate in the energy future. This is not a question of solar or not solar. That question passed a couple of years ago and especially today with the prices of solar. What I would like to see is the ability for private citizens to participate in the energy revolution. People want to put their money on their roofs and participate, give their neighbors good jobs, and support the industry.

Thomas Gray, Private Citizen, Carson City, Nevada:
I appreciate your taking my comments, and I urge you to support A.B. 270. For the past 11 years, I have been a net metering customer generator with solar panels on my house in Carson City. For many years, I have delivered more electricity to NV Energy than I have used from them, and I continue to do so. My photovoltaic system delivers electricity to the grid during peak daylight hours, both decreasing the demand on the grid, while increasing the supply to the grid. This decreases the need to use our oldest, dirtiest coal and gas power plants which are operated as "peaker" plants during peak hours.

Under the net metering program, over many years I gradually accumulated a surplus of about 3,900 kilowatt hours on my bill as of December 2015. After the current regulations came into effect in January 2016, eliminating net metering, it took NV Energy all of 13 months to completely wipe out the accumulated surplus kilowatt hours on my account and begin charging me for electricity, even while I am still sending them an annual net surplus of electricity. This is unfair and unacceptable.

Even though I was grandfathered back to the net metering rate structure in February 2017, this does not solve the problem for other Nevadans. These regulations killed a thriving rooftop solar industry in Nevada, causing the loss of some 2,700 jobs and preventing the affordable installation of rooftop solar. In turn, this resulted in a greater use of dirty coal and gas power plants, and a huge increase in water use compared with solar.

The killing of the solar industry increased costs to all of the people in Nevada in terms of health, climate impacts, and water availability. I applaud Assemblyman Watkins and this Subcommittee in making an initial attempt to factor in these real costs. I urge you to support A.B. 270 and help Governor Sandoval meet his strategic planning framework to let Nevada become the nation's leading producer and consumer of clean and renewable energy. [Written testimony was also submitted (Exhibit F).]

Verna Mandez, Private Citizen, Las Vegas, Nevada:
My future and the future of all Nevadans is bright. This is not only because we are the second-sunniest state in the country, but also because we have the ability to harness all that sunshine and create good jobs. Ever since I was young, I wanted to work in the solar industry. Honestly, it is very disheartening to me that my home state does not allow me to advance in this field. Solar energy is the future, and it will benefit generations to come. My community wants solar. I want a home someday that can have solar panels. I want to be able to lower my electricity bill through the natural sunshine we get in this overwhelming hot and sunny state.

Renewable energy is where this country is headed, and Nevada has the ability to lead this country with solar energy. Assembly Bill 270 is instrumental to the progress of this state. Nevada has set the bar in the service industry with a record number of jobs, and we have the ability to lead the nation in solar energy production as well. We need workplace diversity, and restoring rooftop solar will do just that.

Marcia Bollea, Private Citizen, Las Vegas, Nevada:
I am pleased the legislators are holding these hearings. I am testifying today in favor of A.B. 270. I am in favor of net metering as a wonderful collaboration between the rooftop solar owners and NV Energy.

I am fortunate in that I was able to install a rooftop solar system on my home in March 2015. This system provides me with all my electrical needs. The benefits of my rooftop solar system include providing energy to my own household and my neighbors; NV Energy does not have to import and pay for coal, oil, or natural gas on my behalf; I am not relying on the use of precious water in the production of energy for my home; and I am not contributing to the wear and tear of the grid.

Net metering is vital to me right now. Until storage is readily available, I depend on NV Energy to sell me back some of my excess electricity which I produced during the day. They are, in essence, storing it for me. After the PUCN ruling and then retraction, I have been mortified by the fact that current, potential rooftop solar customers are not getting the same deal as I did when I was grandfathered back to my original contract with NV Energy. This is detrimental to the whole concept of a thriving solar energy industry in Nevada. Not everyone wants a rooftop solar system for their home. For those of us who do, the rates and fees charged by the existing monopoly for the new customer are a burden, are unfair, and effectively put the brakes on rooftop solar expansion in Nevada. This may be the point for some, but rooftop solar and all of its manifestations are the future.

Since individual rooftop solar systems are allowed in Nevada, it behooves us as citizens to make it as affordable and as easy to purchase as possible. Net metering goes a long way to helping the solar industry in Nevada become a job provider and to making Nevada a solar industry leader in the country and the world. Thank you, and I hope you support A.B. 270.

Chair Brooks:
We are running out of time, and we have heard quite a bit of testimony. Please feel free to say you agree with the prior testimony or submit your written testimony to the staff. In southern Nevada, if there are folks there who have not spoken yet but are in support of A.B. 270, could you raise your hands? We do need to wrap this up, so if you could keep your comments as efficient as possible, we would appreciate it.

Unidentified Speaker on behalf of Alondra Regalado, Private Citizen, Las Vegas, Nevada:
I am reading this testimony on behalf of Alondra Regalado, who is a resident of Las Vegas and a political science major at the University of Nevada, Las Vegas and senator for the College of Sciences in student government. She states:

> I am here today to speak in support of AB 270, which I believe would help move Nevadans forward to sustainable energy production.
>
> By reviving net metering, Nevadans would be encouraged to play an active role in expanding renewable energy production. This increase in sustainability not only comes at a benefit to customers and utilities, but to our environment and natural resources.

> Familiarize yourself with the data and information that's out there! Because it overwhelmingly agrees that net metering is a net benefit and provides cost savings for both solar and non-solar customers.
>
> The choices you make today are the choices that will directly impact my future and of my classmates.
>
> I want to live in a Nevada that supports the solar industry because it is with no doubt, the way of the future.
>
> It is up to Nevada to step up to the plate and lead the U.S. into this exciting and growing industry because the current administration has made it clear that they do not support anything that could remotely be helpful to protecting the environment or support the introduction of new and sustainable energy sources. I urge you, as my representative and as representatives of young people, to lead us into the future with nothing to hold us back.
>
> Thank you.

[Written testimony was also submitted (Exhibit G).]

Kevin L. McGehee, Private Citizen, Reno, Nevada:
As a businessperson, the economic development of Nevada is critically important to me. That is why I am here supporting A.B. 270. Nevada has incredible solar potential that should be harnessed so that we do not have to rely on importing energy from other states. Solar saves water. Distributed generation will result in job creation, business development, and improved national security. Seven out of ten of your Nevada voters supported this, so move forward with boldness and confidence. I thank you for your time and service.

Tom Polikalas, Private Citizen, Reno, Nevada:
I am speaking today on behalf of myself. To echo some of the comments from Mr. McGehee, I support distributed generation in general as one way we can increase the resiliency of our grid. As Admiral Gunn testified in the Senate Committee on Commerce, Labor and Energy Subcommittee on Energy a couple of weeks ago, there are national security implications with distributed generation, so I am here to support those.

Also, in terms of the economic future of our state, I just want to give you a quick synopsis of the Executive Summary from the American Jobs Project, which is a nonprofit that took a look at economic opportunities for various states. They examined where Nevada's competitive strengths were in manufacturing opportunities and found Nevada has the potential, with the right policies, of creating more than 28,000 jobs in solar and battery technology. I would like to submit that Executive Summary [he did not]. I am also hoping to facilitate a presentation at some point in northern Nevada by the American Jobs Project. Although I live in an apartment, I fully support A.B. 270 as one way to brighten our state's economic future.

Linda Nerstad, Private Citizen, Reno, Nevada:
I have two hats here. First of all, I am an educator representing a business called PowerPVC, which is a very unique business. It is a platform that crowdsources like Uber of energy, crowdsources people to the platform, providing them the best of best providers. The second hat I wear is as a Nevada resident in northwest Nevada. My husband and I have solar on our home. I was here in 2015 with my home being paneled. I testified in a situation that was much less friendly than here, and I thank you for that. I thank you for the interaction that you have given back to us, not just listening to us cold-faced. I really appreciate that, having been there before. This is a little out of my comfort zone as a retired teacher.

In my business, I had been working with power. I was shut down in 2016 in my own ability to solicit or to crowdsource people interested in solar because of what the PUCN did. Many people have already testified to that, most expressly Black Rock Solar and Mr. Smith. I will not go through that again. However, I have had a lot of experience going to various states, and I have seen states that are 100 percent solar as a goal by 2025—not 2040 as listed in this bill. Let me say, I am 100 percent in favor of A.B. 270.

With that being said, I have learned a lot from other states. I am embarrassed by what is going on in Nevada. I want to change it, and I want your help to do it. I want to disrupt and decentralize what is going on with NV Energy. I just read an article that said Nevada is number four in the United States. That is not residential solar. You know that. That is commercial solar. We should be number two, maybe even number one. We have 250 days of solar every single year. We need to change this. Thanks for your help.

Natalie Hernandez, Private Citizen, Reno, Nevada:
I am here today in support of A.B. 270. I have been living in this wonderful state of Nevada for the last 16 years. I have been through the cold winters of northern Nevada and the sizzling summers in Las Vegas. The fact that Nevada is one of the sunniest states and we are not utilizing solar energy is baffling. If we want to become better as a state and do right by our communities, we have to restore solar energy in Nevada. Clean energy will not only benefit us in the present, but it will benefit generations to come. Not only will solar energy provide a source of clean energy, but it will also bring more jobs to our hard-working state. Nevada can be a leader in clean energy and help bring a diverse field of job opportunities. Assembly Bill 270 is critical for the progress of Nevada and its constituents.

Larry Fosgate, Private Citizen, Las Vegas, Nevada:
I am a 40-year resident of Assemblywoman Bustamante Adams' district and a volunteer with Nevada's Clean Energy Project. I have submitted my written statements (Exhibit H), so instead of reading it, I will read off what I have written down since listening to you.

For Assemblywoman Carlton, when and if you ever see her again, please ask her to study green banks, because green banks will address all the problems she had with contractors, with storage, and with various other things. The green banks work. They are being used in two states now: Connecticut and Hawaii. We need one in Nevada very badly.

The other issue is we are totally missing our focus. We should be setting goals, not limits. The only way we are going to be the leader of solar in this country is to set goals, not limits.

Eric W. Young, Private Citizen, Las Vegas, Nevada:
I am a retired systems engineer with the National Aeronautics and Space Administration. I am here to support A.B. 270. I urge everyone else to do that as well. Climate destruction is an existential threat, and there are many ways to observe that. You can look at all the data, but certainly water table drop. You just have to look at Lake Mead. There was a very good example this week with massive brush fires in the Midwest that killed many farmers' herds. If you do not think it affects everyone, including people who may not be as well off, just look at some of that data.

I support A.B. 270, but we need the following amendments (Exhibit I): First, in lieu of this existential threat, we need to shut down and permanently close coal-fired electric energy generation at the North Valmy Generating Station forthwith. It shall be replaced, as much as possible, by solar, wind, or other carbon-free sources on site or elsewhere. Second, NV Energy and affiliates shall accept all solar-generated electricity by anyone in Nevada—no limits allowed. Payment to the generating entity or person shall be at least three-quarters of the retail price they pay for energy provided by NV Energy. As needed, NV Energy and affiliates shall idle any carbon-based generators as needed. They can certainly cut back on their 77 percent natural gas. Three-quarters is what a reasonable wholesale price would be relative to retail. Last, but not least, only a small initial fee based on explicit individual needs, negotiated and approved in advance by the Assembly Committee on Commerce and Labor Subcommittee on Energy Chair, can be charged to the entity or persons providing the solar energy for collection to the grid. The same fee can be charged only for leaving. No monthly fees can be charged for solar energy.

I could spend hours with a little bit of a lecture about recurring and nonrecurring costs. I will save that for later. We are mixing all those up. Obviously, the recurring costs for solar and many other beneficial sources are zero. We keep mixing recurring and nonrecurring costs, which we need to stop doing. I appreciate your time, and I urge everyone to support A.B. 270 and add these amendments.

Thomas M. Dudas, Private Citizen, Las Vegas, Nevada:
I have provided 30 pages, front and back, to the Subcommittee (Exhibit J). I am very pleased, Chair Brooks, that you are heading up this panel and you have followed through with what you have said. We have met before. If you need someone to speak up for you for Governor, I am the man.

Linda Saunders, Private Citizen, Reno, Nevada:
I am with Climate Parents and the Sierra Club. Certainly, as to the benefits, one figure I have seen is $174 million for the homeowners and businesses over three years, once we get this plan back in place. In addition, clean, homegrown energy is improved energy security. The gas-generating power plants use about 200 times as much water as solar. Nevada no longer leads the nation in per capita solar jobs as we did 15 to 20 years ago, which is sad. It is time to take the lead again.

Burning gas and coal not only pollutes the air, but it also means we are sending some of our resources and money to benefit other states. We need to keep that in Nevada. In 2016, the United States' solar market grew by 97 percent. In the new electric capacity in 2016, 39 percent was from solar energy. We have witnessed that photovoltaic cells have become more efficient, generating more electricity, while the costs have decreased. We all know that net metering is providing energy at the time it is needed the most—when the sun is shining brightly. Basically, it is a no-brainer for sure. I want you to think in terms of the next generation. I am here for them too.

Mike Rocco, Private Citizen, Truckee, California:
I work for Simple Power as an installer and salesperson. I do a little bit of everything, from permitting to actually getting on a roof to install a system. Most of my paycheck comes down the hill from Lake Tahoe and is spent here in Reno and Carson City. I am proud of that, and I feel very privileged to be benefiting from the current grandfathering program, which is allowing me to do work in northern Nevada.

I am concerned about one thing in this bill. I am in complete support of it, but I was hoping the Subcommittee members and the sponsor could take a second look at the term of this bill, which is 20 years on the net metering. What I deal with in the sale of solar is a customer's return on investment. That is really what consumers are looking at when they are purchasing a solar system. On average in Carson City and Reno, we are seeing about a 12- to 14-year return on investment for a solar purchase. It varies depending on which way the solar is pointing and the type of equipment. However, most of the equipment industrywide is warrantied or guaranteed to work for 25 years. That is why I am a little concerned about the 20-year term with net metering. Most of the investments people are making are based on the 25-year warranty and the return on investment they will see. If this bill reverses net metering at year 20, it is eating into the return on investment for the consumers. I am hoping you can have a little more discussion on that issue at some point. Other than that, I am in complete support of this bill.

Kyle J. Davis, representing Nevada Conservation League:
I want to thank Assemblyman Watkins and the other cosponsors for bringing this bill forward and showing the leadership of bringing back solar energy to our state as it relates to rooftop solar. I think many of the arguments as to why this is an important bill to adopt have been mentioned. I think the amendment that was presented today (Exhibit C) strikes the

appropriate balance between making sure we make this happen in a quick fashion, while still charting a path forward to see what this industry looks like in the future. We urge the Subcommittee's support and are happy to work with all the stakeholders and Subcommittee members on any issues as they arise.

Tobi Tyler, Private Citizen, Stateline, Nevada:
I am here to express my support for A.B. 270. My husband and I had solar panels installed on our house in 2009, which cost us $39,000. Prior to installing the system, we upgraded all of our lighting to compact fluorescent and performed many energy-saving improvements to our home, because energy efficiency is low-hanging fruit, as I have testified before. After our energy efficiency improvements, our average annual electricity consumption was 14.4 kilowatt hours per day. We generate surplus electricity in the summer and run a deficit in the winter. Prior to the PUCN's decision, we were allowed to bank the extra power generated in the summer to offset our winter deficit. Because our system was tailored to our needs, our net power consumption for each calendar year was essentially zero, and we simply paid the monthly service charge, which in 2009 was $8.25 per month. This represents our contribution for NV Energy maintaining the grid, which we use as a battery, along with our supplying clean energy during peak energy demand, thus reducing the need for NV Energy to install additional generating capacity.

In 2016, the PUCN moved to increase the service charge to over $21 per month. Further, all electricity taken from the grid would be charged for and electricity delivered to the grid paid for, albeit at a lower rate. The difference between these two rates was planned to increase substantially over time. Needless to say, these changes eliminated interest in generating one's own electricity, thus killing the rooftop solar industry in Nevada. Although the PUCN subsequently decided to grandfather the previous rate structure to existing rooftop solar customers, new installations would be subject to the newer punitive rates. For us, we really do not know what the financial impacts of grandfathering will be, as the PUCN has made a huge mess of net metering in Nevada.

Hence, legislation is urgently needed going forward to remove existing penalties for those seeking to generate their own electricity, because the sun does not belong to anyone, not even Warren Buffet. Thus, I again urge your support for A.B. 270.

Chair Brooks:
Is there anyone else wishing to testify in support of the bill? [There was no one.] Is there anyone wishing to testify in opposition to the bill? [There was no one.] Is there anyone wishing to testify in the neutral position? [There was no one.] Are there any final remarks from the sponsor?

Assemblyman Watkins:
I want to thank everyone for the thoughtful discussion and the tough questions. I understand this is a heavy lift, but I think the policy here is one of the most important policy decisions we will be making this session. It impacts our economy and our environment, and it puts people to work immediately. I will spend as much time as necessary to meet with all stakeholders on all sides to ensure we get it right.

[Also submitted but not discussed were (Exhibit K), (Exhibit L), and (Exhibit M).]

Chair Brooks:
I know you have been working very hard with many people and this is a moving target. I appreciate your efforts on this very important issue. I will close the hearing on A.B. 270. Is there anyone here for public comment? [There was no one.] Having no further business, this meeting is adjourned [at 6:45 p.m.].

RESPECTFULLY SUBMITTED:

_____
Earlene Miller
Recording Secretary

_____
Lori McCleary
Transcribing Secretary

APPROVED BY:

_____
Assemblyman Chris Brooks, Chair

DATE: _____

EXHIBITS

Exhibit A is the Agenda.

Exhibit B is the Attendance Roster.

Exhibit C is a proposed amendment to Assembly Bill 270 presented by Assemblyman Justin Watkins, Assembly District No. 35.

Exhibit D is a document titled "AB 270 – Restoring Rooftop Solar," submitted by Sean Gallagher, Vice President of State Affairs, Solar Energy Industries Association.

Exhibit E is a proposed amendment to Assembly Bill 270 submitted by Daniel Witt, Manager, Business Development and Policy, Tesla, Inc.

Exhibit F is written testimony presented by Thomas Gray, Private Citizen, Carson City, Nevada, in support of Assembly Bill 270.

Exhibit G is written testimony presented by an unidentified speaker and authored by Alondra Regalado, Private Citizen, Las Vegas, Nevada, in support of Assembly Bill 270.

Exhibit H is written testimony submitted by Larry Fosgate, Private Citizen, Las Vegas, Nevada, in support of Assembly Bill 270.

Exhibit I is a proposed amendment to Assembly Bill 270, dated December 14, 2016, submitted by Eric W. Young, Private Citizen, Las Vegas, Nevada.

Exhibit J is written testimony and other accompanying documents submitted by Thomas M. Dudas, Private Citizen, Las Vegas, Nevada, regarding Assembly Bill 270.

Exhibit K is written testimony submitted by Christina Karr, Private Citizen, Las Vegas, Nevada, in support of Assembly Bill 270.

Exhibit L is written testimony submitted by Rev. Gail Collins-Ranadive, Private Citizen, Las Vegas, Nevada, in support of Assembly Bill 270.

Exhibit M is written testimony submitted by Richard Munk, Private Citizen, Las Vegas, Nevada, in support of Assembly Bill 270.