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BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE

STATE OF CALIFORNIA

ADMINISTRATIVE LAW JUDGE KELLY A. HYMES, presiding

Order Instituting Rulemaking to Revisit Net Energy Metering Tariffs Pursuant to Decision 16-01-044, and to Address Other Issues Related to Net Energy Metering.	EVIDENTIARY HEARING Rulemaking 20-08-020

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I N D E X

VIRTUAL PROCEEDING

AUGUST 6, 2021 - 10:04 A.M.

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ADMINISTRATIVE LAW JUDGE HYMES: We'll be on the record.

Good morning, everyone. This is the time and place for the continuation of the evidentiary hearing for Rulemaking 20-08-020, the Order Instituting Rulemaking to Review Net Energy Metering Tariffs Pursuant to Decision 16-01-044 and to Address Other Issues Related to Net Energy Metering. This evidentiary hearing is being held virtually through the use of the Webex -- Webex platform, as well as a telephone conference line.

I am Kelly Hymes, the assigned administrative law judge to this proceeding. The assigned commissioner is Commissioner Martha Guzman Aceves.

Before we begin today, I want to once again review ground rules necessary, due to the nature of a virtual evidentiary hearing.

This evidentiary hearing is on the record, and a court reporter is transcribing the discussion for the official transcript. As such, the court reporter will interrupt a speaker, when possible to do so without disruption, when there is or are inaudible statements or portions thereof. When disruption is not possible, the reporter will insert the word "inaudible" in the transcript when there is dropped, garbled or otherwise indecipherable audio. I recognize that neither of these conditions are optimal, so to limit these conditions and ensure everyone is heard and the court reporter accurately transcribes statements made today during the evidentiary hearing, participants shall adhere to the following rules:

All attendees must mute their telephone line when not speaking. Participants should speak only when addressed by me. Speakers must identify themselves before speaking each time; however, during the course of direct and cross-examination of a witness, it is not necessary for the questioning attorney or the witness to restate their name each time. Speakers must have both audio and video activated, because you need to be visual by me when testifying and asking questions. Only me and parties expected to speak during a particular portion of the hearing should have their cameras on. Speakers must speak slowly, clearly and one at a time, and speakers should pause between statements, especially during the question and answer examination time. If anyone is speaking, you must not interrupt. If you wish to -- to speak, please raise your hand using the raised hand button on the chat, and speak when I call your name, unless, of course, you are making an objection to a question during the course of examination; in such instances, the attorney may orally interject to provide his or her name, and then briefly state the objection. Crosstalk must always be avoided. If there is any crosstalk, the court reporter may insert the words "crosstalk" in -- in the transcript.

Prior to going on the record this morning, parties provided cross-examination exhibits to be identified and marked for the record. Those exhibits are:

CSA-29. This is a cross exhibit for Witness Chhabra, and it is entitled "NRDC Blog Post, "Rooftop Solar in California is Ready to Take the Next Step," and this is dated March 16th, 2021.

(Exhibit No. CSA-29 was marked for identification.)

ALJ HYMES: Next is CSA-30, also a cross exhibit, entitled "NRDC Response to

CALSSA Data Request 7.04."

(Exhibit No. CSA-30 was marked for identification.)

ALJ HYMES: Next, CSA-31, cross exhibit entitled "Screenshot from NRDC's Data Template for Cost-Effectiveness Model."

(Exhibit No. CSA-31 was marked for identification.)

ALJ HYMES: CSA-32, also a cross exhibit entitled "Pages from Updated Cost-Effectiveness of NEM," N-E-M, "Successor Rate Proposals," dated 6-15, 2021.

(Exhibit No. CSA-32 was marked for identification.)

ALJ HYMES: And then finally for CALSSA is CSA-34. This is an impeachment exhibit entitled "NRDC Response to CALSSA Data Request 5.02."

(Exhibit No. CSA-34 was marked for identification.)

ALJ HYMES: And then our last exhibit for today is IOU-14. This is a cross exhibit entitled "Sum of ACC Values Used in CCSA Proposed Peak Rate."

(Exhibit No. IOU-14 was marked for identification.)

ALJ HYMES: And let me just double-check. Do we have any other exhibits to be identified or marked for the record today? Please raise your hand.

(No response.)

ALJ HYMES: Okay. Seeing no hands raised, let's move on.

Our schedule for today will begin with a few additional questions from me for Witness Chait from TURN. Then we will proceed with cross-examination of the following witnesses: Witness Power -- Powers, excuse me, from Protect Our Communities Foundation, Witnesses Fulmer and Smithwood from Coalition for Community Solar Access, Witnesses Chernick and will -- Wilson, which is a panel, from Small Business Utilities Advocates, and then Witness Chhabra from Natural Resources Defense Council.

And I just want to remind Witness Chait that she remains under oath from yesterday.

However, the other witnesses for today have not stated whether they agree to the witness attestation for this virtual evidentiary hearing, so I want to bring them all together this morning, and have them walk through the list of attestations, and then state whether they agree as such.

So let's go off the record to bring

up all of our witnesses.

(Off the record.)

ALJ HYMES: We'll be back on the record.

So everyone, please raise your right hand. Do you solemnly state under penalty of perjury that the testimony you give in the case now pending before the Commission shall be the truth, the whole truth, and nothing but the truth, do you attest that you will testify based on your own knowledge and memory, free from external influences or pressure, attest that you will adhere to all formal requirements of testifying under oath, including the prohibition against being coached, attest that you will only refer to materials provided by the parties, exhibits premarked and identified by the parties and previously shared with the opposing party, attest that you will not make any recording of the proceeding, and attest that you understand that any recording of a proceeding held by Webex, including screenshots or other visual copying of a hearing, is absolutely prohibited, attest to understand that violation of these prohibitions may result in sanctions, including removal from the evidentiary hearing, restricted entry to future hearings, denial of entry to future hearings, or any other sanctions deemed necessary by the Commission, attest you will not engage in any private communication, either by phone, text, email or other modes of communication, while under oath and being examined, and then finally, attest that if you experience any attempts to tamper with your witness testimony, you will report the occurrence to me immediately?

Witness Powers, do you agree to these attestations?

WITNESS POWERS: I do.

BILL POWERS, called as a witness by Protect Our Communities Foundation, having attested, testified as follows:

ALJ HYMES: Witness Fulmer, do you agree to these attestations?

WITNESS FULMER: Yes, I do.

MARK FULMER, called as a witness by Coalition for Community Solar Access, having attested, testified as follows:

ALJ HYMES: Witness Smithwood, do you agree to these attestations?

WITNESS SMITHWOOD: Yes, I do, your Honor.

BRANDON SMITHWOOD, called as a witness by Coalition for Community Solar Access, having attested, testified as follows:

ALJ HYMES: Witness Chernick, do you

agree to these this attestations?

WITNESS CHERNICK: Yes, I do.

PAUL CHERNICK, called as a witness by Small Business Utility Advocates, having attested, testified as follows:

ALJ HYMES: And may I please have Witnesses Wilson and Chhabra on the screen?

Witness Wilson, do you agree to these attestations?

WITNESS WILSON: I do.

JOHN WILSON, called as a witness by Small Business Utility Advocates, having attested, testified as follows:

ALJ HYMES: And Witness Chhabra, do you agree to these attestations?

WITNESS CHHABRA: I do, your Honor.

MOHIT CHHABRA, called as a witness by Natural Resources Defense Council, having attested, testified as follows:

ALJ HYMES: Okay. Thank you, all.

Let's go off the record.

(Off the record.)

ALJ HYMES: Let's go back on the record.

MICHELE CHAIT, having previously attested, testified as follows:

EXAMINATION

BY ALJ HYMES:

Q Again, welcome back. I have a few questions for you. Thank you again for coming back this morning. I want to remind you, once again, that you remain under oath.

A Yes.

Q So my first question -- and again, this is to help me understand better as well as to complete the record a little bit better for your testimony.

So the first question is about export compensation prices, and I wanted to ask you, as the representative for TURN, if you can tell me what you believe are the benefits or the issues associated with using the avoided cost calculator to set export compensation rates?

A I think that the benefits are that the compensation for exports would be better aligned with avoided cost, and in that way, the cost shift associated with exports is eliminated. I think that the issues regarding compensation based on avoided costs are focused around implementation, and I think the question there is what level of granularity should be -- avoided cost be bucketed into, and in my opinion, in the near-term, it would make sense for avoided cost to be summed into a -- TOU period prices that would reflect the TOU periods of the underlying rates, and as the IOUs develop the capabilities to implement more granular pricing, I think that more granular avoided cost compensation could be implemented.

The one thing that I think should be carefully implemented is to make sure that avoided costs are not weighted for any particular behind-the-meter technology. They should be technology agnostic.

And I think, lastly, on this point, my expectation is that the 2020 avoided cost values were anomalous, and I come to that conclusion, because I've personally seen a wide variety of studies projecting system costs under high penetrations of renewables, and the 2020 market values were materially out of line with those. I'm not saying I don't think the avoided costs will change over time; but, I think that the changes are likely to be less material than what we saw between 2020 and 2021.]

Q As a follow-up, you talk about the granularity and that we should be looking at this on a very granular level. How granular?

A Well, the avoided costs are presented on an hourly basis. I expect that that would be the most granular level that you could reasonably achieve and that could be reasonably implemented in billing systems. I think that in the near term for residential customers, that's not a reasonably achievable goal, which was why I was thinking that bucketing the prices into TOU periods would be an appropriate way of pricing with avoided costs and giving customers price signals that they can easily respond to and that are capable of being implemented in the utility billing systems.

Q Great. Thank you.

A You're welcome.

Q So let's say the Commission decided that we should not use avoided cost values to set export compensation rates, what other methods would be possible?

A In this proceeding, I believe that the other alternative is a share of retail rates. The issues associated with that center around the retail rate structure and also retail rate escalation. Over a long time, there could be a material mismatch between the escalation in retail rates and the avoided costs, and that is what drives the cost shift.

Q Okay. Thank you.

A You're welcome.

Q So I want to refer you to TRN-01, and this is your direct testimony on pages 45 to 46.

A I'm there.
Q I don't have the exact line, but here you wrote that TURN proposes to use a single average hourly value in each IOU service territory for components that vary by climate zone in the ACC model.
A Yes.
Q And I'm wondering if TURN has established how the single average hourly value should be chosen.
A The issue here is that in the ACC model, distribution costs, the avoided distribution costs, vary by climate zone. I believe that this would be difficult to implement if you were going to try to group customers into climate zones and apply the avoided cost calculator across the multiple climate zones that are models. So I think it would be as simple as averaging the distribution avoided costs in the avoided cost calculator for each year.
Q Okay. So sticking with Exhibit TRN-01, I want to talk about storage and integrating DERs. On page 57 --
A Okay.
Q -- here TURN proposes requiring paired storage units to discharge to a predetermined minimum capacity level during a

Stage 2 emergency or extreme summer net peaks. I'm just wondering if any population should be exempt from this requirement?

A Certainly we've already identified medical baseline customers as a population that should be exempt from this requirement. For other types of customers, it's reasonable to allow them to select the maximum discharge level during these types of events and to set the compensation provided for those services based on the amount of service that they're applying to the grid.

I think that that could be done in two ways. One, it could be based on the up-front incentive level that those customers receive or it could be through a separate annual type of payment compensation.

Q Okay. And then my final question is, looking at your attachments, so TURN-02 -- and this is Attachment C, so page 105 -- it's actually 105 of the PDF. It's a little bit easier to find that way.

A This is the attachment to my direct testimony?

Q I'm sorry, TRN-02.

A One moment while I get that up. Okay. I have that up.

Q So I'm looking at page -- it's

page 6 or page 105 and there's a table here. The table contrasts TURN's tariff proposal with the E3 White Paper. Here you state that E3 did not analyze a minimum bill structure. My understanding is -- let me ask you. Did you analyze a minimum bill structure?

A TURN did not, no.

Q Can you explain why you don't propose an increased minimum bill instead or in addition to the Grid Access charge?

A TURN proposes a unique mechanism through the NUS charge. That mechanism charges customers for the nonbypassable and avoidable and shared costs based on their actual monthly self-consumption. So I think that that's a more accurate method of assessing the cost responsibility associated with self-consumption.

Q Okay. So you chose that one because it's more accurate?

A Yes, your Honor.

Q Okay. That is all the questions I have for you. Thank you.

ALJ HYMES: Mr. Freedman, did you have any redirect?

MR. FREEDMAN: Just one follow-up, your Honor.

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REDIRECT EXAMINATION

BY MR. FREEDMAN:

Q Ms. Chait, you were asked about the advantages or disadvantages of using the avoided cost calculator for export compensation?

A Yes.

Q I'm wondering about your views with respect to what other values could be incorporated into the avoided cost calculator to reflect some of the concerns raised by parties in this proceeding?

A In my view, the cost values that are included in the avoided cost calculator are accurate with respect to the costs that the utilities actually avoid and that would go into rates. Without having a better understanding of what some of the proposed values are, I'm not sure I can well opine on that. But I do firmly believe that whatever values are included in the avoided cost calculator should be the same values that would go into utility ratemaking because that needs to be a cohesive suite of figures.

Q Okay. Thank you very much, Ms. Chait.

That's all, your Honor.

ALJ HYMES: Thank you.

Ms. Chait, you are dismissed.

THE WITNESS: Thank you, your Honor.

ALJ HYMES: Let's go off the record.

(Off the record.)]

ALJ HYMES: We'll be back on the record.

Ms. Folk, please proceed.

BILL POWERS, called as a witness by Protect Our Communities Foundation, having previously been sworn, testified as follows:

DIRECT EXAMINATION

BY MS. FOLK:

Q Thank you, your Honor. Ellison Folk for Protect our Communities Foundation.

And, Mr. Powers, can you state your name for the record?

A William E. Powers.

Q And does the testimony in PCF Exhibits-024 and 025 represent your testimony in this proceeding?

A It does.

Q And was this testimony prepared by you or under your supervision?

A Yes.

Q And in addition to PCF-24 and PCF-25, did you directly prepare Exhibits PCF-33 and PCF-64?

A I did.

Q And are Exhibits PCF-26 through Exhibit PCF-66 documents that you cite in your testimony?
A Yes.
Q And is your testimony true and correct to the best of your knowledge?
A It is.
Q And does it represent your best professional judgement?
A It does.
Q And do you have any additions or corrections to your testimony today?
A No.
MS. FOLK: Mr. Powers is available for questioning.
ALJ HYMES: Thank you.
Mr. Freedman, you may proceed.

CROSS-EXAMINATION

BY MR. FREEDMAN:
Q Thank you. Good morning, Mr. Powers.
A Good morning, Mr. Freedman.
Q I'd like to start by turning to page 21 of your testimony where you discuss avoided transmission costs for PG&E associated with NEM solar systems. Let me know when you're there.
A I am there.

Q So right above the table marked as Table 4, you state:

> Each NEM solar system installed in PG&E's territory in the 2015 to 2017 period avoided approximately $620 per year in new transmission costs.

Do you see that?

A I do.

Q Are you asking the Commission to adopt this calculation of avoided transmission cost values for NEM systems in this proceeding?

A I am asking the Commission to adopt a credit for those NEM systems that contribute to eliminating transmission.

Q And is that the value you're asking the Commission to adopt, or are you asking for a different value to be applied?

A That's an example of a value calculated for that specific situation. That is not necessarily the value that would be applied universally. This is the information that was available for this period in this service territory.

Q Do you have a specific value you're proposing going forward?

A In lieu of other data, this would

be it. But additional data would allow refinement of that value.

Q And are you proposing that this value be provided as a credit to customers or be used for some other purpose?

A I propose that it inform the Commission's decision on whether there exists a cost shift or not with NEM with the NEM 2 tariff.

Q And how would it inform the Commission's determination of a NEM 3 tariff structure?

A For example if currently using the cost of service cost shift was in the NEM 2 report, which is showing a cost shift of approximately $618 million for residential NEM, this would be a credit to that to determine whether there is any reason to adjust the NEM 2 tariff going forward.

Q Do you believe a similar credit value should be assumed for customers that install energy efficiency in PG&E's service territory?

A I have not considered that issue.

Q Would you consider applying the same credit value to other types of distributed energy resources in PG&E's service territory?

A I'd consider it.

Q Do you believe the value should be assumed to be the same regardless of where a NEM solar system is deployed within PG&E's service territory?

A Yes.

Q So the mix of systems geographically in your view is not relevant to the determination of the value?

A At this point in time, there are hundreds of thousands of systems dispersed through PG&E's territory. I think parsing the relative concentration of NEM systems would be a challenging task. These are now universally distributed throughout the system.

Q Is it your view that the same value would apply to a similarly sized solar system that is connected in front of the customer meter rather than behind it?

A So is the question in terms of the value to the system in reducing or eliminating transmission and distribution?

Q Yes.

A If you had an in-front-of-the-meter solar system at home or at a business, it's impact on the system would be similar.

Q Okay. Thank you. I'd like you to

turn to page 28. And at the bottom of that page carrying over into the top of page 29, you discuss accurately quantifying distribution avoided costs. And specifically you discuss the possibility of saturation deployment of customer-sided solar and storage in extreme high fire-threat districts. Do you see that?

A I do.

Q And you state that:

> That kind of extreme saturation has the potential to save IOU customers a substantial portion of the nearly $40 billion that the PUC forecasts will be spent by the IOUs on hardening the existing T&D system in extreme high fire-threat districts in the 2020 to 2030 period.

You specifically suggest -- well, in that last sentence that I read, there's a footnote 99, and it cites to what I believe is a Commission staff White Paper; is that right?

A Footnote 99 I have saying, "See footnote 98." Correct.

Q Does the White Paper that you're citing specifically endorse the assertion that customer-sided solar and storage deployed in extreme fire -- high fire-threat districts could save a substantial portion of the forecasted expenditures?

A That White Paper doesn't address that.

Q Are you asking the Commission to find in this proceeding that the proposed expenditures by the utilities that you mentioned here are unreasonable or excessive?

A It would be wonderful if the Commission found that. But I'm not anticipating that they would do that in this particular proceeding.

Q In the next sentence after the one that I've pointed you to, you state that:

> Assuming only half of the proposed $40 billion is avoided by saturation deployment of NEM solar and batteries in the extreme high-fire threat districts, the annual avoided T&D hardening costs would be on the order of $2 billion per year.

Is your method for calculating that shown in footnote 100?

A It is.

Q And are you asking the Commission

to incorporate your proposed savings estimate as part of its consideration of the successor tariff proposals?

A I am in broad strokes.

Q So are you asking for this value to be applied -- to be assumed for all NEM solar systems that might be deployed going forward?

A What I'm suggesting is, one, this is a conservative estimate; but, two, the incredible value of saturation deployment of solar and batteries to allow the utilities to as they need to conduct Public Safety Power Shutoffs is on the order of in some areas $200 to $300 to $400,000 a mile. And that that cost should be credited to NEM customers based throughout the state even though the NEM systems that are actually generating that tremendous savings by eliminating T&D fire hardening are actually in a reduced segment of that NEM customer base.

But they are part of that base. And by doing that saturated -- saturation deployment to avoid these costs, that should accrue to all NEM customers in California. But it's being generated by that subcategory who are in those extreme higher fire-threat districts.

Q What do you mean by saturation

deployment?

A Let's take SDG&E as a example. SDG&E has just over 30,000 customers in the extreme Tier 3 high fire-threat district. Saturation deployment means that every meter -- all 30,000 of those meters -- is equipped with solar or storage if it is possible to put it in such that if the utility initiates a Public Safety Power Shutoff, that those customers don't even know it has happened.

And the -- because those systems kick in -- or those batteries do, and the utility instead of spending tens of -- or the utilities collectively -- instead of spending tens of billions of dollars of frankly wasted money on covered conductors, undergrounding, wood-to-steel poles, instead of wasting billions on those practices, they equip their customers or those customers are equipped to allow them to use the existing system in largely its existing condition, and have it shutoff when it needs to be shut off to protect the rest of California and that area from fire.

Q Have you outlined a specific proposal in your testimony for implementing this type of saturation deployment?

A I have.

Q Where is it?
A A couple of pages further on. The way to do this is to mandate tariff on-bill financing that the utilities would make available to their customers. Many customers that live in the back country are of limited means, LMI customers, and have very limited access to capital to do something of this type.
If there is a tariff on-bill financing program with plenty of private capital available to assure that it is sufficiently financed, that would be the tool.
Another element of this would be the same -- though I don't mention it in this testimony -- is just that the IOUs deployed their TOU rates which was opt-out. That same approach can be used for customers in targeted areas like these high fire-threat districts to assure that you get saturation deployment at a fast pace.
Q Have you estimated the cost of this saturation deployment proposal that you've described?
A The cost rounding off would be zero.
Q And that's a net cost you're

assuming? Not an actual upfront cost that would be incurred by the utilities?

A No. I see minimal to no upfront cost to the utilities other than setting up a dynamic tariff on-bill program and utilizing their ability to initiate opt-out programs. Those are -- that's administrative action. The customers themselves would be financing these projects.

There'd be no rate-based component to the cost. The issue for the utilities would be the administration of the program.

Q So it would be your expectation that with these elements in place, all the customers in the relevant areas would choose to adopt solar plus storage?

A Yes. And that with an opt-out program and the financing available to cost them no more than -- depending on the design of the program less than they currently pay.

What we've seen with opt-out rates in California, especially for the community choice aggregators. I have not checked the opt-out rates for the utilities' TOU rollout. But it's in the high 90 percent, 96, 97, 98 percent of the customers.

For those remaining customers, they'll have to be dealt with at some point.

But these opt-out programs have shown extremely high participation rates.]

Q How would you address the problem associated with what are called split incentives for rental properties, where the tenant pays the bill, but the landlord owns the property, and must make up-front investments, like the ones you're talking about?

A Well, that's why I'm talking about a tariffed on-bill financing program, the tariffed on-bill format, which is tied to the meter, not tied to the owner, not tied to the renter. The whole point behind tariffed on-bill financing is to open up the renter market to deployment of solar and batteries just as easily as you could do it with the white well-to-do customer that is featured in some of the testimony of the parties here.

Q Do you believe that renters generally have the right to install solar and storage systems on the property owned by their landlord?

A No, but it's not a renter decision. The -- the property is owned by the owner. The owner could potentially -- could potentially block the deployment. But, the fact that it's being paid by the meter, there's no additional imposition of cost on the owner or the renter, would present a situation where it would be unexpected, unusual, for the owner to block that, especially when we're talking about extreme higher fire-threat district. The owner probably has an interest in maintaining that property standing, and would have a -- a strong interest in any action that would minimize the exposure of that property of fire.

Q Are you asking the Commission to adopt a comprehensive program like the one you're describing here in this proceeding?

A Well, not in this proceeding. We're also in the -- the wildfire mitigation proceedings, and have been for years. Protect Our Communities has been adamant that this is the right approach to both protecting the customers in these extreme high fire-threat areas and not wasting billions of dollars on techniques that are not going to solve the problem. So I'm not suggesting that we solve it in the net metering 3.0 proceeding. We are in the appropriate proceedings, and we are making our voice heard there.

Q Would you agree that any savings

that are assumed to occur due to the saturated deployments you're describing should be used to reduce the level of any spending authorized by the Commission or utility wildfire mitigation efforts?

A Could you repeat that question?

Q Would you agree that any savings assumed to be achieved through the saturated deployment of solar and storage in high fire-threat districts should be used to reduce the level of spending authorized by the Commission for utility wildfire mitigation efforts?

A Of course, that the -- the -- my perspective is that if the Commission were to adopt this approach, and insist -- and by the way, in -- in the San Diego back country, 30,000 customers in extreme high fire-threat districts, back-of-the-envelope guess, I would guess that at least six to 8000 of those meters already have solar, and many of them have storage. So this isn't a -- a -- a -- a light switch going off and on. This is -- they know that battery and storage will protect them, if those -- a public -- safety power shutoffs occur. So this is happening, that -- the issue is not is it happening; is it can the Commission channel this into a coherent effort where, of course, if we are proposing to spend $40 billion this decade on fire hardening, and this approach would largely eliminate the need to cover conductors, underground, wood to steel poles, and very definitely, the point of doing it would be for the Commission to role back all of that spending on infrastructure upgrades.

Q If the Commission were to authorize a program of -- well, if a saturated solar and storage deployment effort ended up not having any impact on the amount of wildfire mitigation expenditures approved by the Commission for the utilities to spend, should the savings you estimate still be assumed?

MS. FOLK: I'm going to object that these questions are asking him to speculate about future events, and getting beyond the scope of his testimony.

MR. FREEDMAN: Your Honor, this is the core of Mr. Powers' testimony. This is what he spends most of his testimony arguing for. I think it's fair to ask what happens under different scenarios.

ALJ HYMES: I'll allow the questioning.

THE WITNESS: Could you repeat the question?

///

BY MR. FREEDMAN:
Q Sure. If -- if a program of saturated solar and storage deployment in extreme high fire-threat districts ends up having no impact on the amount of wildfire mitigation spending authorized by the Commission that the utilities are allowed to spend, do you think it would still be reasonable to assume the savings that you quantify in your testimony?
A I don't agree with the hypothetical. The only reason for the Commission to authorize saturated deployment of solar and batteries would be to eliminate large parts of the projected spending authorization for the more conventional fire hardening program. They -- you wouldn't -- you wouldn't do them both.
Q So are you basically saying the Commission should only approve a saturation program like you describe if it were to -- to result in a direct reduction in wildfire mitigation spending by the utilities?
A The -- please repeat the question.
Q So are you saying the Commission should only approve a program of saturated solar and storage deployment, as described in your testimony, if it results in a direct

reduction to the amount of spending by the utilities on wildfire mitigation activities?
A Yes.
Q Okay. Thank you. On page 32 of your testimony, you discuss an E3 technical analysis that was performed, I believe, in 2009. Is that right?
A Correct.
Q And the sentence -- the first sentence in this section describes E3's analysis as a fine -- as providing a finding that distributed solar generation is comparable in cost to remote new transmission-dependent utility-scale solar. Do you see that?
A I do.
Q And that's -- that analysis looked simply at the deployed costs of the resource. Is that right?
A What do you mean by that?
Q Did that analysis consider tariff treatment for distributed resources, or did it simply look at the levelized cost of capital and operating expenses for the various options?
A It was limited to capital and operating cost.
Q Okay. On page 33, at the bottom of

that page, you have a paragraph that begins "The cost-competitiveness of the High DG Case was accurate in 2009," and states: "SCE filed an application to build 250 megawatts of IOU-owned solar on industrial warehouse rooftops in March of 2008 at an installed cost of 3.50 per watt." Do you see that?

A I do.

Q Did Edison's approach provide retail rate credits for customers hosting these systems or were the systems connected in front of the customer meter?

A These systems were in front of the customer meter.

Q And the customers hosting those projects received lease payments for the use of their facility. Is that right?

A That is correct.

Q Okay. And then finally, just to circle back to the on-bill financing concept that you discuss on pages 43 to 44 and we were -- you and I were talking about just a minute ago, in a situation where a property is a rental property, are you -- what would happen -- are you suggesting that the assets would be owned by the renter or by the landlord?

A The assets would be attached to the

meter. So the owner of the -- of the building would be the ultimate beneficiary, the owner of the -- that hardware.

Q And the owner of the building would also be responsible for payback of the on-bill financing costs, if the renter were to vacate the property. Is that right?

A True. But, on programs that are actually in operation, like the Hawaii GEMS program, they have assumed that either one month or 6 weeks of every year a property would not be occupied, and so it -- the rates assume a certain amount of time when the property is not occupied. But, I want to underscore here that whether the property is occupied or not, that solar power is getting produced, and either used on-site, if no one's in it, it's being sent to the grid, the battery storage unit is fully operational, can be dispatched, as needed, to support that facility. So it's not as though it's a dead asset when no one is in the structure.

Q Okay. Great. Thank you, Mr. Powers. Those are all my questions.

A Thank you.

ALJ HYMES: Any redirect?

MS. FOLK: May I have just a minute with my client?

ALJ HYMES: Yes. We'll be off the record.

(Off the record.)

ALJ HYMES: Let's go back on the record.

And again, Ms. Folk.

MS. FOLK: We have no redirect.

ALJ HYMES: Okay. Thank you very much.

And Mr. Powers, you are -- you are excused. Thank you very much.

THE WITNESS: Thank you, your Honor.

ALJ HYMES: And let's go off the record.

(Off the record.)

ALJ HYMES: We'll be back on the record.

MR. WEIDMAN: Thank you, your Honor.

MARK FULMER, having previously attested, testified as follows:

DIRECT EXAMINATION

BY MR. WEIDMAN:

Q Good morning, Mark. Could you please spell -- state and spell your name for the record, please?

A There; making sure I'm off mute.

My name is Mark Fulmer, M-a-r-k F-u-l-m-e-r.

Q And what exhibits are you

sponsoring in this proceeding?
A I am sponsoring my direct and rebuttal testimonies. They have been labeled CCS-02 and CCS-04.
Q And were these exhibits prepared by you or under your direction?
A Yes, they were.
Q Do you have any changes, corrections, or additions to your testimony today?
A I'd like to point out that in my opening testimony, there are a few instances where I refer to the CCSA proposal as the net billing compensation tariff. Those, of course, should be the net value compensation tariff. I believe it was clear in context what I was talking about, but I wanted to make that clear.
Your Honor, I can point out the specific instances, if you'd like.
THE REPORTER: Your Honor, this is the reporter. You are on mute.
ALJ HYMES: I just realized that.
Please, for the record.
THE WITNESS: Yes. These are in Exhibit CCS-02, page 6, line 2, page 7, line 4, and page line -- page 9, lines 15 and 20.

BY MR. WEIDMAN:

Q Thank you. Are the facts contained in your testimony true and correct, to the best of your knowledge?

A Yes, they are.

Q And are the opinions expressed in your testimony based upon your best professional judgment?

A Yes, they are.

Q And if you are asked these questions today, would your answers remain the same?

A Yes, they would.

MR. WEIDMAN: Your Honor, the witness is available for questioning.

ALJ HYMES: Thank you, Mr. Weidman.

Mr. Barnes for the utilities, please proceed.

MR. BARNES: Thank you, your Honor.

CROSS-EXAMINATION

BY MR. BARNES:

Q Good morning, Mr. Fulmer. Can you hear me okay? I'm Greg Barnes, and I'm examining you on behalf of the Joint IOUs.

A Mr. Barnes, I can hear you, but you are a bit faint.

Q Okay. Let me -- let me do this. Is this better?

A That is indeed better. Thank you.

Q Sure. Let's get oriented on your -- the scope of your testimony.

You testify on the net value billing tariff that you just described, and that includes generation and transmission and distribution elements based on the avoided cost calculator, or ACC. Is that correct?

A Yes, it is.

Q And you will testify to the values, including -- included in that net value billing tariff. Correct?

A That is correct. I derive the values that appear in the exhibits.

Q And to get oriented, the net value billing tariff is essentially what is applied to the -- what some people would call the export value of the community solar projects described in SEIA -- in your proposal. Is that correct?

A Yes, it is.

Q Okay. Now, refer to page 10 of your rebuttal testimony on -- that is Exhibit CCS-04, starting at line 22.

A Yes, I see that.

Q You claim that the -- and I quote, "The CCSA net value billing tariff explicitly addresses the issue of when the highest cost of the distribution system occurs by only providing payments during the hours when avoided distribution and transmission and generating capacity costs are occurring," end quote.

Do you stand by that?

A I think that statement needs a bit of refinement. It's a bit overbroad.

The -- the picked periods where these costs would be addressed in the proposed tariff are geared more towards the gen- -- the period where the generation capacity is needed, particularly in the short-term. That doesn't always completely overlap with when the distribution and transmission system needs occur, per the avoided cost calculator. So that's a bit of an overstatement, although I do refer you to the next sentence where I point out in the Public Advocate Office figure where it does show some distribution avoided costs, and that they are falling in that particular timeframe.

Q I -- I just would like to focus on what your proposal is, and I want to confirm that the ACC values for generation and T&D are included in your value stack only for 264 peak hours in the year. Is that correct?

A That is correct.

Q Did you see the email I served Wednesday that asked you to review Exhibit IOU-14 and an accompanied spreadsheet with ACC output?

A I did receive that email, and have the Exhibit IOU-14 in front of me now.

Q Okay. And were you -- I -- you know, I appreciate you looking at that in preparation for this, and I thank you and Mr. Weidman.

Now, could you confirm that the ACC output is taken directly from the latest approved ACC, that is the 20 -- I apologize to the reporter, but that is the 2021 ACC Electric Model v1b.xlsb for the scenario, quote, "PG&E CZ 11, start year 2021, 25-year levelization"?

A I can't specifically confirm that, although I am roughly familiar with your source there. I didn't go back and do a line-by-line examination of whether it was exactly the same; but, I'll work under the -- I'll answer your questions, you know, based on the exhibit in front of me.

Q I -- I appreciate that, Mr. Fulmers (sic).

And your workpapers indicate you

did download spreadsheets from the avoided cost calculator as part of your testimony preparation. Correct?

A Yes, we did download the -- the updated avoided cost calculator for 2021, you know, per my rebuttal testimony a few pages on.

Q Now, if we could refer to your rebuttal testimony, Exhibit CCS-04, at page 13, in that very pretty table, Table 1.

A Uh-huh. Yes.

Q And I'll refer you to the right column, extreme right column, where you have values for T&D capacity and generated capacity. Do you see that?

A I do.

Q And the white column for T&D capacity is .2247 cents. Is that correct?

A Yes, that is correct. I see that on the table.

Q Okay. And just to get people oriented, for the gen capacity, that's .2342 cents. Is that correct?

A Yes, it is.

Q And if we go, then, to exhibits -- Exhibit IOU-14, in the column labeled "Annual Sum" on the right side, that -- that gets you the $121, if you multiply those two numbers

summed, does it not, if you multiply it by 264?
A I did look at that spreadsheet. Again, that calculation in the -- and I did duplicate that sum, yes.
Q Okay. So let -- let's clarify, going back to page 10 of your rebuttal testimony.
You -- you state that your value is based on the narrow window of the 264 peak hours of the year. Is that correct?
A That is correct.
Q So would you agree that you set your proposed T&D capacity and generation capacity peak rates by taking the annual sum of those value categories from the ACC in all hours, and dividing by 264?
A That is effectively correct. As in any ratesetting process, one has to make approximations and simplifications, and that is a simplification that I thought was appropriate to make.
Q So you speak of simplification.
So you took values from outside this 264 hours?
A Yes, just as one would do in setting retail rates. The peak periods for the distribution component -- components of

rates are also from the 4:00 to 9:00 period, even though, as we see here, the avoided costs may fall out of that. It's a simplification that's appropriate to make in ratemaking. And in particular, as we all know, the evening powers are -- the evening hours are particularly important right now in getting appropriate resources to serve those hours by creating the best incentive. I thought that that was appropriate, and I thought it was appropriate because not only the need during those hours, but also, the impact on the RIM was quite modest. It has a very good RIM score, even with these approximations.

Q Let me direct your attention to the last row -- rather, last -- yeah, the last row in Exhibit IOU-14, and that value is labeled peak hour values as percentage of total. Do you see that?

A I do.

Q And the peak hour there refers to your 264 hours. Did you understand that?

A That those were the peak hours, yes.

Q And according to this -- I will confess, I went to law school because I was bad at arithmetic. This was prepared by

Mr. Kerrigan.

Do you agree with the percentages in that row, which suggest, for -- for example, the total of the values in your rate come from only 48 percent of those peak hours, and not 100 percent, as your testimony indicates?

A I agree with that, although it doesn't necessarily surprise me. The peak period was designed primarily around the near-term hours.

If you go back to the opening testimony, one can see that I clearly chose the peak periods based on the 19 -- or excuse me, the 2020 avoided costs, and at that point, I was capturing 90 percent of the generation capacity hours.

So the fact that, when one levelizes and spreads it across, it deviates from that doesn't surprise me.

Q So, in fact, you took values from outside those peak hours in developing your -- your -- your rate that you add to the value stack. Is that correct?

A Yes. I was quite clear about that in my testimony.

Q Mr. Fulmer, I have no -- no further questions. Thank you.

ALJ HYMES: Ms. Folk, any -- or excuse me. Mr. Weidman, any redirect?

MR. WEIDMAN: No, your Honor.

ALJ HYMES: Okay. Then, Mr. Fulmer, you are dismissed. Thank you very much.

THE WITNESS: Thank you.

MR. BARNES: Your Honor, if I may make a procedural suggestion, we intend to move Exhibit IOU-14 into evidence. And Mr. -- in the event Mr. Weidman has something to say about that, it might be better to have the colloquy with the witness fresh in mind as we discuss the exhibit. Or -- or we can wait for the end of the day, as the usual practice; just a suggestion.

ALJ HYMES: I -- I would prefer that we wait -- wait until the end of the day. Thank you.

MR. BARNES: Thank you, your Honor.

ALJ HYMES: All right. Let's go off the record.

(Off the record.)

(Brief recess.)]

ALJ HYMES: Let's go back on the record.

Mr. Wiedman, please proceed. You're on mute, Mr. Wiedman.

Let's go off the record.

(Off the record.)

ALJ HYMES: We'll be back on the record.

Mr. Wiedman, please proceed.

MR. WIEDMAN: Thank you, your Honor.

BRANDON SMITHWOOD, called as a witness by The Joint CCAs, having previously attested, testified as follows:

DIRECT EXAMINATION

BY MR. WIEDMAN:

Q Good morning, Mr. Smithwood. Could you please state and spell your name for the record.

ALJ HYMES: Mr. Smithwood, you are on mute. There you go.

THE WITNESS: Okay. Can you hear me now?

ALJ HYMES: Let's go off the record.

(Off the record.)

ALJ HYMES: Let's go back on the record.

MR. WIEDMAN: Thank you, your Honor.

Q Good morning, Mr. Smithwood, could you please state and spell your name for the record.

A Yes, Brandon Smithwood. Brandon is B-r-a-n-d-o-n, and Smithwood is S-m-i-t-h-w-o-o-d.

Q And which exhibits are you sponsoring in this proceeding?
A My direct testimony and my rebuttal testimony, which are Exhibits CCS-01 and CCS-03.
Q And were the contents of these exhibits prepared by you or under your direction?
A Yes, they were.
Q Do you have any changes, corrections, or additions to your testimony?
A No, I do not.
Q Are the facts contained in your testimony true and correct to the best of your knowledge?
A Yes, they are.
Q Are the opinions expressed in your testimony based upon your best professional judgment?
A Yes, they are.
Q And if you are asked these same questions today, would your answers be the same?
A Yes.
MR. WIEDMAN: Your Honor, the witness is available for questioning.
ALJ HYMES: Thank you.
Mr. Barnes, you may proceed.

MR. BARNES: Thank you, your Honor.

CROSS-EXAMINATION

BY MR. BARNES:

Q Good morning, Mr. Smithwood. I'm Greg Barnes. I'll be examining you on behalf of the Joint IOUs. Can you hear me okay?

A I can.

Q Thank you. Let's get oriented. I'll refer you to Exhibit CCS-01 of your direct testimony at page 19 starting at line 2. Basically you give an overview of your net value billing tariff; is that correct?

A Page 19, line 2?

Q Yes.

A Yes, I'm there.

Q Okay. And basically what you're describing is a price for export compensation by the community solar generator; is that correct?

A That is correct.

Q And this is not a net metering arrangement, is it? The pricing is applied directly to the output of a community solar facility; is that correct?

A It is a net billing tariff, as a number of parties have proposed, so it is a successor to net metering.

Q So in other words, a credit is applied to any eligible customer that subscribes to the community solar project under your proposal?
A That's correct.
Q I'm going to refer to CCSA's proposal for an Environmental Justice and Low-Income Market Transition adder as the EJ adder for the sake of brevity. Are you comfortable with that?
A Yes, I am.
Q So I'll refer you to your opening testimony, Exhibit CCS-01, page 25, where you discuss the EJ adder participation.
A I'm there.
Q Okay. And you define the eligible customers as those consumers enrolled in the CARE or FERA programs, CalFresh/SNAP, LIHEAP, and Head Start; correct?
A Correct.
Q And for the reporter, SNAP is an acronym, S-N-A-P, and LIHEAP is an acronym, L-I-H-E-A-P, just to clarify that.
Now, are there other limiting principles through subscription such as location or proximity?
A There are not. You need to be a customer within the service territory of the

utility -- the distribution utility where the facility is.

Q And --

A Apologies. Can I correct that?

Q Oh, please. Please correct.

A For the tariff itself, all customers in order for -- to be an eligible low-income customer, the project would have to be in an environmental just -- in a DACC community. The customers could be anywhere in the service territory. Just wanted to make that correction.

Q I see. Now, it wasn't clear to me, probably because I'm too literal minded, but is eligibility for your entire program; that is, all the Value Stack, limited to the consumers that you describe starting at line 16?

MR. WIEDMAN: I'm going to object. That question wasn't clear to me, but if the witness understands it, that's fine.

THE WITNESS: I'm on page 25 of my direct testimony, and I'm seeing line 16 is "Why have you proposed prohibiting the use of credit scores as a screen for enrolling in the Net Value Billing Tariff?"

BY MR. BARNES:

Q Okay.

A Are we referencing the same?
Q Fair enough. I was referencing above that -- I'm sorry -- where you just described the eligible customers.
Mr. Wiedman may have a point. Let me try to rephrase.
Could somebody who is not -- strike that. Are eligible -- could somebody subscribe to the community solar facility and get the net value billing without the EJ adder if they did not qualify for that adder as you describe?
A Low-income customers are entitled to the value-based credit -- I'm sorry, non-low-income customers are entitled to the value-based credit as are the low-income customers.
Q Okay. So the eligibility that you describe is limited solar to the EJ adder, not to the program itself?
A I apologize. Can you clarify the eligibility. To what?
Q I just want to confirm that eligibility to the EJ adder is limited to those you describe in your testimony in the CARE or FERA programs, et cetera?
A No. The adder is available to all customers for a qualifying project. So if a

project qualifies for the market transition credit, and all customers subscribing to that project are eligible.

Q Thank you. Now we can get to line 16. You propose the use of credit scores to determine eligibility for participants in your EJ adder; correct?

A No. We propose prohibiting the use of credit scores.

Q I'm sorry. I misstated. Thank you. That clarifies. So developers marketing subscriptions in your proposed program would still have the sole discretion on whether or not a given applicant is accepted as a subscriber; right?

A Yes, they would have discretion over who subscribed.

Q Okay. So a developer could still use other data other than credit scores at their disposal to reject applicants they see as a credit risk; correct?

A That is correct. As I reference in my testimony, the community solar business model typically is not really relying on the creditworthiness of the customers at this point so -- but they could. That's true.

Q Do you know what percentage of the population of disadvantaged communities are low to moderate income by your definition?

A   Low income within disadvantaged communities. I do not.

Q   Okay. Let's go to your testimony, same exhibit, Exhibit 1, pages 22 and 23, starting at line 9. I'll wait until you get there.

A   "Moreover to ensure facilities"? Are we in the same spot?

Q   Now you have to bear with me. I am confusing lines with page numbers. I apologize to everybody who has to sit through this. You define the term "generator account" at lines 19 on page 22 through the next page.

A   Uh-huh.

Q   And you defined this as being existing VNEM tariffs. I will read starting at line 19:

> The 'Generator Account' is a customer account where the renewable electrical generation facility, ('REGF'), is located and interconnected to the investor-owned utilities' distribution system through a single meter.
>
> A generator account may or may not

> have load beyond that required by the REGF who takes service with the generator owner or their designee as the customer of record.

May I refer to the REGF in this question as just the generator for brevity?

A Yes.

Q Okay. Now, do you intend that the generator account that served load behind the generator meter other than that necessary for the station load of the generator?

A Yes. Under our proposed tariff, that would be admissible.

Q So in that case, if the generator account's load significantly increased such that the exports from the generator are insufficient to meet customer subscription, how would that impact the billing arrangement?

A That account would still have an allocation. Even if there were to be no material load behind the meter, you have a monthly allocation and there's a generator account where credits can be banked, say, if you lose or gain a customer. So you would manage that load behind the meter in much the same you would as any of your accounts. So you'd have to make sure that your allocations match customer subscriptions.

Q So are you --

ALJ HYMES: Mr. Barnes, excuse me. Okay. Thank you. Your video had gone off for a brief moment. You're back with us. Please proceed.

MR. BARNES: Thank you, your Honor.

Q So what you're saying is that the generator account would simply manage the behind-the-meter load so it wouldn't cut into the generation necessary to support customer subscriptions. Is that what you're saying?

A If I understand your question, no. The exports are the credits that are available to be allocated. This is exactly how it works in New York's Value of Distributed Energy Resources Tariff. The majority of facilities don't have meaningful load behind the meter, but the tariff allows for that, and the value-based credits are based on net exports.

Q Thank you. Refer to page 35 of your testimony, Table 3 if you can. Let me know when you're there.

A I am there.

Q This table represents the megawatt targets by service territory for your proposed -- for your community solar proposal; is that true?

A That's correct.

Q And the target is 1,000 -- total target for the state is 1,229 megawatts; is that true?

A That is correct.

Q Are you aware that there is currently excess solar generation in California during much of the day?

A I am aware, and that was specifically what our proposal is designed to address, providing compensation largely in the hours of highest need, which are no longer in the middle of the day.

Q But in terms of generating output, won't the 1,229 megawatts simply increase the solar excess?

A It is not our expectation because, as evidenced in E3's cost effectiveness evaluation, it's not cost effective for the participant to get compensated with the avoided cost values during the middle of the day. On a levelized basis, they are about 2 to 3 cents per kilowatt-hour. The project would be nonviable.

Q So are you saying that the project simply won't generate if it contributes to the excess?

A I'm saying that no one will build the project because they won't be financially viable because the compensation for exports in the middle of the day are very low.

Q Does CCSA have a position on whether the current NEM tariffs require the form beyond your proposal?

A We are proposing our tariff as a subtariff to the NEM metering tariff. We are not opining on the NEM tariff available to residential and commercial customers. This is an expansion of the virtual NEM metering tariffs available.

Q So you're aware that this proceeding aims to inform the Commission's Net Energy Metering program though; right?

A I'm aware. I'm also aware that the scope of the proceeding is inclusive of the subtariffs.

Q Do you agree that The Values Stack and EJ credits you propose will be paid for by nonparticipating ratepayers?

A Yes. On the Value Stack, yes. We are agnostic as to how costs are recovered for the EJ adder.

MR. BARNES: Your Honor, I have no more examination for Mr. Smithwood. Thank you.

ALJ HYMES: Thank you.
Any redirect, Mr. Wiedman?
MR. WIEDMAN: Thank you. If I could have a moment with the witness, your Honor.
ALJ HYMES: Yes. We'll be off the record.
(Off the record.)
ALJ HYMES: We will be back on the record.
MR. WIEDMAN: I have no redirect, your Honor.
ALJ HYMES: Thank you.
Next up is Mr. Freedman from TURN. Mr. Freedman, you may proceed.
MR. FREEDMAN: Thank you, your Honor.

CROSS-EXAMINATION

BY MR. FREEDMAN:
Q Good afternoon, I believe, where you are, Mr. Smithwood.
A Good afternoon and good morning to you.
Q I'd like to start with your rebuttal testimony on pages 12 and 13 where you provide a cost comparison between existing programs that serve low-income customers, particularly those in disadvantaged communities and your proposed EJLI Tariff.

Do you see that?

A Yes, Table 2; correct?

Q Yes, exactly. You perform a calculation which you describe on page 12 where you determine the cost per participant. As part of that, you're assuming, am I correct, that there would be 1,229 megawatts of new capacity eligible for the market transition credit?

A I am assuming that, yes.

Q And the market transition credit that is proposed for projects located in disadvantaged communities would be calculated in order to ensure that each participant would receive the economic value equal to the difference between the projected ACC values for exports and a retail ratebased compensation structure for exports; is that right?

A That would be how our market transition credit would be determined, correct.

Q And would the MTC change in future years, if the delta between the ACC values and the retail rates changes?

A We have proposed that it would be established once. We did not indicate when that would take place, presumably the

Commission order could be in a tariff implementation. So as you may have noticed in my direct testimony and rebuttal testimony, we have different values for the market transition credit, but it is not our assumption that going forward the MTC will adjust as retail rates and ACC values change.

Q And the difference between the various proposals that you've made in this case, is that a function of relying on the 2020 versus the 2021 ACC values?

A Yes, the 2021 ACC values -- and I have a table in my rebuttal testimony that updates the MTC values because they are much lower, and retail rates are the same as they were earlier in the spring than TC values in the table and in my rebuttal testimony are higher.

Q If the Commission were to update the ACC in a future proceeding and calculate higher values for the nonenergy components of the ACC, do you think it would be reasonable to adjust your proposed market transition credit accordingly?

A I think it would be reasonable. We haven't proposed that. For simplicity's sake, we envision this MTC being much like the California Solar Initiative, sort of like a defined block of compensation and capacity at that compensation rate, but I believe it would be reasonable to change it over time.

Q Okay. Going to Table 2 on page 13 of your rebuttal, you calculate the cost for each participant under your tariff as $6,007.75; is that right?

A Yes.

Q Is your proposal for the participant to receive the MTC or for the project owner or the generator account to receive the MTC?

A We propose two ways in which the MTC could be allocated. One would be as a cents-per-kilowatt-hour credit, which would be on the customer's bill over the term of the tariff. The other would be an up-front incentive that would be available to the customer -- I'm sorry -- that would be available to the project and, in turn, the project would have to provide a bill credit value to the customer. That bill credit value to the customer is equivalent to at least half the value of that market transition credit.

I'll also note that we've proposed net crediting in my direct testimony, also referred to as simplified billing, where the customer would receive a net credit on their bill. So, for example, if the credit was 10 cents and the subscription price with community solar providing was 5 cents, they would receive a 5-cent bill credit and have no outstanding obligation to the community solar provider. So that's another way in which those -- the value of that credit could be shared amongst the subscriber and the project.

Q And in response to questions from Mr. Barnes, you explained that the MTC that you're proposing would be provided for both low-income and non-low-income subscribers so long as the project met the basic eligibility criteria; is that right?

A That is correct.

Q And your proposal is that a minimum of 50 percent of the subscription based on capacity would have to come from low-income-eligible customers?

A That is correct.

Q So does that mean that when you provide a value here on Table 2, cost per customer, that would be a cost for both low-income and non-low-income subscribers? It doesn't distinguish, does it?

A In making this table, I had to make

simplifying assumptions and I assumed these were all low-income customers.

Q But, in fact, this credit could be provided for non-low-income subscribers of the project as well; right?

A That is correct.

Q Do the other programs you've listed here in this table have income eligibility requirements for participation?

A Yes, they do.

Q And so if only half of the subscriptions to a particular project were from low-income subscribers, wouldn't the cost effectively be about double what you're proposing here per low-income subscriber?

A Yes, but that would make the comparison here not apples to apples. For example, the CSGP program allows community sponsors that are nonresidential, non-low-income, to subscribe to the project. So there's one example where it would not be an apples-to-apples comparison since some of those subscribers may be non-low-income.]

Q Okay. Thank you. Let's turn to your direct testimony, page 37 and 38, where you describe some of the benefits associated with this market transition credit. Let me know when you're there. And particularly the top of page 38.

A I am there. Is there something within this paragraph you're referring to in particular I should -- should I be looking at line 1 of 38?

Q On page 38 line 6, you state that:

> CCSA proposes that at least half of the adder value be required to be conveyed to the participant to ensure these enhanced savings are realized.

A Yes. Okay.

Q Does this mean that you're proposing that only half of the MTC value would be required to be conveyed to customers, participants?

A Yes.

Q And what would happen to the other half of the value?

A Presumably that would be realized by the project owner.

Q Do you have any constraints in your proposal on ensuring that developers don't retain excessive amounts of subsidy money beyond this one related to the project?

A Limitations to non-MTC compensation?

Q Yes.

A No. We don't have limitations. We do provide for the development of disclosures. So the Commission has, under our proposal, control over some terms within what can be provided. So in that respect, there are controls over the entire transaction, which can presumably include non-MTC compensation as well as MTC compensation. But I'm not -- I'm not sure what incentives we'd be referring to here.

Q But am I correct that your proposal as you described it a moment ago was that the entire MTC would go to participants if it was paid out on a cents per kilowatt-hour over time, but that here only half of the value would have to go to subscribers if it was provided as an upfront credit? Or am I misunderstanding?

A I believe that may have been ambiguous. This was in the view if it was an upfront credit would be 50 percent. CCSA is not opposed to having the same limitations on if it was a cents per kilowatt-hour credit.

Q And why is it reasonable for the developer to be able to retain half of this credit?

A These are customers that are harder to serve. They may have literacy barriers.

Typically, you will work through a community partner that know -- that low-income customers trust. And this builds a valuable relationship with the customer, but there's substantial expense. So enhanced incentive to the developer ensures that these communities are served.

Q Are you locked into the 50 percent criteria? Or would you be open to a different formulation?

A CCSA is open to different formulations both for how the MTC is calculated and for what is provided to subscribers.

Q And is it your intention that -- it's not your intention is it that this credit be used to enrich developers, but rather simply to cover legitimate costs of project development and administering accounts; is that right?

A That is correct.

Q Let's stay in your direct testimony and go to page 33 where we talk -- you talk about the 50 percent subscription requirement from eligible low-income customers.

Is it your proposal that the 50 percent subscription requirement be a one-time showing or an ongoing requirement that requires regular compliance demonstrations?

A Our expectation is that it would be ongoing.

Q And what would be the consequences of a project failing to continue to demonstrate that at least 50 percent of its capacity is serving eligible low-income customers?

A We have not specified that. In the implementation proposals in my direct testimony, we've discussed billing and crediting work and consumer disclosures that would be forthcoming. That would be the place where penalties could be determined.

So there's at least a couple of ways that this could be achieved. Credits could not be applied if there were insufficient numbers of low-income customers. So if you were below that hurdle, you could forfeit effectively an amount of compensation.

There could also be a process for recertification as a way to, on a periodic basis, ensure that sufficient members of eligible customers are subscribed.

There's a monthly exchange of billing data that happens between the subscriber organization and the utility. So there's a clear accounting path whereby the utility can see what accounts are subscribed in the project and their qualifications.

So we didn't define exactly what the repercussions should be. But they'll be a very (inaudible) ask for determining whether projects remain in compliance.

Q Would you agree this might be a problem if there was an upfront one-time MTC provided that essentially couldn't be clawed back?

A Conceptually, it could. But, again, if your project is unable to receive some or all of its compensation or it is decertified, those are substantial penalties, which particularly prospectively, you're not going to want to finance a project if you don't think you can meet those hurdles.

Q Would those kinds of remedies also have an adverse impact on low-income subscribers to the project that were depending upon continued participation?

A In the hypothetical that one of these projects ceased operating, a low-income customer under our proposal would be no worse off than they were before they subscribed.

We prohibit exit fees from

contracts, which make any contract null and void. And as I mentioned, we proposed net crediting whereby the customer would have no ongoing obligation to the community solar provider.

Q Okay. Thank you. Let's go to your rebuttal testimony, pages 14 and 15, you discuss Title 24 compliance.

A I'm there.

Q And on line 10 of page 15 you state:

> Regardless, successor tariff options are not the lowest cost route to Title 24 compliance if compliance is fully dependent on rooftop solar installations.

What do you mean by this statement?

A We in the subsequent table, we used E3's cost effectiveness evaluation, which was prepared for the Commission as part of this proceeding. And we took their first year cost shift for each of the proposals and demonstrated that our proposal was -- if half of the buildings built under the Building Code were implied under community solar under our proposal, it would be less expensive than the alternative proposals in the docket.

Q And are you suggesting then that

the CCSA proposal could be used as an alternative to installing rooftop solar by those developers on those facilities?

A Yes. Currently the Building Code, the Title 24 Building Code, allows for community solar. The development of community solar projects to meet that ability. And the Building Code has been limited because there are viable tariffs within most of the utilities for developing such projects.

Q Okay. Thank you. I'd like to ask about the treatment of renewable energy credits. Who would own the renewable energy credits associated with a shared solar facility?

A Our proposal was silent on that. Presumably they'd be owned by the generator. CCSA is supportive of having those REGFs registered on a REGF tracking service and retired on behalf of the customers.

Q So you're not proposing that the REGFs could be sold by the developer to other entities besides the subscribers are you?

A My testimony was silent to that. What I'm saying today is we are fine with them being retired.

Q Okay. Thank you. Page 21 of your

rebuttal testimony discusses payback periods as a metric for evaluation. There's a Q&A on page 21 that addresses this issue. Do you see that?

A Correct.

Q And starting on line 9 you state:

> Payback period, however, may not be a relevant metric for community solar projects using CCSA's proposed Net Value Billing Tariff.

Do you agree that a payback period could be calculated for the developer of a community solar project?

A I agree with that.

Q Could a discounted payback metric evaluate when the present value of subscription fees plus any MTC exceeds the present value of ownership and operating costs?

A I apologize, Mr. Freedman. Could you restate that just maybe a little bit slower?

Q Sure. Could a discounted payback metric evaluate when the present value of subscription fees and any MTC revenues exceeds the present value of ownership and operating costs?

A I agree it could. I think one of the elements of our tariff that is in contrast to others is a substantial amount of risk particularly with LMPs being floating. And also even though many of the values are contrasted effectively for the term of the tariff, from year to year the ACC is updated. The value available to new projects qualifying for the program changes.

So I think the challenge of doing that exercise would be differing assumptions of forward price guards.

Q When you say "LMPs," you mean Locational Marginal Prices?

A Yes. I should clarify our proposal's normal prices. But that was my intent, yes.

Q And are you assuming that none of the projects described in your proposal would involve shared ownership by the subscribers?

A Our tariff is amenable to that. We don't -- there are groups in California that want to own their own facilities, put them on site, use them for resiliency. This tariff would facilitate that is that most community solar subscribers want a much lower obligation relationship with the project. Something much more like Netflix where they have a month-to-month subscription and can leave when they want. But our tariff would not foreclose that.

Q And you suggest here in the same paragraph that I referenced you, a scenario where a subscription -- a subscription fee would be 90 percent of the amount of a bill credit. Is that illustrative? Or is that designed to be, sort of, a binding constraint?

A That's illustrative. My general observation is that more competitive community solar markets offer better discounts. So if California has a robust large market, people are going to where possible have an incentive to provide a higher discount.

Just briefly, I used to live in another service territory in Massachusetts where there were limited numbers of community solar projects. The typical offering I would receive is 5 to 7 percent of the bill credit of savings. I moved a little bit west to a more rural part of the state, and my savings offers typically exceed 15 percent. So, you know, this is a commercial term that really varies based on the competitiveness of the market.

Q But it's your expectation that the bill credit -- or the subscription fee, I am sorry, would be denominated as a percentage of the bill credit?

A That requirement of our tariff that is the most common commercial terms today.

Q And you would agree that under your proposal, the exports which would be priced at avoided cost values for energy could fluctuate quite a bit over the course of seasons and years; right?

A Yes.

Q Did this create some uncertainty for the project developer if they're realizing net revenues that are based on the difference between the bill credit and the subscription price?

A It could because one of the reasons why this model, which was populized first in New York where the meter credit's in place, is the bill credit to the customer fluctuates with the value of the generation and therefore the subscription price fluctuates. So the customer never ends up paying more than they would if they weren't a subscriber. But if the value of the bill credit falls, their percentage declines with it.

So I don't think the risk --

there's risk from energy prices for the developer but that subscription assuming the developer or the project owner uses this model of a percentage discount that provides some insulation with both parties.

Q Okay. Thank you, Mr. Smithwood.

MR. FREEDMAN: Those are my questions.

ALJ HYMES: Thank you.

Any redirect?

MR. WIEDMAN: Your Honor, I'll need a moment with my witness, please.

ALJ HYMES: Okay. We'll be off the record.

(Off the record.)

ALJ HYMES: We'll be back on the record.

Mr. Wiedman?

MR. WIEDMAN: I have no redirect, your Honor.

ALJ HYMES: Okay. Thank you.

Mr. Smithwood, you are dismissed. Thank you.

THE WITNESS: Thank you, your Honor.

ALJ HYMES: I would like to go ahead and proceed. We're a little bit behind schedule. But I would like to go ahead and proceed with the cross-examination of Chernick and Wilson.

So let's go off the record.

(Off the record.)

ALJ HYMES: Let's go back on the record.

And next up is the panel of Chernick and Wilson for Small Business Utility Advocates.

PAUL CHERNICK and JOHN WILSON,
called as witnesses by Small Business
Utility Advocates, having previously
been sworn, testified as follows:

ALJ HYMES: Ms. Berrio Hayward.

DIRECT EXAMINATION

BY MS. BERRIO HAYWARD:

Q Yes. Thank you, your Honor.

Hello, Mr. Chernick and Mr. Wilson. So beginning my direct examination with Mr. Chernick.

Can you please state and spell your full name for the record?

WITNESS CHERNICK: Yes. My name is Paul Chernick. I'm the president of Resource Insight Incorporated 5 Water Street Arlington, Massachusetts.

Q Wonderful. Thank you so much. And can you tell us which exhibits you're sponsoring in this proceeding?

A Yes. Mr. Wilson and I are co-sponsoring all of the exhibits marked as

SBUA that would be 1 through 8.
Q Thank you. And just for clarification, is that SBU-01 through SBU-08?
A Excuse me, yes. SBU-01, SBU-02, and so on up to SBU-08.
Q Thank you. And were these exhibits prepared by you in collaboration with Mr. Wilson?
A They were.
Q Thank you. Do you have any changes, corrections, or additions to make at this time?
A No, I don't.
Q And are the facts contained in these exhibits true and correct to the best of your knowledge?
A Yes, they are.
Q And do the opinions expressed in these exhibits present your best professional judgement?
A They do.
Q Thank you very much.
And, Mr. Wilson, can you please state and spell your full name for the record, please?
WITNESS WILSON: John D. Wilson, J-o-h-n D W-i-l-s-o-n.
Q Thank you. And directing your

attention to Exhibits SBU-01 through SBU-08, were these prepared by you in collaboration with Mr. Paul Chernick?

A They were.

Q And do you have any changes, corrections, or additions to make at this time?

A No. Thank you.

Q And are the facts contained in these exhibits true and correct to the best of your knowledge?

A Yes.

Q And do the opinions expressed in these exhibits present your best professional judgement?

A Yes.

Q Thank you very much.

MS. BERRIO HAYWARD: Your Honor, this panel consisting of Mr. Chernick and Mr. Wilson is now available for cross-examination.

ALJ HYMES: Thank you very much.

And, Mr. Barnes, you may proceed.

MR. BARNES: Your Honor, I'm not on video right now, but I don't believe the Joint IOUs have any cross for this witness. I certainly don't.

ALJ HYMES: I apologize. That is

correct.

Mr. Freedman?

CROSS-EXAMINATION

BY MR. FREEDMAN:

Q Thank you, your Honor. I do have cross for these witnesses.

Good afternoon, Mr. Chernick and Mr. Wilson. I'd like to start by turning you to your direct testimony, page 9. And at the bottom of this page on lines 18 through 20, you state that it is -- you're talking about storage resources in this section, and you state:

> It is also possible to deploy storage resources in a manner that the utility can rely on them for dispatch to address reliability problems both systemwide and locally.

Do you see that?

WITNESS CHERNICK: Yes.

Q And just whoever wants to answer the question is okay. I'm not going to direct the question to either one of you. Is that acceptable?

A Yeah. That will be fine.

(Reporter clarification.)

ALJ HYMES: We'll be off the record.

(Off the record.)

ALJ HYMES: We'll be back on the record.

BY MR. FREEDMAN:

Q How does SBUA propose to deploy storage resources in a manner that the utility can reply upon for dispatch?

WITNESS CHERNICK: Well, there's a number of ways of doing that including contractual arrangements to allow the utility to control the dispatch and pricing signals.

Q And do you offer specific proposals with respect to both of those options in your testimony?

A I don't think we get into that level of detail.

John, am I forgetting anything?

WITNESS WILSON: No. This is John Wilson speaking.

Mr. Freedman, I'd say that we are providing some degree of pricing signals in this proposal. I think that that sentence is a general statement about the value of solar resources, and it is applicable to the entire universe of solar storage resources. Not just behind-the-meter storage resources associated with a net metering generation system.

WITNESS CHERNICK: And specifically storage and solar resources.

Q And to your knowledge, are any behind-the-meter storage resources under the net metering tariff today directly dispatchable by the utility?

A I'm not aware of it one way or the other. I don't know enough about what kind of facilities are covered under the various demand response programs either at the utility or the CAISO level.

Q Okay. Thank you. Let's move to page 31 of your direct testimony where you discuss netting periods. And specifically starting on line 26, you reference a proposal to retain:

> NEM 2.0 netting periods, netting practices, for customers in disadvantaged communities and small business customers.

Do you see that?

A Yes.

Q What are -- can you explain how the current netting periods work under net metering 2.0?

A They are monthly calculations. So that power supplied at one time during the month can be used to offset consumption at another time during the month in the same rate period.

Q Okay. If I were to turn to page -- if you can turn to page 32, where you have a Table 4. And you propose initial and final netting periods by customer category. Are you proposing annual netting periods initially for disadvantaged community customers and small businesses?

A Yes. That's the affect of the monthly netting that's accumulated currently for the year.

Q So you're proposing a longer netting period than applies under net metering 2.0?

A I don't believe that's actually the case. The -- there are payments made for net consumption on a monthly basis. And net exports to the system, I believe, are accumulated for the year with an annual true-up.

John, have I misstated anything there?

WITNESS WILSON: I believe that's correct. The distinction there is the true-up we're proposing shortening that for the residential. All other nonresidential and all systems greater than 1 megawatt to monthly so that there would be no credits carried forward from month-to-month. But the annual would have the credits carried forward.

So the annual is the equivalent to the current net metering system, and the monthly is a slightly modified version of the current net metering system.

WITNESS CHERNICK: The effect of the monthly would be that a customer that created a surplus in the springtime for example, couldn't use that in the summertime to offset their retail load.]

Q And did that mean that any excess on a monthly basis, under your proposal, would be compensated at an avoided cost-based value?

WITNESS WILSON: That's correct. This is John Wilson --

Q And --

A Speaking.

Q And any exports that are netted against imports within the applicable netting period, under your proposal, would receive a retail rate credit. Is that the proposal?

WITNESS CHERNICK: Yes, as is the case now; although, the periods would -- would shorten over time.

Q And you propose to move from annual or monthly to daily netting periods over some transition period. Is that correct?

A That's correct.

Q I looked for a specific timetable in your testimony, and the best I could find was a reference to one or two years after implementation of the NEM successor tariff. Is that a correct representation of your proposal?

WITNESS WILSON: This is John Wilson.

No. That is our expectation as to what would be reasonable for the residential transition, and that was based on some findings related to payback period and cost-effectiveness. But, for the -- all other non-residential and all systems greater than one megawatt category, we don't have a specific estimate as to when that would become appropriate. We would expect the Commission to balance factors relating to further evidence about payback periods and customer adoption within those sectors, and -- or classes of customers, and once those -- once the Commission was satisfied that the market had matured in those markets then would move to daily for those markets, as well.

Q Would you agree that -- well, do you have a specific set of metrics the Commission should apply to make this a transparent calculation, or are you proposing that parties be able to introduce whatever evidence they have on relevant considerations as part of a determination of the transition period?

A I'm happy to take -- go ahead, Mr. Chernick.

WITNESS CHERNICK: Okay. Go -- go ahead, John.

WITNESS WILSON: This is John Wilson speaking.

And I would say that this really brings in the issue of the quality of the metrics overall in this proceeding.

One of the challenges is that, for example, in our evaluation of the commercial customers, using the E3 model, the current rates that are modeled in that -- that are the E3 modeled have -- are not very well differentiated, and don't really reflect marginal costs, so you don't see a strong differentiation; and so that affects a lot of the results in that analysis.

And so one of the reasons we really didn't pin down specific criteria is that there really needs to be a lot more work done on how we're going to actually quantify these evaluations. So we view a lot of these results, in terms of TRC and payback and participant cost test results, as being indicative of -- of numbers, and I think TURN's testimony actually pointed out a lot of this, as well, a lot of questions about sort of methods of calculating different metrics and that sort of thing. So we did not present specific metrics, because I think that would involve presenting the methodology behind calculating that met- -- metric, and also, a lot of the data, and a lot of those things just simply don't exist with the rapid transformation of rate design in California, for example.

Q Do you have an out-year end date by which this transition would need to occur?

A We suggested that it should be complete by 2030, but we didn't posit that as a requirement in our proposal.

Q Would you agree that the annual netting proposal involving existing NEM 2.0-style treatment is a benefit to the customer relevant to a monthly or a daily netting?

WITNESS CHERNICK: Yes. That's -- it

winds up being a higher payment or a lower bill.

Q And you propose that this treatment be provided to all small businesses, regardless of whether they provide particular services to the community?

A Yes. The uptake by small businesses has been quite small, so we're not talking here about a program component that's likely to run amuck, and adding on a -- a layer of -- of further evaluation of the characteristics of the small businesses might very well make the -- the process so cumbersome that it would be impractical.

Q Are you proposing that when this transition occurs for all of the categories of customers you identify that customers would receive an exemption from the new treatment, if they were existing customers, or would you propose that existing customers be transitioned onto the new netting periods?

WITNESS WILSON: Would you restate that question, Mr. Freedman? I may have gotten it slightly twisted.

Q If an existing customer, under your proposal, receives the initial netting period you propose, and the Commission subsequently approves a transition to the shorter netting periods, would that existing customer be required to take the shorter netting periods or would they retain some kind of legacy status under the initial netting period proposal?

A This is John Wilson speaking.

And they would retain the -- they would -- it would be the legacy status approach. I don't think we -- I think our testimony was silent on the length of time that that would be, and that would be at the Commission's discretion.

WITNESS CHERNICK: And one way of looking at that would be if the -- if the Commission finds that the annual netting is no longer necessary for disadvantaged communities or for small business, then because the -- the rates have been working out well enough so that it's highly advantageous to -- to adopt NEM-type metering, and therefore, switching customers over from annual to daily may not be excessively burdensome for them.

On the other hand, if what changes in the future is that the cost of new solar, to new storage falls dramatically, and therefore, the -- the program will continue running and continue growing, as required by the legislation, even with the -- the daily netting, which is less favorable, then the customers who are locked into more expensive equipment might very well be kept on the annual netting for a period of time; but, that's something the Commission would have to decide when we get to that point.

Q Okay. Let's turn to page 34 of your testimony, direct testimony, and line 7 through 10, you state that generation for -- from NEM systems should not be subject to any departing load charges, although non-bypassable charges should continue to be applied to all grid-supplied power, irrespective of exported power used for netting credit. Do you see that?

A Yes.

WITNESS WILSON: Yes.

Q Does this -- does this mean that if a customer imports only ten percent of its consumption on a net basis from the grid, the customer would only pay non-bypassable charges on ten percent of its total consumption?

WITNESS CHERNICK: Not exactly. What it's saying is that if you -- that if a customer exports to the system in some of -- some periods, and imports in other periods, then the imports should include the non-bypassable charges, and should -- and the exports should not be netted against the -- the -- the non-bypassable charges, or the non-bypassable charges should not be netted out. You can net out distribution, you can net out generation, but you can't net out the non-bypassable charges.

Q In other words --

A Is that a useful answer?

(Crosstalk.)

WITNESS WILSON: Excuse me. This is John Wilson.

I'd just also direct you to lines 3 and 4 on page 34 where we say that this -- this is one of the aspects where our proposal does not change the -- this element of NEM 2.0.

Q And in that respect, do you believe that the definition of non-bypassable charges should be limited to the definition that is included in the current NEM 2.0 tariff?

A This is John Wilson.

We're -- we're not recommending any changes to that definition, but if the Commission were to consider those, then, you know, we could take a position at that time.

Q Would you agree that the current

NEM 2.0 tariff does not include all of the charges that are typically characterized as non-bypassable and separate charges on -- as part of the utility rate structure?

WITNESS CHERNICK: Mr. Freedman, I think you're asking us are there charges that are thought of as being non-bypassable for some purposes, but they are bypassable for the current NEM system. Is that what you --

Q I'm asking --

A You're asking us whether that's true?

Q Let me -- let me be more specific.

If the Commission adopts a new securitization non-bypassable charge related to the utilities' proposals for wildfire liability or whatnot, do you think it's reasonable to include that in the definition of non-bypassable charges that would be considered under the netting, or do you think the definition of non-bypassable charges should be static, based on the determination the Commission previously reached in the NEM 2.0 proceeding?

A I don't see any reason why that determination needs to be frozen.

Q And you would agree, wouldn't you, that new non-bypassable charges might be adopted by the Commission in future years?

A Yes. And that's one of the -- the kinds of considerations that caused us to avoid making any prediction as to in what year the transition from monthly to daily or annual to daily netting would be appropriate, because the size of the non-bypassable charges will affect the economics of -- of behind-the- -- the-meter solar and storage.

Q So are you saying that, to the extent that there are larger non-bypassable charges in the future that might be netted as a result of the export compensation, that that could delay the transition to shorter netting periods?

A The Commission might decide that that was appropriate.

Q Do you --

WITNESS WILSON: This is --

Q Do you think it's appropriate?

A This is John Wilson.

Let me elaborate on that point, because one of the key aspects of our proposal is that we are trying to make sure that there's an adequate payback period to ensure the continued development of solar -- behind-the-meter solar, consistent with the state's energy plans, and, you know, we did an estimation that approximately a seven- to nine-year payback period is consistent with continuing that adoption rate. And so if the Commission were to adopt non-bypassable charges or make other changes to rates that would substantially affect that payback period, that would need to be taken into consideration in the application of some of these things like the netting periods.

Q Okay. On pages 35 and 36, at the bottom of page 35, you refer to a credit, on -- on line 24 of page 35, at the applicable full avoided cost rate for the TOU period.

Would -- do you mean something -- when you say, "full avoided cost rate," do you mean something different than, for example, the ACC values that are being used in this proceeding?

A This is John Wilson.

We're committing to the use of the ACC for developing the avoided costs, yes.

Q So you're not proposing a different methodology when you refer to full avoided costs, are you?

A No. There's not -- well, we do make discussion -- we do discuss in our testimony that we think the Commission ought to enhance the avoided costs, such as for resiliency. We don't have specific numbers that we proposed there. So at this time, without the benefit of that, or unless the Commission is able to reach a decision based on the full record of this proceeding on some values there, then it would be just the avoided cost calculator values. But, we would encourage the Commission to look beyond those values to resiliency and perhaps other measures that it would be able to quantify and view as appropriate. So if that were done, that's what we would mean by full avoided cost values in that context, similar to your comments about changes to the non- -- non-bypassable charges. You know, that could be enhanced.

Q Do you think it's appropriate for the Commission to consider those adjustments that you've mentioned in the avoided cost calculator process itself?

A This is John Wilson.

I think that's a -- that's a good place for them to do it. It might also be appropriate for them to make policy determinations in this proceeding, and then resolve the quantities in the avoided cost calculator proceeding.

Q Okay. Thank you. Let's -- let's move to page 48 of your direct testimony. And I want to compare some of the results you have in Table 8 on page 48 with the results in Table 9 on page 49.

And if I understand the difference between these two tables is that you are looking at the year 2023 versus the year 2030. Is that right?

WITNESS CHERNICK: That's correct.

Q And all these analyses, do they use the 2021 ACC values or some other determination for avoided costs?

A They use the 2021 ACC values.

Q And how many years did you use for the analysis? Is it 20 or 25 years, or some other number?

WITNESS WILSON: This is John Wilson.

And I don't recall the exact number. We did not alter the E3 modeling software in that respect. We have a section in our testimony that talks about the adjustments we did make, and that's not one of them.

Q The -- the TRC values that you show for all the technologies under all scenarios increase between the 2023 and the 2030 runs. Why are they -- why are they increasing?

WITNESS CHERNICK: I -- I think one of

the factors is that the avoided costs tend to rise.

WITNESS WILSON: And I believe costs are declining. So it's -- those are pretty much the two elements of the TRC test.

Q And if I were to compare for PG&E, if I'm looking at the 2023 table, the -- the RIM score for the SBUA solar proposal versus NEM 2.0, and it shows the PG&E score is .2 RIM for SBUA, and .11 for NEM 2.

What's driving the difference between the RIM scores between existing NEM and the SBUA solar proposal?

I think you're on mute --

ALJ HYMES: I believe you're on mute.

MR. FREEDMAN: -- Mr. Chernick.

WITNESS WILSON: While Mr. Chernick is working on this, I'll take a shot at that.

I think that that is the effect of -- I believe that -- well, I -- if you'll give me a second here to review this, I'm trying to remember whether this is the monthly netting or the daily netting analysis, because we performed both. And I apologize if that's not clearer here in the heading for that, so if you'll give me just a second to look at the residential summary, which is our Exhibit 4, and I will clarify that.

WITNESS CHERNICK: (Inaudible).

WITNESS WILSON: So the RIM is .13 there, and -- no, it's not the monthly to daily.

So Mr. Chernick, did you get your volume working?

Q Well, let me ask this. Maybe, Mr. Wilson, if you can help me with this one, the TRC scores you show here, am I to understand that, as a general matter, SBUA proposes calculating TRC based on a combination of -- of solar and solar-plus-storage installations on a portfolio basis?

A That is our proposal, is that the -- that the -- that the Commission's perspective on the -- approving this program should be viewed on a total portfolio basis so that you should take the NEM solar-plus-storage results and -- or excuse me, the -- the -- the solar-plus-storage results for the -- for the successor tariff, and combine those with the solar, and interpolate that considering what the anticipated adoption rate is. And again, that's one of the reasons that a lot of the precision in these numbers, I think, needs to be viewed with a grain of salt, because you've got -- you know, as some of the other parties have pointed out, there are a limited number of customers who are on wind, there are many on solar, hopefully in the future, there will be many on solar-plus-storage, and just like energy efficiency programs are viewed on a portfolio basis, where you look at homes with all-electric and some homes that might have natural gas and some homes that might be on solar, you have -- you view the energy efficiency program on a portfolio basis, not on a specific customer fuel source basis. So --

Q Are --

A -- that's kind of why we're going after the portfolio view.

Does that get an answer to your question, Mr. Freedman?

Q Yes. But, specifically, the TRC values you calculate for standalone solar in these tables, does that include a portfolio assumption regarding a breakdown of solar and solar-plus-storage, or are these --

A No.

Q -- TRC values on a standalone basis?

A The TRC values are on a standalone

basis, for simplicity of comparison with other parties. And we don't have specific projections as to adoption rates of solar-plus-storage, so to -- to present a weighted average would be very speculative on our part. It's the Commission's job, I think, in the end to make such speculations.

But, what we would point to is, for -- for instance, in the 2020 -- or excuse me, in the 2030 results, Table 9, if you look at the SBUA solar-plus-storage for SDG&E, and it's 1.28, and then the SDG&E TRC, these are under current rate design assumptions, which I think would -- would -- would potentially be quite different in the future; but, if you sort of average those two together, you come out with roughly one. But, if solar-plus-storage was, say, 75 percent of the market by 2030, then the total number would be substantially higher than one; it would be somewhere around 1.15. So it really depends on, you know, what the market share is for solar-plus-storage versus solar as to what the portfolio number would come out to be.

MS. BERRIO HAYWARD: And your Honor, I'm sorry to interrupt. But, before we continue much further along in questioning, I'm hoping that we can get Mr. Chernick back -- back on-line with us, because he may have some things to contribute to these answers.

ALJ HYMES: Let's go off the record.

(Off the record.)]

ALJ HYMES: Let's be back on the record.

Mr. Freedman, please proceed.

MR. FREEDMAN: Thank you.

Q Prior to our interruption, I was asking about the TRC scores that you modeled. Mr. Wilson explained that -- am I correct that SBUA didn't model a specific mix of expected solar versus solar-plus-storage deployments that might result from your tariff proposal; is that correct?

WITNESS CHERNICK: That's correct. We used specific configurations for the two cases. You were asking, as I recall, about why the SBUA RIM was better than the NEM2 RIM.

Q Yes.

A Was that your question? I think the major driving factor there is that under our proposal, the storage would be able to charge from the grid and, hence, avoid more on-peak energy.

Q I was asking about the stand-alone solar RIM, Mr. Chernick.

WITNESS WILSON: I can take that, Mr. Freedman. This is John Wilson. So the RIM is higher in the SBUA proposal because we have a NEM generation charge included in our proposal, and that would apply to the SBUA solar case but not to the NEM 2.0 solar. There may be other aspects of the proposal that are different that are also affecting that, but I believe that would be the single largest driver of that difference.

Q If I turn to the RIM scores for 2030 under the SBUA solar proposal, for PG&E at least it doesn't change at all. Why is that?

A There you have me. I don't know. It could be just coincidence as to why it doesn't change it at all. It's not surprising that it wouldn't change a lot because the rate structure is the same and everything is escalated together, you know, the NIM generation charge, I believe, follows the Joint IOUs' proposal. In our modeling, we used that for illustrative purposes, and the other components also escalate.

So I think it's not surprising that they're similar, and I think just in the PG&E

case the reason that it's the same is just coincidence. If you look, for instance, at SCE, it's .03 difference, and there's other small differences as you go up and down the chart.

Q Turning to the TRC values, we discussed that the TRC values are lower in the 2023 modeling than in the 2030 deployment scenario. Does this suggest that more early deployment of particularly stand-alone solar compared to more later deployment would result in a lower overall TRC value?

WITNESS CHERNICK: Well, I guess if we could wait until costs fell because other states were increasing their solar penetration and wait until the avoided costs rose and then suddenly install all of the distributed solar that was needed, then that might be a less expensive strategy.

It's not necessarily a practical strategy, but it's something you run into with energy efficiency programs that they tend to be more cost effective in the later years, since avoided costs are usually rising faster than the costs of implementation, but it's not practical to wait and do everything at the last minute.

And in today's situation where we're

looking at the state scrambling to find 5,000 megawatts of capacity for 2023, saying, well, let's slow down development of resources seems a little counterintuitive.

Q Do you think the capacity value of behind-the-meter resources should be included in the avoided cost calculator?

WITNESS WILSON: I believe they are, Mr. Freedman. The avoided cost calculator includes a capacity value, and I think our point is that -- our whole strategy is designed around the concept of shifting the program to emphasize solar-plus-storage as rapidly as possible, and that would address the capacity issues that Mr. Chernick was referring to.

Q Under a proposal where the Commission would look at a weighted TRC score that includes solar and solar-plus-storage as SBUA recommends, would this mean that a successor tariff that produces, for example, much better results for stand-alone solar rather than solar-plus-storage would produce a lower TRC value than a tariff that focused heavily on solar-plus-storage deployment as opposed to stand-alone solar?

WITNESS CHERNICK: I think I may be a little confused about what you mean by your two case there. You're talking about a program that emphasized incentives and encouraged stand-alone solar versus one that emphasized solar and storage.

Q And let me ask the question a different way. Would a successor tariff that only resulted in solar-plus-storage adoption and no stand-alone solar at all produce the best TRC results under your analysis?

A The best ratio, yes.

Q The highest TRC scores under your proposal for how to calculate the TRC on a portfolio basis?

WITNESS WILSON: Yes. This is John Wilson. I think the distinction Mr. Chernick is making is between TRC ratio and the total resource cost value in terms of the net benefit to California in total dollars.

Q One more question on this. You have payback periods shown on both these tables. Are those simple paybacks or discounted paybacks?

A Simple. This is John Wilson. Simple.

Q Thank you. In Table 9 under the 2030 scenario, the SBUA solar-plus-storage paybacks there look in the range of 3.5 to 5.5 years or so, is that right, for the three utilities?

A I'm sorry, which group are you referring to again, please?

Q SBUA solar-plus-storage 2030?

A Oh, thank you. Yes, that's correct.

Q Do you think a residential customer requires a 3.3 to 5.3 year payback in order to invest in the solar-plus-storage system?

A No, we don't.

WITNESS CHERNICK: Well, you'll get more people investing at something on the order of five years than you would at seven years, and we have a table that shows what the national data seems to imply about that. You would get a lot more.

Q How risky are these investments for a participating customer? What's the risk that they wouldn't recover their costs?

A Mr. Freedman, it sounds like you're arguing with somebody that they should invest in solar because it's a good deal and the fact that it may have looked like a good deal to me and may look like a good deal to you and they look like a fairly low-risk deal does not mean that they'll do it, at least not -- and by "they," I mean a particular person. So you'll get some people doing it at a nine-year payback and more at a seven-year and more at a five-year, so the --

Q Okay. But, Mr. Chernick, my question was not the question you're answering. My question was how risky are these investments for the participating customer?

A I think objectively once you get down into the under-seven-year range, you're probably talking about fairly low risk. But, again, convincing a person who is making the decision, if that's the case, and making the decision not just to sign a check and invest money, but to go through the whole process of working with contractor and getting the work done --

Q Okay. I want to keep moving because we're running out of time here. For storage projects, did you incorporate existing rebates that are available to customers under the self-generation incentive program into your modeling?

WITNESS WILSON: No, we did not.

Q So neither under the 2023 or the 2030 scenario?

A No.

Q Would you assume that the availability of those rebates would affect the payback periods under the 2023 proposal?

A We would, and we're aware that those are limited. So that was, you know, by budget and so forth so that's why we didn't consider those.

Q Okay. In your rebuttal testimony -- just a couple more questions and I think we're done here -- page 8 at the very top you're discussing the RIM test, R-I-M test, and you say on line 1, end of that line on page 8, "the RIM test can be used to guide fine-tuning of rate design so long as the changes do not significantly decrease the TRC benefits."

How would the Commission determine whether fine-tuning of rate design would decrease or increase the TRC benefits?

WITNESS CHERNICK: Well, you want to look at whether the -- following the RIM test signals was leading you to make a program whether it's energy efficiency or NEM so unfavorable that participation drops and you lose the benefits.

Q But isn't your TRC test calculation driven really by the ratio of solar adoption versus solar-plus-storage adoption?

WITNESS WILSON: This is John Wilson. I think, again, here we're talking about the difference between the total benefits and the ratios, so if the TRC score was, say, 4.0, but the participation rate was zero, then the total TRC benefits are zero because there's no participants.

So the Commission needs to balance the RIM score with the -- in our opinion -- the payback period in order to ensure that you've got a reasonable payback period so that you continue to attract customers that are required into the NEM program to meet the State's goals for DER penetration.

And I think that's a significant part is interpreting those goals. But once you've made sure that you're going to have a program that's sufficiently attractive to attract those participants, then I think attending to the RIM score in a manner that reduces -- or increases the RIM score as much as possible due to the rate design is feasible.

Mr. Chernick, you may have some further clarifications there. I know I kind of walked through that a little muddily.

WITNESS CHERNICK: It sounded good to me.

Q But under your proposal, there's no difference between one customer or a hundred thousand customers adopting under the TRC test; right? The TRC test doesn't distinguish between different levels of penetration for the same technology?

WITNESS WILSON: Again, you're mixing the score with the total benefits. So the ratio is the score, but the benefits are the benefits minus the costs. And so if you have, you know, a thousand dollars in benefits and a hundred dollars in costs, that's a $900 net benefit, but if you have a hundred million dollars in benefits minus 900,000 in costs, then, you know, you've got a much larger net benefit.

And that's what we're talking about there is that we want to drive the TRC ratio above 1, and then drive the benefits as high as possible so that the state benefits as much as possible from the program.

Q Okay. Let's move to page 29 and 30 of your rebuttal testimony where you discuss the NEM generation charge.

A Sorry, could you repeat that. Which testimony do you want us in?

Q Rebuttal pages 29 to 30.

A Thank you.

Q And you're recommending that the Commission consider adopting a NEM charge generation charge which might also be called a grid benefits charge; is that right?

A Yes, we're not fond of that term, but it is similar in structure to the grid benefits charge that other parties have proposed.

Q And you describe the different components of that structure or different components of the examination the Commission should perform on page 30. You have six items? Do you see that?

WITNESS CHERNICK: Yes.

Q And item one, you describe the scope as the change in transmission, distribution, and generation costs associated with a customer who's served by NEM generation versus a nonNEM customer; right?

A Yes.

Q Do you believe that a fair method for assigning responsibility for embedded transmission, distribution, and generation costs should also be considered?

A Embedded generation costs are generally allocated for these things based on usage, on consumption, on the amount --

Q What about for transmission and distribution?

A My answer would be the same.

Q Meaning that you think that embedded costs should be excluded from the analysis?

A No.

Q Do you believe that in developing the generation charge, you identify changes in these costs, and I want to know whether you believe that embedded costs are also something that could be considered?

A We did not mean to indicate by change that we were talking about a marginal cost allocation. You can certainly start with embedded costs, allocate those based on billing determinants, coincident peak, and feeder peak, and energy use by time period and so on, and come up with an allocation.

If a NEM generator is imposing transmission and distribution or their fair share of the allocated transmission and distribution costs are very similar to a customer without behind-the-meter generation, then they need to somehow pay something extra such as through a generation charge for equity purposes. On the other hand --

Q Okay.

A -- if it's basically whatever you use, whether it's your usage or your usage after NEM, your costs would be allocated the same way, then there's no need for an additional charge.

Q Okay. Thank you. Those are all my questions.

ALJ HYMES: Any redirect?

MS. HAYWARD: May I have a moment with the panel, please, your Honor?

ALJ HYMES: Yes. We'll be off the record.

(Off the record.)

ALJ HYMES: We'll be back on the record.

MS. HAYWARD: Thank you, your Honor. We have no redirect at this time.

ALJ HYMES: Okay. Thank you. At this time, Mr. Chernick and Mr. Wilson, you are both dismissed. Thank you.

At this time I want to take an hour lunch. Everyone, please be back at 2:25 and we'll begin the examination and cross-examination of witness Chhabra. We'll be off the record.

(Off the record.)

(Whereupon, at the hour of 1:25 p.m. a recess was taken until 2:25 p.m.)]

* * * * *

AFTERNOON SESSION - 2:25 P.M.

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ALJ HYMES: With that, we will be on the record.

And Mr. Lindh, you may proceed.

MR. LINDH: Thank you, Judge Hymes. This is Frank Lindh for Natural Resources Defense Council. We call Mohit Chhabra to the stand, please.

MOHIT CHHABRA, called as a witness by Natural Resources Defense Council, having previously attested, testified as follows:

DIRECT EXAMINATION

BY MR. LINDH:

Q Good afternoon, Mr. Chhabra. Could you please state and spell your name for the record.

A Mohit Chhabra, M-o-h-i-t, C-h-h-a-b-r-a.

Q Thank you, Mr. Chhabra. Please state your position with the Natural Resources Defense Council.

A I am a senior scientist with the NRDC.

Q Thank you. Are you sponsoring what has been marked as Exhibit NRD-01, the Opening Testimony of Mohit Chhabra for the Natural Resources Defense Council, dated

June 30, 2021?
A Yes, I am.
Q Thank you. Mr. Chhabra, are you also sponsoring what has been marked as Exhibit NRD-02, the Rebuttal Testimony of NRDC, dated July 16, 2021?
A Yes, I am.
Q Mr. Chhabra, were both of these documents prepared by you or under your direction?
A Yes, they were.
Q Are the factual statements contained in these two documents true and correct to the best of your knowledge and belief?
A Yes.
Q Do the opinions expressed in these documents reflect your best professional judgment?
A Yes, they do.
Q Thank you. Do you have any corrections to make to either of these documents?
A No, I do not.
Q Thank you, Mr. Chhabra.
Your Honor, Mr. Chhabra now is available for cross-examination. Thank you.
ALJ HYMES: Thank you. And first up is

Mr. Lindl, from CALSSA.

MR. LINDL: Thank you, your Honor.

CROSS-EXAMINATION

BY MR. LINDL:

Q Good afternoon, Mr. Chhabra. My name is Tim Lindl. I'm the attorney for the California Solar and Storage Association in this proceeding. It's nice to see you again.

A Good afternoon.

Q Do you have Exhibits NRD-01 and NRD-02 before you today?

A Yes, I do.

Q And do you have exhibits that have been premarked CSA-29, 30, 31, 32, and 34 before you today?

A Yes, I do.

Q And did you have a chance to review those exhibits prior to your testimony today?

A I did.

Q All right. Thank you. I believe I sent this in the e-mail, but I just want to double check that you would have CALSSA opening and direct as well, which is CSA-01 and CSA-02?

A Yes, I do.

Q Okay. Thank you very much. Can we please start on your direct testimony, NRD-01, at page 15. Let me know when you're there.

A I'm here.

Q And at the bottom of this page and going on to the next page, you provide three bullets describing your export compensation rate proposal; correct?

A That is right.

Q The first bullet suggests using a three-year average of avoided costs; correct?

A That is correct.

Q All right. At line 13 you state, "Develop export rate for each hour"; right?

A Yes.

Q Okay. So there would be 8,760 different export rates over the course of the year under NRDC's proposal; correct?

A That is right.

Q Now, NRDC did not include any illustrative export rate as part of its testimony; right?

A NRDC did not. It merely provided that methodology.

Q Okay. Thank you. Do you know what the range of exports might be, say, for a PG&E customer over those 8,760 hours?

A I don't remember the exact range, but I think the average weighted with a solar profile would be around 5 cents.

Q Thank you.
A Yes.
Q In the next bullet, which is actually at the top of page 16, you state, "The export rates should be updated every two years"; right?
A That is right.
Q All right. Do you propose a process for doing so in your testimony?
A Yes. We propose to set the export rates of the avoided cost calculator, so when the avoided cost calculator is updated every two years, that would then give you updated export rates. But it's merely, you know, being on track with what's most recent.
Q Would that be an advice letter filing?
A The avoided costs determined through the relevant proceeding would determine the avoided cost and, if needed, an advice letter could be used. We haven't thought that through. It's basically -- what needs to be done is to align the values with the latest avoided cost value. So whatever procedural what needs to be done, you know, that would need to be done, yes.
Q Okay. And you do not provide any further detail on the export compensation

rates within this testimony; right?

A Just that they would be locked for 10 years for the customers on adoption. And at the end of the 10-year period, they would be locked in for 10 more years to the most recent decided, you know, export rates determined from the avoided cost calculator.

Q Right. And this is that third bullet on 16; right?

A Yes.

Q Okay. And your proposal for the rate structure NEM customers would be required to go on is on pages 16 to 17; right?

A Let me get there. Yes.

Q And on the bottom of page 16, lines 20 to 21, you've explained, "the rates NRD requested E3 use to calculate the cost effectiveness of NRDC's proposal"; right?

A Right.

Q On the next page, you state that NRDC is open to other TOU rate structures; right?

A Yes. And the intent of our proposal, as we've explained in a couple of different places, is that the differential in the TOU consumption needs to be aligned with encouraging electrification and such and grid

needs, yeah.
Q Do you provide any further detail in your testimony on the consumption rates customers would use under NRDC's proposal beyond these few sentences here?
A No. We basically say that we support time-of-use rates for consumption. On lines 20 and 21 of page 16 are illustrative rates that we'd be supportive of.
Q Okay. And on page 18 --
A Yes.
Q I'm looking at lines 11 to 13.
A Uh-huh.
Q There you explain how you asked E3 to model Cal Advocates' proposal as NRDC's solar fee proposal for E3's cost effectiveness analysis; right?
A Yes, sir.
Q All right. So is it fair to say that any of the advantages or drawbacks from Cal Advocates' solar fee proposal would apply to NRDC's proposal as well?
A I'd say that any advantages or drawbacks of having a demand-based charge like a grid benefit charge would apply here, and we basic -- yeah, that's what I would say.

Q Okay. So your proposal is the same as Cal Advocates' proposal for the --

A It is not the same. Our proposal -- we wanted to include a grid benefit charge to add minimum recoup fixed costs of transmission and distribution. We didn't estimate those values. And in my best judgment, I thought that Public Advocates Office proposal managed the values aligned with our intent.]

Q Okay. Thank you.

A Right.

Q Okay. At the bottom of page 18 and the top of page 19, you suggest that NRDC also open to a minimum bill instead of a solar fee; right?

A We are open to it as long as it recoups a customer's cost of service and it's progressive.

Q And do you provide any further detail in your testimony on the mechanics of NRDC's proposed solar fees beyond your answers to Q-20 here?

A We don't have a solar fee. Are you representing -- referencing the Grid Benefits Charge?

Q Yeah.

A Okay. No. We explain that what's

important, because our proposal is conceptual, is that a Grid Benefits Charge be included that at minimum recovers cost of transmission distribution and provides an illustrative value. That's about it.

Q Okay. Would mind please turning to page 20, lines 25 to 30?

A Yes.

Q Okay. And on -- in the middle of this paragraph, line 28, you state:

> NRDC does not propose a specific method to calculate nonbypassable charges.

Right?

A That's right.

Q But you do reserve the right to support others' calculation of nonbypassable charges; right?

A That is right.

Q Do you agree that Cal Advocates' proposal for its solar fee to Grid Benefit Charge purports to include nonbypassable charges within the calculation?

A It includes a couple of nonbypassable charges, not all.

Q Okay. So at this point in time, do you support Cal Advocates' proposal for including nonbypassable charges in the solar

fee, the Grid Benefits Charge?
A My first preference is that nonbypassable charges be recovered on the basis of an estimate of consumption. And we'd be okay with what the Public Advocates have done, you know, that would still recover enough costs. But that wouldn't be my first preference, no.
Q Okay. But E3's modeling that was done did model --
A Mh-hm.
Q -- based on Cal Advocates' approach. Is it fair to say that your preference is not reflected in their cost effectiveness results that they ran?
A I see what you're getting at, sir. No, I don't think so and here is why. Our proposal -- the main point in our proposal is that any successor tariff needs to have a Grid Benefits Charge that at minimum recoups transmission distribution.
And the way to look at the GBC is if -- it's a lot easier to understand the range with the bottom end of the range being transmission and distribution recovery and the upper end being something like what the utility has done where they look at the avoided cost and they try to back out.

And it's -- we didn't have the resources to crunch numbers to determine the exact value between that range. But the Public Advocates' estimate falls within that range. And we thought it would be good as an illustrative calculation of what a proposal like that -- like ours would show.

Q Okay. But the cost effectiveness results in that report currently don't include your preference, which I think was on one side of that range; right?

A I would say it does -- it's illustrative of our preference.

Q Okay.

A Because it falls within that range, sir. You know, if you add the nonbypassable charges to just T&D costs, which is the bottom end of the range like the Public Advocates do, it falls within that range I just described to you.

Q Okay. Can you please take a look at CSA-31. This is a screenshot from NRDC's data template for cost effectiveness model.

A Yes.

Q Okay. And you see the three values there $4.59 for PG&E, $6.33 for SCE, and $7.00 for SDG&E?

A Mh-hm.

Q Okay. So is that your proposal, those numbers?

A That at that time were what the Public Advocates had proposed, and we asked E3 to conduct a calculation for the NRDC proposal with those numbers.

Q Are those numbers now your proposal or no?

A Those numbers are illustrative of our proposal. We don't have a specific proposal for the Grid Benefits Charge.

Q Okay. So it's safe to say that at this point, there is no final proposal for NRDC's Grid Benefits Charge that has numbers associated with it?

A It's fair to say that NRDC would be okay with the Grid Benefits Charge as long as it at minimum recovers transmission and distribution.

Q Okay. All right. Can we go to page 19 of your direct, please, at line 3, there?

A Yes, sir.

Q All right. And you state that a market transition credit is a critical part of the NRDC successor tariff; right?

A Yes.

Q Okay. Did you ever provide in

testimony an illustrative example of the amount of the market transition credit NRDC is proposing?

A Similar. We provided the methodology by which an MTC could be set. We didn't provide an amount.

Q And that methodology is on page 19; right? With the four bullets listed there?

A Yes.

Q Okay. And your methodology for calculating the market transition credit relies on the calculation of a certain payback period of 10 years --

A Mh-hm.

Q -- with the market transition credit given to customers that would otherwise have a greater than 10-year payback period; right?

A Yes. We want the payback period to be 10 years. That's the goal we are seeking.

Q Okay. Thanks. And the way you calculate a cost recovery or payback period is you compare the upfront cost of the system with the benefits of that system. So that --

A Yes.

Q -- payback occurs when customers are no longer in the red on their investment?

A Sure. Payback is the -- period is

at the time in which you recoup all your costs of investment so far, yeah.

Q All right. So the elements of payback are cost of the system on one hand and bill savings of the system on the other hand; right?

A And any incentives you might get at the time of install.

Q Okay. Fair enough.

A Right. Yeah.

Q So let's talk about the cost component of that for just a second. Now, your testimony does not make a specific proposal on how to calculate the cost other than stating on lines 13 and 14 that:

> It should be established using trusted data resources such as National Renewable Energy Labs data.

Right?

A Yes.

Q Okay. If the Commission adopted NRDC's proposal then, it would not be adopting a specific methodology for determining average system installation costs; right?

A It would -- it would have to determine that, yes.

Q Okay. Is Lawrence Berkeley National Labs a source for trusted data?

A Generally. But I would still look at the work they do.

Q Okay. And going down just to the second half of the sentence here looking their on line 14 to 15 you state:

> Average system installation costs for different customer categories should --

I think you say "be."

> Should be adjusted to be forward looking so that it accounts for expected changes in installed cost of these systems.

Right?

A Right. And because the market transition credit would be fixed in our proposed methodology for two to three years as the Commission deems fit, we provide the example.

We think it's fair that the market transition credit be based on what you expect the solar system to cost within that period. So you're not under or overpaying people. You know, if certain costs are supposed to go up in a year or so, you want the market transition credit to account for that; right?

(Inaudible.)

Q What methodology did NRDC propose in its testimony to make that adjustment?

A No, we did not provide a methodology to make that adjustment, yeah.

Q Okay. Do you expect parties might disagree about how to make that adjustment?

A Possibly. But as in any process, the hope is once you establish doing it the first time, you update it accordingly.

Q All right. Given your experience in this docket so far, do you expect there might be controversy around what the quote "expected changes in installed costs of these systems would be"?

A Among the various issues being discussed in this docket, I would consider that should be the less controversial because of the amount of research that goes into solar panel cost.

So your is question that: Is the amount of discussion in this docket around net metering tariff illustrative of the amount of discussion we have, it is --

Q My question is have you seen the different groups of parties in this proceeding agree on anything to date in this case?

A Yeah. And I would contend in my humble opinion that's because we, sort of -- there's certain foundational aspects of the tariff that we don't agree on. The cost of solar panels and systems, there's so much research that goes into it, that seems a lot more surmountable, sir.

Q Fair enough. All right. If NRDC's proposal was adopted, what would be the average system cost for standalone solar?

A If NRDC's proposed methodology was adopted, the Commission would have to determine the average cost. And I think it would have to do that for most other proposals too. Even if it comes to assessing what someone's proposed; right? You have to consider that there might be some discussion there.

Q So you don't agree that some parties have proposed using the Annual Technology Baseline cost, which I think is about $2.34 per watt. And other parties have proposing -- have proposed other values that are higher than that that might reflect more of the costs a solar customer might pay?

A I don't agree or disagree with that. I'm simply stating that these proposed -- that the Commission needs to -- if it were to go down the road of an MTC, establish solar system cost and there's a process to that. Including such as what you explain working through these different estimates to see what's the right one, yeah.

Q And the same would be true of the average system cost for a storage paired solar system?

A I would expect so.

Q Okay. And does NRDC take a position on whether there would be different average system costs for different systems of different sizes -- or for systems with different sizes? Excuse me.

A That's the type of detail that would have to be given thought to where a system cost may not linearly follow. The installed cost might not be able to have a simple dollars per-kW across all the installed. But that's the exact thing that we'd have to think about together.

Q Okay. And on the other side of the equation for payback is bill savings, the customers' benefit. Has NRDC proposed in its testimony how to calculate bill savings for purposes of calculating the 10-year payback?

A Bill savings? I don't understand the question. Because in my opinion and understanding, the bill savings that are being estimated for all proposals, say by the ACC calculation, are based on amount of consumption estimates without solar panel and the red and you put the tariff in with the delta is the bill savings. Is there something more you're looking for there?

Q Let me explain that to you with less technical terms and see if you agree with me. Would bill savings be the value of the avoided kilowatt-hour plus the value of any export?

A The bill savings would be -- what do you mean by "avoided kilowatt-hour"?

Q A kilowatt-hour that the customer instead of buying from the utility receives from its solar system?

A No. The bill savings would simply be -- because tariffs proposed by the PUC vary. That simple formula I don't think can be applied. You really have to look at estimated consumption from a home without a solar system. You add a solar system to that home, that's what a lot of these models do, and you apply the tariff. Because some of these include a Grid Benefits Charge. Some of them don't, which is why, you know, that that simple formula may not work. And the difference between those two scenarios is the bill savings estimate.

Q Okay. Do you agree that in order to calculate bill savings, you need to estimate how much energy the system will produce?

A Yes.

Q Okay. And has NRDC proposed in its testimony a methodology for calculating the differences in the location, orientation, shading, and system design and components when determining how much energy a system would produce?

A No, we have not.

Q Has NRDC put forward the operating mode for storage that you would assume?

A No, we have not.

Q Okay. And how would you convert solar production and storage operation into bill savings?

A How would you convert solar? All bill savings estimates -- let's talk -- are you -- is the question about solar plus storage systems or both separately?

Q Solar plus storage.

A All right. So all estimates of solar plus storage as you charge and discharge pattern of the storage system, so similar you look at a home's energy consumption without solar plus storage and the applicable tariff, so that gives you the baseline; then you model the solar and storage using PVWatts or something similar that all parties have been doing; grid a storage charge and discharge assumption, and there are many in front of the Commission to look at; and you apply the NEM 3.0 successor tariff to scenario B that I'm describing. And the delta between those two is the difference in bill payments and that is bill savings.

Q So you use PVWatts or something similar to help you understand those; is that right?

A That would be one way to do it.

Q Okay. All right. Would you mind looking back at page 19 and looking at lines 22 to 23?

A Yes.

Q All right. There you state:

> The market transition credit, MTC, will need to be updated in order to reflect changes in avoided cost and changes in the cost of going solar.

Correct?

(Phone interruption.)

A Yes. Changes in avoided cost. And a dog was barking. So I didn't get your second part.

ALJ HYMES: Let's go off the record.

(Off the record.)

ALJ HYMES: We'll be back on the record.

Please proceed.

MR. LINDL: Thank you, your Honor.

Q Do you want to repeat your last answer there? I actually didn't hear it. I can ask the question again.

A Could you ask the question again? I've forgotten it.

Q Sure. I was just confirming that your proposal would be for the market transition credit to be updated?

A And you have something else about, you know, some of other words there to comport with dot, dot, dot.

Q Yeah. To reflect -- I was trying to read what you were saying here.

A Yeah. Yeah. And --

Q To reflect the latest solar system costs and the latest avoided cost?

A Right. Because the system cost are changing. Avoided costs may change. And if the Commission's giving incentives, it might want to vary it and note that the Commission might have policy reasons to change the MTC to give larger or smaller incentives for certain reasons. So that should be kept on the table.

Q And that would be changed for customers that had already gone solar under NRDC's proposal; right? Existing --

(Crosstalk.)

A No.

Q They would have their market transition credit? How long would they have that for?

A The market transition credit, sir, is a one-time incentive for installation. So say you're adopting solar and you need $2,000 to get the payback down to 10 years. You would get it at time of install.

Q What would be the process for updating the market transition credit?

A Once you've determined a Grid Benefits Charge and an avoided cost and you have a way of calculating bill savings, you can determine payback. And then the market transition credit gets the payback down to 10 years.

So once all these things have been

established, you merely update the avoided cost values, the system cost, and you recalculate a market transition credit if need be.

Q I understand. I was -- that's the methodology. I was asking about the process. Like, is this another advice letter filing? How would parties and the Commission go about updating the market transition credit?

A Thank you for asking that. That's something I haven't thought through yet and put in my proposal.

Q Okay. In your rebuttal if we can go there just for a brief while NRD-02, page 15?

A Yes.

Q Okay. And at lines 19 to 21 you say:

> Future MTC, market transition credit updates, will simply apply updated values such as avoided costs and distributed generation system install costs and use the methodology approved through this proceeding.

Right?

A Okay. Yeah. That's what it reads.

Q Do you believe that NRDC's

testimony at this point provides sufficient details to avoid controversy on updating the MTC going forward?

A NRDC's testimony is clear that there will be effort needed to develop a methodology. And once fully developed, it is easily updatable going forward.

Q Do you suspect that no party will seek to change the inputs necessary to calculate the market transition credit when it is recalculated every two years?

A I suspect nothing. I don't know. Like, that's the Commission's job to establish a process for updates. And that process could be designed to be simply updatable. I don't suspect much, no.

Q Do you agree that the process would likely be similar to the updates to the Avoided Cost Calculator that currently exists today where parties would be litigating an update to the system cost and benefits necessary to target a 10-year paybacks?

A I disagree with you there because -- I disagree with the question. I'd say no. Because the Avoided Cost Calculator is fairly complex. The MTC intends to use values from these complex processes. My hope is it would be more turnkey.

Q Okay. All right. Can we look at Exhibit CSA-30 again, please?
We haven't looked at this one yet. I'm sorry. But it is Exhibit CSA-30. This should be your response to CALSSA Data Request 7.04?
A Sure. Yes, I'm there.
Q Okay. In the response to the data request in the first sentence you state:

> NRDC did not conduct any calculations to estimate the MTC.

Right?
A That is right.
Q Okay. And then can you please look again at CSA-31. This is that screenshot of the data template you sent to E3.
A Okay.
Q And in the box on the bottom on the right-hand side, you agree it states that:

> NRDC did not propose a specific value for the upfront incentive. We propose and kindly request E3 to estimate an upfront incentive so that the average customer achieves a payback of 10 years.

A Sure, yes. That's what it says.
Q Okay. All right. Then can we look at Exhibit CSA-32, please? And this should

be the pages from the updated cost effectiveness of NEM successor rate proposals?

A Yes.

Q All right. And could you please turn to page 31 in the lower right-hand corner, which would be I believe PDF page 9?

A Yep.

Q Okay. And under NRDC at the top there --

A Mh-hm.

Q -- do you agree that it says:

> As requested by NRDC, E3 calculated the upfront incentives necessary for each customer to reach a 10-year payback. If a payback less than 10 years was achieved without an upfront incentive per customer type, no upfront incentive was added to that customer type.

Is that right?

A Right. That is correct.

Q NRDC didn't pay E3 to do that work; right?

A NRDC did not pay E3 to do that work.

Q Okay. Did you review the E3 model

and its results for the NRDC proposal?
A I did review it.
Q And do you agree that the model results include a market transition credit for most customer categories?
A I don't remember offhand right now. NRDC's -- a lot of NRDC's tariffs, at least initially, came just under 10-year paybacks. So for those it didn't.
Q Did E3's report contain an illustrative dollar per kilowatt number for NRDC's market transition credit from the report itself?
A If it shows up somewhere you see it calculated with, then that would be illustrative.
Q Okay. Can we take another look at that same exhibit? And this time can we go to page 34? So the next page.
A Yes.
Q Okay. In the middle of the page are the payback periods for 2023 non-CARE residential solar; right?
A Yes.
Q And do you agree that those periods are 8.9, 8.0, 5.3, and none of those are 10 years?
A So actually to correct you, sir. I

think this table is a little confusing. The paybacks are 9, 8.9, and 8.

It starts with PG&E; right? And goes --

Q Yeah.

A So they're bolder lines that give me different proposals.

Q I understand. Thank you for correcting me there. Yeah. So 9, 8.9, and 8; is that right?

A Yeah. Right.

Q And none of those are 10; right?

A Those are just below 10, yeah.

Q Yeah. And then for 2023 non-CARE residential solar plus storage --

A What page do you want me to go to?

Q The next one, page 35.

A Okay. They're 7.9 through 6.6.

Q Right. And none of those are 10 either; right?

A They don't reach 10, no.

Q Yeah. So so far no party, including NRDC and E3, have been able to articulate the market transition credit necessary for a 10-year payback period; right?

A I disagree. If the PUC were to adopt the market transition credit for NRDC and were to adopt elements of the proposals from, say, TURN or the Joint IOUs or someone else that have -- or the PAO -- payback period longer than 10 years, they could apply that market transition credit to get the payback down to 10 years.

Q Right. But you specifically asked E3 for this number to be 10. And none of the numbers are 10; right?

A Sure.

Q So given that E3 couldn't get this right in this run, don't you think that updating this number every two years via something like an advice letter process could be pretty challenging?

A I see your point, sir. I don't think the way to frame it is E3 didn't get it right. It's, sort of, a "if statement." If the payback period comes out to be greater than 10 years, then the market transition credit kicks in. Else it doesn't.

And given the assumptions that E3 used to model these, the payback period was never greater than 10 for the market transition credit for these did not kick in.

The idea is the proposal for a policy tool to provide an extra incentive if the Commission would so need and 10 year as something to aim for. But without it, if it's below 10 years, we're all happy; right?

Q So but E3 states:

> It calculated the upfront incentives necessary for each customer to reach a 10-year payback period.

But it didn't. None of these are 10; right?

A Well, because the presumptions that E3 used left the payback period below 10 years. So the MTC kicks in only when the payback period is greater than 10 years.

Q Okay.

A It's a tool to help us out.

Q Can you turn Exhibit CSA-30 now, please? Back to that discovery request.

A Sure.

Q All right.

A Yes.

Q All right. The last sentence of that states:

> The inverter cost should be accounted for when evaluating cost effectiveness from the participant's point of view through the participant cost test when determining the payback.

Right?

A Yes.

Q And the question had asked: Please explain NRDC's understanding of the total cost of an inverter replacement; right?

A Right.

Q Okay. Do you know how much an inverter replacement cost is?]

A It depends on the technology and the size. My guesstimate is upwards of $400, depending on the size and technology.

Q Was that cost included in E3's calculation of the NRDC payback?

A So E3 used the National Renewable Energy Lab ATB. I forget what they stand for right now, because we've been talking about so many intense subjects. But, T&D are technology baseline, and that has a levelized up-front cost that are used from inverter change, is my best understanding --

Q Okay.

A -- cost. So that's included in the E3 analysis for every proposal, they developed that.

Q All right. Lastly, can we turn to Exhibit CSA-29, please? This is an NRDC blog post about rooftop solar in California is ready to take the next step.

A Yes, I am there.
Q All right. And would you mind, please, turning to -- I think it would be PDF page 4. It has the page 3 of 9 in the lower right-hand corner.
A Yes.
Q All right.
A Okay.
Q And in the paragraph on top, at the last sentence --
A The -- you --
(Crosstalk.)
THE WITNESS: -- customers -- so I -- here, NEM customers currently from NEM 2.0 was (inaudible) would see a bill of around 10 to $20 a month --
(Reporter interruption.)
THE WITNESS: Hold on. I'm going to take my headset off and try again, and let me know if it's better, please.
Yes. So this is NEM customers -- most NEM customers would see a total bill of around ten to $20 a month.
BY MR. LINDL:
Q Okay. Now, I didn't really ask you a question, but it's okay that you said that.
I just want to get right that the language in this sentence says, "Most NEM

customers see a total bill of around $10 to $20 a month." Right?
A Right.
Q And you don't say, "NEM 2 customers" in that sentence. Correct?
A I do not.
Q And most of this article discusses the long history of NEM, implying that you are discussing more than just NEM 2 customers. Right?
A That's right.
Q Okay. And does the word "most" in this -- what does the word "most" in this sentence mean?
A Well, my intent here was to show -- and as was admitted, I was also trying to refer to NEM 2.0 customers, that most of them, I would say like close to a simple majority, pay minimal amounts in their monthly bills.
Q So about 50 percent is a simple majority. Right?
A Yeah. You could say it, yeah. Sure.
Q Okay. Would you mind turning to Exhibit CALSSA-01, CSA-01?
A Hold on. I'm there.
Q All right. And do you see Table 13

in the middle there?
A Table 13.
Q Or I'm sorry. I didn't give you a number.
A Uh-huh. Yeah.
Q It's page --
A Yeah, go ahead.
Q Page number 90.
A Page 90. And -- all right. I see. So you're showing me average -- I see what the confusion is, average bill or payment amounts. Correct?
Q Yeah.
A It's around $58 to 46 or whatnot, yeah.
Q Okay. Let me ask you a question, first.
A Yeah.
Q So do you agree that this is entitled "Table 13. Residential Solar Customer Average Monthly Bill Payment," and then there's a footnote 143 there?
A Yes, I will agree.
Q And -- and do you agree that that footnote is to the Joint IOUs' response to CALSSA DR 7.01?
A I would agree with that, too.
Q Okay. And then do you agree that,

for NEM 1 customers, the average bill is between $76 and $104?

A The average bill across all NEM 1 customers is that, correct.

Q And do you agree that the average bill for NEM 2 customers is between $46 and $118?

A That's right, sir.

Q All right. And so the average bill is much higher than the ten to $20 for NEM customers that you state in this blog. Right?

A Yes. And if you give me a chance, when I developed that, I had referenced the lookback study to figure out what most NEM 2.0 customers would pay. And CALSSA's testimony and the IOUs' rebuttal proved that that was a decent estimate for NEM 2.0 customers. The difference here is you're looking at average across all customers; but, there's some really high customers that would skew it.

So, to give an example, I guess, if you look at the average income in the United States, it will be around 60 grand. But, that doesn't mean there's like a lot of people (inaudible) or very much, you know what I mean?

Q Yeah, I get it. Let's go to Exhibit CALSSA-02, then.
A Exhibit CALSSA-02. Actually, if I may, I'd like to show what I'm referencing to --
Q You can.
A -- in the CALSSA exhibit and the IOU rebuttal.
Q You can.
A Okay.
Q Can you go to CALSSA-02, please?
A CALSSA-02. One second. Let me open it.
And that's the rebuttal testimony of Bradley Heavner and Joshua Plaisted. Right?
Q That's right. And I'm going to ask you to go pretty deep into that document, looking at PDF page 108.
A Sure thing. Yeah.
Q When you get there, it should be within Attachment 8, and it's an IOU response to CALSSA data request 9.15. Right?
A Uh-huh.
Q And there are two charts there. One shows the percentage of PG&E NEM 2 customers by average payment --
A Yes.

Q -- and the second shows the Southern California Edison average monthly month -- bill payment for NEM residential customers. Right?
A Correct.
Q Okay. If you look at the PG&E bar or chart on top, can you go to the number --
A Uh-huh.
Q -- just -- just above 20, and you add up the bars that include 20, and to the left of it, would you agree you'd get somewhere between 40 and 45 percent?
A Around that, sure.
Q Okay. And then looking at the Edison chart, each of those bars is five. So if you go -- if you add up the values of the first four bars, to a degree, you would get somewhere between around 34 percent for Southern California Edison customers?
A Yes.
Q Okay. So do you agree that also at the bottom of Edison's chart it states it includes only 78 -- 97.8 of their NEM customers, with customers that average bills above 300 excluded?
A Sure. And these are all NEM -- NEM -- NEM 1.0 and 2.0. Right?
Q I don't think so. I think these

are NEM 2.0 customers.

A So the PG&E chart says, "NEM 2.0." The SCE doesn't say that. It just says, "Average NEM customers," or NEM customers.

Q Okay. So if those customers that are excluded, per the text on the bottom of Southern California Edison's chart, were included, it would reduce --

A Uh-huh.

Q -- the number of customers paying less than $20 by about 2.2 percent. Right?

A I couldn't tell you, you know, by staring at this chart, and I also again note that the (inaudible) customers according to the (inaudible).

Q Sure.

A Yeah.

Q All right. Well, let's go back to that, then. I was hoping we wouldn't have to go this far deep, but let's do it.

All right. Can you please open up Joint IOUs' Exhibit-01?

A Sure. It's open.

Q Okay. And if you go to page 69 --

A Of the PDF or the (inaudible)?

Q I'm sorry. I don't have the PDF number for this one. It's the page, page number 69, or if you search Figure roman numeral 3-16, you -- you'd get there real quick.

A This is SDG&E NEM 2.0 average monthly payment, yes.

Q Right. Okay. And so for that -- the name of that figure is Figure 3-16. Right?

A 3-16, sure. Yeah.

Q And it's on page 69?

A It's on page 69, yes.

Q Okay. Thanks. Can you please go back to CALSSA Exhibit 2, the data request response you were just looking at?

A Sorry. Can you repeat that, which one?

Q The data request response we were just looking at that is PDF page 108 in CALSSA Exhibit 2.

A Sure. I'm there.

Q Okay. So Figure 3-16 that we were just looking at talks about residential NEM 2.0 average monthly payments.

Do you agree that the data request question that you're looking at right now asks for the utilities to reproduce that same chart for PG&E and SCE?

A Yes. Okay. So you're telling me that the SCE is NEM 2.0. All right.

Q Do you agree that that is NEM 2.0?
A If all of that is right, then, yes, you would be right.
Q Okay. Do you agree that 33 percent is less than most?
A Yes.
Q Okay. So do you agree that that statement in your blog is incorrect?
A Unclear, because you're looking at percentage of accounts across all the utilities, and then you have to multiply the total number of accounts in each exhibit. See? So if SDG&E accounts have a lot more, then you want to take that into account.
I will say that my blog estimate was a rough estimate based on the lookback study, and I provided you what that was based on, and it was -- yeah, that's -- that's what I have to say.
Q Right. But, percentage of accounts is all of the accounts. So if it's less than 50 percent, that's the number of accounts on NEM 2. Right?
A But, if SDG&E has a million accounts, but SCE has a thousand accounts, the percentage applies -- you know, the multiplication would be different. So it's hard to say.

Q Okay. Let me ask you: Which service territory among the three IOUs has the least number of customers?

A You mean the least number of NEM customers, NEM 2.0 customers, or least amount of customers?

Q Both.

A I would say that I don't remember who has the least amount of total customers -- NEM customers, but San Diego has the least amount of total customers; but, it has the highest penetration of NEM customers.

Q Great. Would -- we got that, also, on the record. We can -- we can move on here. Okay.

A Uh-huh.

Q At what time did NRDC become a party to this proceeding, around what time?

A I don't remember the exact date, but it would be -- like we were a party to the last proceeding, so I don't remember exact dates that we were formally a party to this.

Q Would it be safe to say October of 2020, when comments were due on the OIR for this case, around that time?

A Sure. Sure. That would be safe, I guess. Right.

Q Between then and now, did you ever ask the IOUs what -- the average bills their NEM customers pay?

A I used the lookback study, as I provided you in my data request, to estimate that. And then, no, I did not go and ask the IOUs again for that.

Q All right. In your public outreach in support of NRDC's position in this case, and during NRDC's campaign to pass AB 1139, did you frequently refer to the idea that most NEM customers today pay ten to $20 per month?

A I did not do specific outreach for AB 1139, so I don't -- I don't agree with that acknowledgment, what that refers to.

Q Okay. What about for NRDC's position in this case?

A No, we did not use that estimate. That was just in that blog, and that's about it.

MR. LINDL: Okay. No further questions, your Honor.

Thank you, Mr. Chhabra.

THE WITNESS: Thank you.

ALJ HYMES: Mr. Lindh, any redirect?

MR. LINDH: Let me take a minute, please, with Mr. Chhabra, your Honor.

ALJ HYMES: Okay.
MR. LINDH: Thank you.
ALJ HYMES: We'll be off the record.
(Off the record.)
ALJ HYMES: We'll be back on the record.
UNIDENTIFIED SPEAKER: Hello?
MR. LINDH: Thank you, your Honor. NRDC has no redirect. Thank you.
ALJ HYMES: Okay. Thank you.
Ms. Armstrong.

CROSS-EXAMINATION

BY MS. ARMSTRONG:

Q Okay. Good afternoon, Mr. Chhabra. My name is Jeanne Armstrong. I'm here on behalf of SEIA and Vote Solar. And Mr. Lindl asked a lot of the questions that I was going to ask, so fortunately for both of us, this can be -- this is going to be pretty brief.

First, I want to follow up on something you said in -- in response to an answer -- well, in an answer that you -- that you gave Mr. Lindl. You said -- well, I think you said that NRC's proposal is that a grid benefits charge would recover, at a minimum, transmission and distribution costs. Is that correct?

A Transmission and distribution cost

of service, yes.

Q Yes. You said, "at a minimum." So does that mean that NRDC is open to having additional costs recovered through a -- a grid benefits charge?

A The other compliment that exists is fixed cost of generation, and we don't have a position on it, as yet, and we are open to seeing any specific proposals. But, that is a trickier bet to figure out, you know, if NEM customers should -- should pay for that. So, for that, we -- you know, we're open to that.

Q Okay. If I could get you to turn to page 9 of your opening testimony, and in particular, line 16, can you tell me when you're there?

A Give me one moment.

Q Okay.

A Opening testimony, page 9, line 16.

Q Correct.

A Yes.

Q Okay. So there, you say, "Growth of distributed generation is guaranteed due to Title 24 requirements, and due to the" continuation -- "the continuance of low-income solar initiatives, such as the Solar on Multifamily Affordable Housing program."

So do you know how many megawatts are anticipated to be installed through the Solar on Multifamily Affordable Housing program?

A I don't have the estimate with me right now.

Q Did you have the estimate in mind when you wrote this testimony?

A No. I know that the program exists. I know its contributions are small in the order of magnitude, but I don't -- you know, I don't remember, offhand, that.

Q Okay. Do you know how many megawatts, on average, are installed annually under either the MASH or SASH program?

A I don't remember, offhand. I usually, you know, reference DG Stat for that, but I don't remember that, offhand. I know that they are probably on the order of megawatts a year, not gigawatts.

Q Okay.

A Yeah.

Q And then looking at line 18 on that same page, you say, "The CEC, on evaluating rooftop solar for Title 24 estimated that the state would see approximately 74,000 new homes with solar in 2020."

Do you know how many megawatts -- you say, "74,000 new homes." Do you -- do you know how many megawatts that translates to?

A If I were to assume five-kilowatt system per home, then that -- that would translate to approximately 370 megawatts per year, approximately, of course, because I'm doing this as -- as we speak.

Q Well, would you take, subject to check, that the CEC used 2kW AC systems required for energy efficiency homes, energy efficient homes?

A And if that would be the case, then it would be 148 megawatts a year, yeah.

Q All right. Thank you. Are you aware that the -- that the new home solar mandate is subject to a -- a cost-effectiveness test?

A I am aware, but it's not clear to me that -- what the bar for passing it is in terms of cost-effectiveness from whose perspective, the customer's, the system's or both.

Q So did you look at the study that the CEC had done by E3 to assess the cost-effectiveness of the solar mandate program?

A They -- I did look at it. They ran various scenarios. One of it was to set the earnings at avoided cost, and in that extreme scenario, which was, I guess, in the proposal the Commission received and that E3 evaluated, it -- the shared proposal that's right up top, you know, with the 26-year payback, in that extreme scenario, it would narrowly fail some kind of loans, and narrowly pass the rest.

Q Do you know what avoided costs the CEC used in that analysis?

A 2019 is my memory, avoided costs.

Q I mean do you remember the actual number, like the actual cents?

A My memory is that the 2018 and 2019 avoided costs in first year averaged to around five to six cents a kilowatt-hour, is my best memory, which is similar to the 2021.

Q Well, would you take, subject to -- would you take, subject to check, that it was actually 11 cents?

A Are you talk -- this is my (inaudible) of first year. Is that for the levelized number, you're giving me, or --

Q I'm taking the -- I'm talking about the number that the CEC used in its analysis, in its cost-effectiveness analysis in 2019.

A So suffice to say that you're saying the CEC is 11 cents, and my understanding is that 11 cents were -- would likely be a levelized. Could you confirm that to me, your quoting that number?

Q Okay. Well, I can't do that now.
But, are you --

A Uh-huh.

Q -- aware that -- I said I'm not able to do that now.

A Okay.

Q It's on -- it's on the record, so we can -- we can do that --

A Yeah.

Q -- another way.
And you are aware that the CEC is -- is statutorily obligated to update the -- its standards periodically, and make any revisions it -- it deems necessary?

A Yes. And I'd like to say this to that, because --

Q No. That's -- that's just -- you are aware that --

MR. LINDH: Your Honor, I would like -- I'd request that Ms. Armstrong --

(Crosstalk.)

MS. ARMSTRONG: I asked him a "Yes" or "No" answer. I asked him a "Yes" or "No" question.

(Crosstalk.)

MS. ARMSTRONG: If you'd like to ask him --

ALJ HYMES: Sustained.

THE WITNESS: Go ahead. Yeah.

MR. LINDH: Thank you, your Honor.

MS. ARMSTRONG: Okay. And -- okay. I'll move off of that.

Q I understand that your proposal is for a -- a market transition credit to reach an approximate ten-year payback. Is that correct?

A If the payback without a market transition credit is greater than ten years, then the market transition credit kicks in to make sure that the payback is at least ten years, yes --

Q So --

A -- for non-low-income customers, yes.

Q Okay. Let me -- so your market transition credit is only applicable to low-income customers?

A Non-low-income. For low-income, we have a separate -- okay.

Q Okay. That's what I thought.

And so you think a ten-year is a

reasonable payback period to sustain the DG market?

A In my opinion, ten years is a reasonable payback period, considering that these systems last for 30 years, yes.

Q Okay. And then you went through a lot of questions with Mr. Lindl about the MTC and how it would be calculated. I'm not going to go back through that.

But, I take it, then, that you have not even done a back-of-the-envelope estimate of the total amount of the subsidy on an annual basis. And when I say, "total," I mean, you know, if you -- let's say you have 100,000 customers that would be eligible for the MTC, what the total amount of the subsidy would be. Do you have any idea?

A All I know is it would be less than the existing subsidy, by a large magnitude.

Q And how do you know that?

A Because the payback period for the current NEM is around five years, so that tells you that you're paying customers more, and then you keep paying them that for the lifetime of the system. So that amount of over-subsidy compound within a market transition credit that's a one-time payment for ten years only, and then you pay close to what you would consider the fair amount. This would be a small fraction.

Q Okay. But, you don't have any idea of what that would be on the annual basis, total?

A It would depend on the avoided -- on the export rate and GBP that the Commission develops, right, which is why it's hard to estimate.

Q Okay. And -- and would the MTC be funded by ratepayers?

A It would be funded by ratepayers, but if a Commission gets a better source, we prefer that. We recognize that currently Commission doesn't have authority, yes.

Q Okay. And do you -- I mean how would a customer access -- access that money, how would they know that they're eligible for an MTC?

A Commission ran many programs that offered incentives distributed either through the utility or third-party providers, and I would expect something similar to happen here.

Q Okay. And if a customer is awarded an MTC to get their payback period down to ten years, as an -- you would -- would you agree that would be the incentive to install solar?

A Would you please repeat that, please?

Q Is your MTC -- do you consider it an -- an incentive for customers to install solar?

A Yes, ma'am.

Q Okay. So if you get an MTC, and you get your payback down to ten years, what is your additional savings? Have you calculated that under -- you know, if you're under a NEM tariff for 20 years, have you calculated the additional savings that the customer would get under the tariff?

A Do you mean the expected bill savings?

Q Yes.

A So E3 estimated that for a proposal that would be like ours. Right? And -- and the answer's in there. But, I would -- it would be exposed to the avoided cost plus some savings on self consumption, because, under the NRDC model that we -- under the -- the NRDC proposal that E3 modeled had, you know, a small grid benefit charge, so there would be some savings there, as well.

Q I'm sorry. You're --

(Crosstalk.)

THE WITNESS: I guess I'm saying that it's publicly available in -- in -- in that Excel spreadsheet and document. I don't remember, offhand.

BY MS. ARMSTRONG:

Q Okay. I just -- one more question.

When you say a small benefit -- a small grid benefits charge, so there would be some savings there, as well, isn't the grid benefits charge a charge? So what's the savings?]

A So if you look at the IOUs' proposal, for example, which calculates the grid benefits charge by backing out from the avoided costs, or the CARE proposal that's all avoided costs, those have much longer payback tiers than something, say, the Public Advocates or NRDC proposes, and that is because relatively the grid benefit charge is smaller than, say, what the IOUs propose.

So, you know, that delta -- because the IOUs' proposal is meant to be what if you didn't have -- what if all solar was valued at avoided costs, you know, what would we get? The fact that our payback tier is less clearly means that our tariff values solar at more than avoided costs on average because -- and that's because of that confidence is there. Yeah.

Q So just to be clear, when you say the smaller grid benefits charge would be a savings, it would be a savings in comparison to, say, the IOUs' proposal?

A It would be two savings in two ways. Customer on a NEM tariff that aligns with NRDC's proposal would save compared to not having solar panels and not having that tariff, and they would also save more compared to them being on the IOU proposal.

Q Thank you. Those are the questions I have.

ALJ HYMES: Any redirect, Mr. Lindh?

MR. LINDH: No, your Honor.

ALJ HYMES: Okay. Thank you.

Mr. Boyd?

MR. BOYD: Yes, your Honor.

ALJ HYMES: I believe you have 10 minutes of questioning?

MR. BOYD: Yes, your Honor.

ALJ HYMES: Please proceed.

CROSS-EXAMINATION

BY MR. BOYD:

Q Hello, Mohit. My name is Michael Boyd. I'm representing myself and Californians for Renewable Energy, CARE. Would you please turn to page 8 of your direct testimony.

A Yes, I'm there.

Q Okay. I'm going to ask you some questions about the Ratepayer Impact Measure Test, which is acronym R-I-M, which I'm just going to call "RIM" so that we don't have to say it all each time. I'm starting at line 9. It says:

> The RIM is the ratio of, (1) benefits a distributed generation facility provides to all customers and (2) the payments made by nonparticipants to NEM customers.

So my first question is about the "benefits of a distributed facility provides to all customers." By that, do you mean their wholesale export of power?

A No. I mean valuing them at the avoided costs.

Q When you say "avoided costs," are you referring to Public Utility Regulatory Policy Act, PURPA, avoided costs or avoided costs as determined by the avoided cost calculator?

A The avoided cost as determined by the California Public Utilities Commission in the avoided cost calculator.

Q Thank you.

A Yeah.

Q The second one is "the payments made by nonparticipants to NEM customers." You're talking about the payments that retail customers are paying for benefits to the NEM customer generators there?

A So that's basically the bill savings that NEM customers receive, which are in effect payments, yeah, from other customers to NEM customers, yeah, because it comes from the same pool of money.

Q But it's a retail -- they pay it through their retail billing; correct?

A At the monthly sort of bill -- at the electric retail rate, yes.

Q Okay. Now, back to the testimony on line 10:

> A RIM greater than 1.0 implies that rates for all customers would decrease because the benefits realized by all customers are greater than the costs incurred by nonparticipants. Conversely, a RIM smaller than 1.0 means that rates increase for all customers due to NEM and that nonparticipants pay more to participants than the benefits

they receive. The magnitude of the RIM test metric; i.e., the amount greater or less than 1.0, indicates the extent to which rates increase or decrease due to NEM. A RIM value of 1 would mean that there is no impact on rates for both participants and nonparticipants.

So my question on that is would that mean -- now, I'm talking about equity between participants and nonparticipants. In your opinion, would a score of 1.0 be the most advantageous for both nonparticipants and participants as concerns equity?

A As it relates to equity on rate impact, yes.

Q Okay. For the nonparticipants, would a RIM score of 1 be more advantageous than a RIM score of less than?

A For nonparticipants, a RIM score greater than 1 will provide more rate benefit to them.

Q Right. But that -- would that be -- if it was greater than 1, would that be disadvantageous to the NEM participant?

A Unclear. Depends on their benefit cost from their point of view, which is something that RIM doesn't consider.

Q Well, payback, I assume, is what we're talking about; right?

A So in the question you posed me, sir, if a participant has a participant cost test greater than 1, then they will be fine, even if the RIM is greater than 1. The relationship isn't always inverse.

Q Oh, okay. Thank you. I appreciate your clarification of that. But in general, if it's less than 1, it's disadvantageous to the nonparticipant, and we -- would you -- then you're basically subsidizing the participants being subsidized by the nonparticipants to some degree if it's less than 1; correct?

A The RIM? Correct.

Q So and the advantage -- some examples that we see are the grid benefit charge and -- what's the one you guys are proposing? I forget what your acronym is for, but basically there's a -- it's a large transition credit. Is that what you do to adjust for that?

A Three things; export at avoided cost, grid benefit charge, and a market transition credit, which is incentive for adoption, yeah.

Q So did you, by any chance, have an opportunity to review some of the other parties' proposals?

A Some, yes.

Q Were you aware that CARE had a RIM score of 1.0?

A I was aware.

Q Thank you. Can we go now to page 26 of your direct testimony.

A Yes, I am there.

Q Starting at line 2, it says:

> Figure 7 presents a comparison of simple payback period and first-year cost shift of the Successor Tariff proposals submitted to the CPUC. It shows that smaller payback periods accompany high-cost shifts and vice-versa. NRDC's proposal endeavors to balance this --

And then we skip from page 26 to 27 starting at 1.

> -- illustrated below. Figure 7 Successor Tariff Comparative Analysis Showing Cost-Shift and Payback of Different Proposals for a 2023 Non-CARE PG&E Residential Customer.

We're looking at Figure 7 now; correct?
A Yes.
Q In Figure 7, you see the name "CARE" there?
A Yes.
Q Would it be your understanding that that's Californians for Renewable Energy and not the other CARE acronym that's been used in our proceeding here?
A Yes. And that figure is straight from the ET analysis, and I assumed they used it in the same manner as well as Californians for Renewable Energy.
Q Okay. So now if you look at the first-year cost shift, it says CARE has zero cost shift.
A Yes.
Q Now, would it be your understanding that you wouldn't need that MTC or the grid benefit charge if there is no first-year cost shift?
A The MTC is needed to make sure that the payback period is reasonable if it's not. So the CARE payback period, according to this figure, is 25 years. So in that place you might need an MTC. I think the key part about this figure is that the parties with

the grid benefit charge and exports at avoided cost have much smaller cost shift than other parties and CARE's proposal, which ET values all at avoided cost has zero cost shift for that reason but also long payback period.

Q I'm just going to ask you an opinion. One of the elements of the CARE proposal is we've separated the wholesale export from the retail import. Do you think that there's an advantage or what do you see as advantages and disadvantages to doing that?

A The advantage of doing that is -- the way I understand it's been analyzed is you're compensating at the avoided costs which are the most accurate estimates available right now of the distributed generation value.

The disadvantage is as analyzed -- now, I'm uncertain whether this is your proposal -- the analysis implies that all solar exports are used there separately and none of this is self-consumed. So that might be, you know, a disadvantage for some.

Q Very good. Now, my final question is -- and this has to do with a little confusion I had -- but on the same page there starting at 7, it says:

NRDC's proposal tries to balance system payback, (participant perspective) with cost-shift (nonparticipant perspective); this attempt at balance still causes cost-shift and should therefore be considered as the upper limit of subsidies to participants at the expense of nonparticipants.

So I have two questions on that last sentence there is -- when you are talking about subsidies there, are you talking again about a retail or a wholesale subsidy?

A I'm talking about any payment in excess of the benefit sustained from distributed generation. So in current NEM, it would be because of the difference between the retail rate and the avoided cost.

Q So are you using avoided cost interchangeably with wholesale?

A No. Avoided cost equals wholesale plus capacity benefit, plus some transmission and distribution benefits, plus climate carbon benefits so it has more than just the wholesale rate.

Q Very good. Okay. Thank you. That

helps. Now, the other question I had was you use this word "upper limit of subsidies," that phrase. So when we're talking about upper limit, if you go up to the table here, I see NRDC is listing $669 first-year cost shift. Is that what you mean by the upper limit?

A Yes, sir.

Q Very good. Now I guess the question is, is that there is still some disadvantage to the nonparticipants in that regard; correct?

A Yes. And that is the dilemma Commission faces. If you want to encourage solar and provide more incentive to comply with statute, how do you balance that with what happens to nonparticipants?

Q And finally, when we were talking about avoided costs, none of those times were you -- you weren't talking about PURPA avoided costs like we're talking about in our proposal; is that true?

A I was talking -- only talking about the California Public Utilities Commissions' avoided costs.

Q Okay. Thank you. That's all my questions.

Thank you, your Honor.

ALJ HYMES: Thank you.

Mr. Lindh, any redirect?

MR. LINDH: No. Thank you, Judge Hymes.

ALJ HYMES: Okay. At this time I want to take a quick break, slightly less than 10 minutes. Everyone please be back by 4 o'clock and we'll be off the record.

(Off the record.)

ALJ HYMES: We'll be back on the record.

Mr. Schwartz, please proceed. And I remind you that you have requested 30 minutes. I'm hoping that perhaps you can shave a minute or two off, but 30 minutes.

MR. SCHWARTZ: Thank you, your Honor. I intend to if at all possible.

CROSS-EXAMINATION

BY MR. SCHWARTZ:

Q Good afternoon, Mr. Chhabra. My name is Ben Schwartz, and I'm representing the Clean Coalition. I would like to ask you a few questions mainly based on Exhibit NRD-02, which is your rebuttal testimony, I believe. The first question is pretty basic.

Exports at near-term hourly avoided costs updated every two years, I believe, is what you propose in your proposal. So my question is does that mean that every major update of the avoided cost calculator would be used?

A (Indecipherable.)

THE REPORTER: Excuse me, Mr. Chhabra. Can you please start again. Your line cut out at the beginning. Thank you.

THE WITNESS: Every major update would be considered, but we didn't specify whether the update would be average, major average, minor. We just said it would be a two-year cadence.

BY MR. SCHWARTZ:

Q Okay. So if, for example, the 2021 avoided cost calculator were used, would that mean that every two years essentially, a minor update would be used or could that change?

A The Commission could determine to change it with good reason.

Q Okay. So your proposal doesn't specify and has no preference?

A We don't have a preference between major update year or minor update year.

Q Okay. Thank you. Now moving to your rebuttal testimony on page 7, lines 4 through 6, and I'll give you a moment to get there. Just let me know when you're ready.

A I am there.

Q You state, quote, "However, these same additional societal benefits are also not currently included when evaluating any other clean energy resources," end quote.

Do you think that the Commission's current method of considering additional societal benefits is correct?

A That's hard to answer because societal benefit cost analysis is very complicated. I would say in my experience working at multiple Commission, the PUC's methodology of including societal cost of benefits is more advanced than most regions. However, the question always remains when the Commission tries to fault for electric ratepayer money, how many societal benefits should they include and why.

Q Okay. So as a follow-up, do you think the Commission needs to better value or include other societal benefits?

A I think that societal benefits are important when evaluating impact for policy. I think one of the main issues that confronts the Commission now is the more societal benefits you include in stuff -- shouldn't say stuff. This is a formal proceeding -- in proposal that impact rates, more proposals will be cost effective than otherwise, which would mean that rates would fund more initiatives.

So where is the line in between keeping electric rates in check and funding societal benefit to electric rates. I feel like that it -- not I feel -- I know that that is one of the foremost challenges that the Commission faces when doing cost effectiveness in this proceeding and beyond.

Q Okay. So just to make it abundantly explicit, in this proceeding, do you believe the Commission has reached the exact balance necessary to make this tariff?

A The Commission has reached a good enough balance by using the avoided cost calculator to value exports and to do a cost effectiveness analyses. Because the Commission may want to consider more societal benefits, NRDC, and I think TURN as well, have proposed a market transition credit, an incentive, that could be used. And hopefully we could figure out a way to fund that through nonratepayer sources as well.

Q Okay. Thank you. Do you believe that all clean energy resources provide the same societal benefits or does it depend where the resource is sited?

A   I would say that it depends on the impact a resource has, which is a function of two things; where it's sited and how it operates. How it operates, meaning if you deflect or reduce power production from polluting resources, then the carbon and air pollution benefits system-wide would be similar, but location could impact other things like transmission and distribution impacts and such.

Q   Thank you. On page 8, lines 1 through 3 of rebuttal testimony.

A   Yes.

Q   You say, quote, "For this proceeding, the CPUC must use the same carbon value for all clean energy technology that reduces carbon emissions," end quote.

Do you mean the value listed in the current avoided cost calculator?

A   So the value in the current avoided cost calculator is the marginal abatement cost of carbon. There is the implied value of Commission policy goals to reduce carbon across the supply and demand side.

Q   Okay. So considering that answer, would you agree that the ACC does not consider the value of reducing localized air pollution through deploying distributed generation?

A The ACC does not include -- so here's why that's hard to answer, Mr. Schwartz, is the GHG adder in the avoided cost calculator is essentially a policy adder; right? So our clean energy policy cost something, what is that value? And a co-benefit of carbon reduction is air pollution reduction. So to the extent those things work together, it is considered to some extent.

Now, there's a separate issue of the societal impacts of carbon and air pollution, and then those would be considered when you're doing a societal cost test, and that value is not included.

Q Okay. Thank you. So, for example, if NEM generation was aggregated through either a virtual power plant or a community microgrid and that is able to obviate the need for a gas-fired power plant, should distributed generation receive a credit for that?

A Currently distributed generation receives a capacity credit. It used to be on the cost of a gas turbine, but it is now at the cost of storage. So to the extent distributed generation obviates the need for capacity, which is the existence of storage or anything cheaper than that, that is currently considered in the avoided cost.

Q Okay. In Footnote 17, on the bottom of the same page, I believe, page 8.

A Yes.

Q You discuss the effect that cap and trade costs had on the greenhouse gas adder for the '21 avoided cost calculator. Did these costs result in a lower greenhouse gas adder?

A So the cap and trade costs, sir, are additives to the greenhouse gas adder so the avoided cost calculator has two separate inputs -- well, three separate inputs for carbon-related impact. One is the GHG adder, which is that policy cost of our climate goals. The second is the cap and trade cost which comes from the California Energy Commission IEPR work, their demand forecasting.

It's a forecast of how much the trading would be in our cap and trade market, and those two are added together separately. So the total impact of GHG is the sum of those two things.

Q So did the lower greenhouse gas adder result in a lower avoided cost to

stand-alone storage?
A All other things kept equal, yes, but that was not the only thing that contributed to avoided cost decreasing.
Q Thank you. And would you reply the same answer to solar-plus-storage as well?
A All other things being kept equal, which means that they've produced in exactly the same amount if you reduce the GHG adder, then the benefit you would see is less.
Q So if the cap and trade costs go up, meaning the costs per metric ton of carbon, how will the avoided cost calculator values change?
A They would increase accordingly.
Q Okay. So the current price for a metric ton of carbon is between $18.80 and $19.04. Would you say that this is a reasonable price?
A The current cap and trade price is reflective of California's cap and trade market, so it's reasonable for that. Is it reasonable for carbon is a separate question.
Q Okay. Thank you. Moving on to the proposed grid benefits charge, is the NRDC proposal to lock in a grid benefits charge for 10 years or will it change annually? I wasn't entirely sure from the proposal you

put forth.

A It wasn't -- it's not going to change -- we didn't specify, which is why you probably didn't -- we don't have a specific proposal to lock it in -- to update it. We do think that the confidence of our tariff, including the GBC and the avoided costs, would be locked in for 10 years for an adopting customer to give certainty. But for new customers, there may be a different GBC.

Q Let me ask this: Cal Advocates, I believe in the errata to their testimony, is now recommending a four-year lock on their grid benefits charge and rates. Is that correct to the best of your understanding?

A I don't remember, but I trust your understanding.

Q Okay. Would you agree with that?

A That's one feasible way of doing it. I don't disagree with that.

Q Okay. Did NRDC consider any other mechanisms for recovering system costs besides the grid benefits charge proposed by Cal Advocates?

A The grid benefits charge is to at minimum recover costs, fixed costs, of transmission and distribution, and that is best expressed as a demand charge. We propose it be scaled for kW. There could be other ways of doing it, like a minimum bill has been presented, but they aren't progressive.

And by that I mean, if there's a minimum bill of $30, say, someone living in a very small home is subject to that minimum bill, as well as someone living in a really large mansion. So you're tariff then is biased towards the large mansion. So for that reason, we want the grid benefit charge to scale with the customer's attributes, and that's why it's on dollar-per-kW demand basis.

Q So when you say it's the best mechanism, do you mean it's the most fair and equitable mechanism?

A All system for mechanisms I valued it, it seemed to be the fairest, yes.

Q Do you also believe that it's the most likely to be passed by the Commission?

A I have many skills. Forecasting what the Commission does isn't one of them. I just want to make my best proposal.

Q Okay. So your answer might be the same to this next question. If it is, that's fine. Do you think the Commission would pass a NEM successor tariff that included transmission and distribution costs in the list of nonbypassable charges?

A As a clarifying question, when you say in the list of nonbypassable charges, because nonbypassable charges are based on consumption, you're basically asserting that T&D charges should be based on consumption as well.

Q In this hypothetical, yes.

A Okay. I don't -- what was your original question, again?

Q So I'll repeat it. Do you think that the Commission would pass a successor tariff that included T&D costs in a list of nonbypassable charges?

A I don't know what the Commission would do.

Q Okay. So are you saying that the mechanism has very little affect on your proposal?

A No. I'm saying that we prefer T&D costs to be recovered on a dollar -- on a demand basis because that's what drives this cost causation. These are demand-based fixed costs. And nonbypassables are typically evaluated on the basis of consumption, and estimated consumption is our preferred way to recover those.]

Q Are you aware that transmission access charges are currently metered based on consumption as a dollar per kilowatt-hour charge?

A That is my understanding, yes.

Q Thank you. Moving on. On page 10, lines 2 through 3, rebuttal testimony.

A I am there.

Q You mentioned quote:

> A Grid Benefits Charge is needed to recoup from NEM customers' the cost the utility company incurs to serve them, and to ensure that these costs are not unfairly borne by other customers.

So let me ask a question to see if the logic is universal there. For projects interconnected to the transmission grid that require grid upgrades, the costs are currently borne by the ratepayers. Would you call that a cost shift?

A Could you define "cost shift"?

Q In the same way that NRDC is describing NEM as a cost shift.

A NRDC is referring to NEM as a cost shift in that costs caused by some customers are recovered from others.

And what was your question again

about the transmission?
Q So in the example of transmission projects, a project that is deployed is not paid for by the developer. It's paid for by the ratepayer. And that seems a lot to me like that is a developer shifting that cost to all ratepayers. Would you agree with that?
A I don't know. Because the cost shift as we refer it is fairness among customers when the CPUC determines that a cost needs to be recovered from a customer.
What you're referring to is a decision point -- first decision point, which is: Should the CPUC even ask customers to pay for transmission?
Q Not exactly. I was just asking if shifting the cost of interconnection upgrades to all customers, a cost shift if it could otherwise be paid by the developer?
A I don't quite understand it because when the CAISO decides to -- cost of interconnection and such, I'm not an expert. I know that the ISO for example only allows upgrades to transmission when it's cost effective.
So if it's cost effective to serve all customers, something's approved, and then

all customers share in the payment of that. So that's why I don't quite understand that.

Q I see. So in that case, the grid benefit charge is similar; right, if you're saying: If it's cost effective, then all customers will share in those costs. And if it's not, it's a cost shift?

A The grid benefit charge -- there are certain costs to serve customers that are fixed. The service that a utility provides a customer, to my best understanding, is the ability to use electricity feasible for the physical constraints of my main block. To the extent possible when I want, where I -- whenever I want at a fixed rate.

To do that, they need to maintain some amount of transmission and distribution infrastructure so that the fixed cost shared among all customers because all customers -- that's the service being provided to all customers.

If a customer stops paying that but still enjoys the benefits of being interconnected and being able to pay on a sunny afternoon in December, have a big Xmas party, then a cost shift happens.

Q Okay. Thank you. So I will just, kind of, clarify and summarize what I'm saying with this statement. The grid benefit charge is intended to charge customers for -- NEM customers for their usage of the grid, and so they are required to pay it?

A For the service --

(Crosstalk.)

A I'm sorry. I didn't mean to speak over you.

Q Right. On the other hand, transmission customers are also interconnected to the grid but are not required to pay those same upgrade costs. Please explain the difference.

MR. LINDH: Your Honor, this is Frank Lindh. I'd like to pose an objection. Because the way the question was phrased said transmission customers don't pay transmission costs. I think he's talking about the generator on other side of that interconnection.

(Crosstalk.)

MR. LINDH: -- ratepayers. Thank you.

ALJ HYMES: Just a reminder to let everyone finish their statements first.

Yes, you may respond.

MR. SCHWARTZ: I agree with Mr. Lindh. I'm happy to rephrase. I will be more concise and clear.

Q So just to restate: A NEM generator -- generating facility is required under the NRDC to pay a grid benefit charge to recoup those fixed costs. Whereas a developer interconnecting a project to the transmission system is not required to pay costs of upgrades. Can you explain what is different between these two situations?

A Okay. With the caveat that I'm uncertain what a interconnecting generator pays for and what they don't. I do know that there are some costs to interconnect; right?

But your larger question is why don't they have a grid benefit charge? So the grid benefit charge is recovered cost of service to customers like you and I who live in homes and use electricity. Because to avail of that service, the grid must be maintained with a certain capacity to service.

I don't know whether that's the case for generators that are interconnecting. And generators interconnect when they're needed to provide a service. They don't interconnect otherwise; right? So that is why our proposal is the way it is that customers -- make sure that all customers can pay their fair share of transmission and distribution fixed cost.

Q Okay. Thank you. Moving on. If a 5-kilowatt system and a 7-kilowatt system both consume 3-kilowatts on site, is their usage of the grid the same?

A Depends on their customer usage profile. Are you talking about net energy metered system?

Q Yes.

A So a customer with a 5-kilowatt versus a 7-kilowatt was the question?

Q Yes.

A That would depend on their usage profiles of the customer (inaudible) demand and so on.

Q So for the sake of the example, both are consuming the same amount of energy on site.

A If their demand is the exact same as well.

Q I guess -- I'm not specifying in this example. The focus is on-site consumption.

A So because NEM systems are sized to meet onsite consumption, I would expect that if someone had a 7-kilowatt system or consumption that's higher than something a 5-kilowatt system would need. Unless someone intentionally just -- I guess I don't -- I can't answer your question without knowing customer consumption profiles. Generally if a customer were to install a solar system to meet their full load, a customer with a higher load would install a larger system. And a customer with a lower load would generally install a lower system.

Q   Right.

(Crosstalk.)

Q   The question then becomes they both are using the same amount of onsite consumption. Is their usage of the grid different?

A   Depends on their peak demand and their usage profile.

Q   But they would still be -- they would still -- so they would be charged a different grid benefit charge in spite of having the same onsite consumption profile?

A   The grid benefit charge is meant to be tied to the customer's peak demand. Customers with more peak demand -- that's what it's meant to replicate.

It's not based -- the recovered fixed cost of demand and if customers have, say, a consumption of -- I guess in your hypothetical, those customers would be charged separate grid benefit charges.

Q Okay. Thank you. So as a followup, you mentioned it's supposed to be tied to peak demand. But if that's the case, then why is the charge based on system size and not directly correlated to peak demand?

A Yeah. That's an assumption I made is it's harder to -- it's simpler to execute it. The assumption is that customers with more demand and more consumption would install bigger systems. So on average, a dollar per kW grid benefit charge scales at that. That's the assumption. Are there certain instances where that may be violated to some extent? Sure. But the expectation is that on average the dollar per kW grid benefit charge scaled with customer consumption.

Q So on average it works with some assumptions. Essentially you're saying it can provide a similar method of calculation. So the question is: Why is it necessary to make assumptions and to use a simple system when there could be an exact way of recouping these costs?

A And what is that exact way?

Q That is not up to me to address. That's, you know, just my question. Why use this mechanism if there could and are other more accurate mechanisms?

A The other -- only other thing I can think of is having separate meters for consumption and export. But I don't think people would like that proposal and using that somehow.

But in the absence of that, because there is enough self consumption and the kilowatt-hours recorded by the meter aren't always reflective of the total electricity consumed by a home and their electric demand that's met. In the absence of those two things, that is the best proposal in my opinion.

Q Okay. Thank you. Should a NEM customer, let's say for example in Edison's service territory, SCE, be charged the same amount in transmission costs as a non-NEM customer in a CCA service territory getting energy that's contracted in Northern California?

A Could you repeat your question?

Q So I will specify and just, kind of, simplify it. Should a customer in Edison's service territory producing energy onsite, a NEM customer, be charged the same amount as a customer receiving renewable energy from let's say San Francisco?

A And where is the renewable energy being produced again?

Q In Northern California. Let's say it's a CCA contract. Should both entities be charged the same amount in transmission prices?

A That's really -- the reason why I'm pausing, Mr. Schwartz, is that I guess electricity travels close to the speed of light. And as long as there's capacity in the line, it will reach places. And it's impossible to track electrons.

Financial contracts aren't the same as following electrons from various places to where it lands. Financial contracts ensure that there's enough production capacity online across the grid given it's constraints.

So that's why it's hard to answer that question. I don't know if there are any incremental costs of an electron traveling at the speed of light across California. And I don't know if you can track electrons traveling that far. The question is -- yeah. That's why I can't answer that.

Q Okay. So for example, are there greater line losses associated with onsite consumption or the travel of electricity over hundreds of miles of transmission lines?

A In the hypothetical, there's one production facility that's hundreds of miles away from the one consumption facility where electricity consumed. There will be line losses, yes.

And to recover those line losses, the production facility will have to do stuff like produce more electricity, and there's a cost to that. So they will bid in higher through the energy market so theirs is less likely to be accepted.

Q Okay. And then the last couple of questions. I'm just about at time. Is it correct to assert that CARE customers will begin paying an equity fee after the initial 10 years?

A No. CARE customers are exempt always.

Q Okay. They will be assessed a grid benefit charge?

A No. They are exempt from both.

Q And is that also just for the initial 10-year period or entirely?

A For the lifetime.

Q Okay. So my final question is how does NRDC expect a customer's bill will change after 10 years both for a non-CARE customer and a CARE customer?

A The expectation of how a bill would change after 10 years is the same whether or not NRDC's proposal is accepted or not. Life happens, things change, and I don't know how to answer that.

Q Okay. Thank you.

MR. SCHWARTZ: That's all the questions I have.

ALJ HYMES: Thank you.

Any redirect?

MR. LINDL: Your Honor, if I can -- if I may, I would like to ask Mr. Chhabra one question based on the dialogue he just had.

ALJ HYMES: Okay.

REDIRECT EXAMINATION

BY MR. LINDH:

Q And that is: Mr. Chhabra, for purposes of this case, how do you define the term "cost shift"?

A Cost of service caused by NEM customers that they should pay for that they aren't paying for are being paid by non-NEM customers that on average tend to be poorer.

Q Okay. Thank you, Mr. Chhabra.

MR. LINDH: And thank you, your Honor.

ALJ HYMES: Okay. Thank you.

Last we have Mr. Stanton.

Please proceed.

CROSS-EXAMINATION

BY MR. STANTON:

Q Good afternoon, Mr. Chhabra. I'm Aaron Stanton on behalf of the Protect Our Communities Foundation. I'm glad to be wrapping up the week with you. And before we begin, I want to thank you for your time today.

If you would, please turn to page 3 of your opening testimony, NRD-01, Figure 1.

A I'm there.

Q Thank you. That figure shows the results of the cost of service test for residential NEM customers in the NEM 2.0 Lookback Study; is that correct?

A That is correct.

Q Do you agree that Verdant properly calculated the cost of service for NEM 2.0 customers?

A I reviewed what was in their report. And I viewed the results as directionally correct. I'm unable to vouch with precision about everything.

Q Okay. Did you provide any comments identifying specific deficiencies or general deficiencies in the cost of service analysis?

A I wasn't involved in that process then if I recollect. I didn't submit any comments unless I'm mistaken. Yeah.

Q Okay. Thank you. I'd like you to turn to page 45 of the NEM 2.0 Lookback Study, which is marked as PCF-15.

A Almost there. Page what?

Q It is page 45. If you're looking at the PDF, it's page 57 of the PDF.

A Thank you, sir. Cost of service analysis.

Q That's right. I'd like you to look at the last five lines of the page. These lines say quote:

> The cost of service includes marginal costs associated with energy generation and capacity, marginal distribution costs, embedded transmission costs, regulatory costs, fixed customer costs, and first-year NEM costs.

In your opinion, is there anything else that cost of service should include?

A None come to mind right now.

Q Okay. I'd like to direct your attention to page 98 of that same document. That's PDF page 110. And this is Table 5-11.

A Yes.

Q Okay. That table shows aggregate bill payments compared to the cost of service pre and post NEM 2.0 installation; is that correct?

A Share of bill payment in excess of cost of service for NEM 2.0, yes.

Q Would you agree that that table shows that as a general rule prior to installation of their solar systems, that NEM 2.0 customers paid amounts close to or greater than their cost of service?

A This is residential or?

Q This question is about both. But I can break it down.

A That's fine.

(Crosstalk.)

A I just want to point out we have a residential proposal. We don't have a (inaudible) proposal. But your observation about the table is right for the year of cost of service analysis that Verdant did because I know that estimates could change from year to year. Yeah.

Q Okay. Thank you. So continuing to look at is this chart. NEM 2.0 residential customers in PG&E's service territory prior to installation of their solar systems in aggregate paid 139 percent of their cost of service; is that correct?

A With the asterisk that when this pays -- pre-NEM bill payments divided by cost of service. I am uncertain whether this refers to only the NEM 2.0 participating customers or that customer class. So I'm uncertain whether the cost of service calculation was done across that whole customer class or only for those hand full of customers.

Q Okay. Thank you for that clarification. And nonresidential NEM customers prior to NEM installation were paying -- and this was in PG&E's service territory -- 189 percent of their cost of service. Is that accurate with the same clarifier that you previously gave to the last question?

A Right. For that year's analysis based on the cost of service scheduled in the PUC processes, yeah. With that caveat, for sure.

Q Thank you. Because payments by these customers were higher than their cost of service, were these customers effectively subsidizing other customers as a class?

A If that were true over the long term, then on average these customers would be likely subsidizing other customers.

Q After installation of NEM systems -- this is still on the same table -- in PG&E's service territory, residential NEM customers pay 18 percent of their cost of service. Is that an accurate reading of this table?

A Yes.

Q Is it your position that this gap between the 18 percent paid and the full cost of service is being made up by other ratepayers?

A The difference in the cost of service pre and post, yes.

Q And is it an apparent difference in the cost of service pre and post what you would consider to be the cost shift to customers who do not participate in NEM?

A I don't know the answer to that because I need to go through the cost of service analysis again and compare that with -- because the cost shift, specifically the number, when I refer to it are the results of the RIM analysis.

Q Okay.

A Yeah.

Q Let's go back to your testimony. So I'm going to broadly characterize your testimony, and I would like you to tell me if you agree.

In your testimony, you indicate that the failure to pay full cost of service by residential NEM customers results in a cost shift to nonparticipating customers. Is that an accurate characterization?

A Could you repeat that? That wasn't (inaudible).

Q Sure. No problem. I will repeat it. In your testimony, you indicate that the difference between the full cost of service and NEM residential customer payments results in a cost shift to nonparticipating customers; is that correct?

A The cost shift is the difference between solar production valued at avoided cost and solar production compensated at existing NEM 2.0 tariff.

Q Okay. I'd ask you turn to page 3 of your opening testimony, lines 2 through 4. This is NRD-01.

A Yes.

Q Here you state quote:

> The existing NEM tariff overcompensates NEM participants who end up not paying their share of the cost to provide service.

Nonparticipants end up paying for
NEM 2.0 customers' cost of
service.

What did you mean by that?

A Exactly that. That nonparticipants end up paying NEM participants' cost of service. But I would say that doesn't mean that the total cost shift is equal to the cost of service results. That is one component of the cost shift.

Q Let's go to page 6 of your opening testimony, lines 5 to 6.

A Lines 5 and 6.

Q Yeah. So here you assert that quote:

Market forces left alone will not
be enough to deliver distributed
solar to lower-income
Californians.

Is that a correct reading of those lines?

A Right.

Q Would increasing the payback period for a NEM solar installation, all other things being held equal, tend to increase or decrease the attractiveness of NEM solar to a lower-income customer?

A In my opinion, lower-income

customers face barriers for adoption. Especially first-cost barrier, which could include repairing a roof and so on. And also the fact that not all of them tend to be homeowners.

So when we say, "Would decreasing the payback period --"

It would make it more attractive proposition to those who can afford the first cost. So to deliver the systems to lower-income customers, you need a policy mechanism that breaks down that first cost barrier as well. That I would say is more important than just the payback period.

Q All right. Please turn to page 7 of your opening testimony, lines 18 to 23.

A I'm there.

Q Thank you. Quote:

> The shorter the payback period, the more beneficial a NEM tariff is to a NEM participant. The payback period is a metric frequently used to understand how likely a customer is to invest. For example if we assume that a rooftop solar system has a lifetime of at least 25 years, the payback period of less than 25

years results in a PCT greater than one. But an economically conscious customer may want a shorter payback period to be willing to invest in a solar system.

Is that an accurate reading of those lines? In your opinion, is a lower-income customer more likely than a higher-income customer who require loans or other forms of financing in order to install a NEM system?

A Because of the first cost barrier among other things.

Q Just for the record, is that a yes?

A Yes. Because dot, dot, dot, yes. Thank you.

Q Thank you. Would a customer who pays interest on loans to finance a NEM system have a longer or shorter payback period compared to a customer who purchased a system in cash holding all else equal?]

A Yes, because dot, dot, dot. Yeah. Thank you.

Q Okay. Thank you. Thank you.

Would a customer who is paying interest on loans to finance a NEM system have a longer or shorter payback period compared to a customer who purchased a system in cash, holding all else equal?

A Depends on the customer's, I guess, CARE, if they're on, their (inaudible) profiles. But, everything else equal, if someone pays cash, that means they aren't paying interest, and so -- so, yeah, they'll have a lower payback period. I agree.

Q Do you agree that the payback period calculation that included loan interest expenses would more accurately reflect the payback period for many low-income customers?

A I would say that maybe, in general. But, I would just say that as -- if we want to understand the impact on customers that use loans and those that don't, there's certain wealthy customers might decide to take a loan, and invest savings. Right? So just categorize those in two different things, and they'll be different payback periods for customers that do a cash down payment versus customers that take a loan.

Q I'm going to shift gears slightly, but still on the subject of payback periods, in the quote that we -- we discussed earlier, you talked about an economically conscious customer.

For that economically conscious

customer, what would you consider to be a reasonable payback period?

A Our proposal is to infer ten-year payback period. Given that the system lasts for 30 years or more, that's a third of the life. And our proposal is -- the ten years is to balance an incentive with impacts on non-participants. So, you know, that -- that's our proposal.

I haven't -- when you ask that question, I don't know if -- I know of a scientific study that provides like a certain threshold for someone to invest in or not, but that's our going assumption, that a ten-year payback on a 30-year system should be incentive enough.

Q And so, just to probe a little bit more the reasoning behind the ten-year payback period, is -- is there any data that led you to that -- that specific value?

A That was my best estimate, given my experience working mostly in other incentive programs, was a ten-year payback on something that lasts that long should be sufficient. It wasn't database. It was more -- I don't have a specific source of data. That's with my estimate -- estimate.

Q So did you look at -- I'm sorry.

Thank you.

Okay. We're close to the end here, your Honor; just wanted to let you know.

On page 10, lines 18 to 20 of your opening testimony, you state, quote, "Mechanisms that overcome common adoption barriers in DACs, such as mitigating the high first" call of install -- "high first cost of install," excuse me, "or those that don't require high credit scores for financing should be preferred."

In that quote, DAC stands for disadvantaged communities. Is that correct?

A That is correct.

Q Is the equity fund that you proposed intended to be one such mechanism to overcome common adoption barriers?

A That is correct.

Q Did you consider any other such mechanisms for inclusion in NRDC's proposed successor tariff?

A I did, but that was one that rose to the fore.

Q What specific other mechanisms did you consider?

A I was mostly thinking about decreasing the first cost, and also, minimizing cost shift. And when you min- --

want to minimize the cost shift, you want to get add -- accurate as possible for export grade. So that -- that really means that you really need to -- you can't finance it through bills as successfully, if you're trying to -- if you pay for exports of avoided cost, because that would mean lesser bill savings compared to the current NEM 2.0. So I landed at an up-front incentive to install, basically pay down the cost of the system, for lower-income customers.

Q Okay. Did you review Exhibit PCF-66 in preparation for your cross-examination?

A The long slide deck, I went through it, yes.

Q Okay. Let's -- let's go to one particular page of that slide deck, PDF page 38 of PCF-66.

A The one that's titled "Water Upgrades $ave"?

Q Yes, with the dollar sign in place of an "S."

This page discusses water efficiency programs in California that use tariffed on-bill financing. Are you familiar with tariffed on-bill financing, the concept?

A Somewhat.

Q Would you agree that the program disguise -- described on this page allows utilities to install customer-sided improvements with no up-front payments that are then funded through a monthly on-bill charge?

A Yes, with the understanding that the monthly bill savings that customers receive through the action to participate in whatever they install are certain enough, and agree to pay back the install cost of that. Right? That -- that -- in those scenarios, on-bill financing works. So if I were to install something that costs a thousand dollars, and I know I'll get like a hundred-dollar back a year, and that system lasts for 20 years, I know that in ten years I'll be paid back, and then -- in my bill. So -- so, yes, I understand that much about on-bill financing.

Q Okay. Would you agree that the program described on this page, Water Upgrades $ave, is tied to the meter, rather than to the customer, so that the customer pays only while they're a customer at the project location?

A Yes, I agree that that's what it says.

Q Okay. And then, final question, do you think that tariffed on-bill financing could help reduce the barriers for customers in disadvantaged communities to participate in NEM, including by mitigating high cost of installation?

A I don't know, because if the Commission were to adopt one of the many proposals that -- that NEM export that leads to avoided cost, even in NRDC's proposal with the grid benefit charge, you do see the lesser savings than in the NEM 2.0 case. And in that scenario, if you on-bill finance a solar system, it'll take a lot longer to recoup the investment. And then the question is how much is the customer really saving. Sure, they have a solar panel on their roof. But, if the customer isn't going to see decreased bill amounts under a new NEM tariff that are substantial enough to materially improve their lives, is it worth going through a complicated financing program with third-party implementers and sharing profit to achieve that. I don't know the answer to that. Should it be considered? Sure.

Q Okay. All right. Thank you. I think I have -- actually, I can eliminate the uncertainty there. I have no further questions.

A Thank you.

ALJ HYMES: Thank you. Any redirect?

MR. LINDH: No, your Honor. I think that's a wrap, other than questions that you might have. Thank you.

ALJ HYMES: I actually just have one quick question. Let me just bring that up for a second.

So in -- in your opening testimony, you are talking about your grid benefits charge, and you say that NRDC is open to other evidence-based analysis or other mechanisms, like a minimum bill.

Did you either evaluate the minimum bill or any other mechanisms?

THE WITNESS: Your Honor, I thought hardest about the minimum bill, and the reason why that wasn't the top preference is because it's hard to make it progressive. So if you have, say, a minimum bill of $40 that applies to everybody, firstly, that applies to folks from different income classes and different house sizes. Right? And then if smaller homes see a minimum bill of, say, $40 a month, then they're disincentivized. So again, then a NEM policy will encourage people with bigger homes only to install solar. So it was harder to make it progressive. It is more feasible, given Commission's history and how it's done billing in the past in that manner, but it was harder to make it progressive, and sometimes it might not be as accurate, because a minimum bill only kicks in if you convince -- if your end bill is less than that amount, and that doesn't always provide certainty that customers are paying their fair share of grid cost. So it is easier to implement, but it's a lot (inaudible), may not be as accurate, and it's harder to make progressive. But, they're easier to implement things, deserves to be underlined and bolded, for sure.

ALJ HYMES: Okay. Thank you. That's all the questions I have.

And Mr. Lindh, did you have any follow-up?

MR. LINDH: No, thank you, your Honor.

ALJ HYMES: Okay. Thank you.

Mr. Chhabra, you are dismissed. Thank you.

Let's be off the record.

(Off the record.)

ALJ HYMES: We will be back on the record.

At this time, I will entertain any motions for -- well, actually, while we were off the record, I asked parties who would like to provide a motion to enter -- to admit exhibits into the record, and I have a list of names, and I will call upon them one -- one at a time.

Mr. Freedman.

MR. FREEDMAN: Thank you, your Honor. Matt Freedman on behalf of TURN.

We would move to admit the following exhibits into evidence: TRN-01, TRN-02, TRN-03, TRN-04, and TRN-05, all of which are sponsored by TURN witness, Michelle Chait. In addition, we would move to admit Exhibits TRN-13, TRN-14, and TRN-15, which were used yesterday as cross-examination exhibits with SEIA Witnesses Giese and Gallagher.

ALJ HYMES: Thank you. Are there any objections to receiving these documents that Mr. Freedman just stated into the record?

(No response.)

ALJ HYMES: Hearing no objections and seeing no objections, the list of exhibits from TURN that Mr. Freedman just listed are received into the record.

(Exhibit Nos. TRN-01, TRN-02, TRN-03, TRN-04, TRN-05, TRN-13, TRN-14, TRN-15, were received into evidence.)

ALJ HYMES: Mr. Weidman.

MR. WEIDMAN: Thank you, your Honor.

I request that we move CCSA Exhibit CCS-01 and CCS-03, which are the testimony and rebuttal testimony of Brandon Smithwood on behalf of CCSA, respectively, and CCS-02 and CCS-04, which are the rebuttal -- sorry, opening and rebuttal testimony of Mark Fulmer on behalf of CCSA, respectively.

ALJ HYMES: Thank you. Are there any objections to receiving CCS-01 through and including CCS-04 into the record?

(No response.)

ALJ HYMES: Hearing and seeing no objections, CCS-01 through 04 are received into the record. Thank you.

(Exhibit Nos. CCS-01, CCS-02, CCS-03, CCS-04 were received into evidence.)

ALJ HYMES: Mr. Lindl.

MR. LINDL: Thank you, your Honor. Tim Lindl on behalf of the California Solar and Storage Association.

We move to admit Exhibit CSA-26 and CSA-28 into the record, which were cross exhibits for yesterday for Dr. Shirmohammadi, the CalWEA witness, and then we would also move to admit Exhibit CSA-29, 30, 31, 32, and that is it. Those are cross exhibits that were used with NRDC Witness Mohit Chhabra.

ALJ HYMES: Thank you. Are there any objections to receiving the exhibits that Mr. Lindl just listed?

(No response.)

ALJ HYMES: Hearing and seeing no objections, CSA-26, CSA-28, CSA-29, CSA-30, CSA-31, and CSA-32 are received into the record.

(Exhibit Nos. CSA-26, CSA-28, CSA-29, CSA-30, CSA-31, CSA-32 were received into evidence.)

ALJ HYMES: Ms. Armstrong.

MS. ARMSTRONG: Yes. SEIA and Vote Solar would move into the record Exhibit SVS-01, which is the testimony of Sean Gallagher on behalf of SEIA and Vote Solar, and Exhibit SVS-02, which is the testimony of Will Giese on behalf of -- of SEIA and Vote Solar.

ALJ HYMES: Are there any objections to receiving SVS-01 and SVS-02 into the record?

(No response.)

ALJ HYMES: Hearing and seeing no objections, SVS-01 and SVS-02 are received into the record.

(Exhibit Nos. SVS-01, SVS-02 were received into evidence.)

ALJ HYMES: Mr. Lindh.

MR. LINDH: Thank you, your Honor.
On behalf of Natural Resources Defense Council, I would like to move for the admission of Exhibit Number NRD-01, the opening testimony of Mr. Chhabra, and NRD-02, the rebuttal testimony of Mr. Chhabra. Thank you.
ALJ HYMES: Thank you. Are there any objections to receiving NRD-01 and NRD-02 into the record?
(No response.)
ALJ HYMES: Hearing and seeing no objections, NRD-01 and NRD-02 are received into the record.
(Exhibit Nos. NRD-01, NRD-02 were received into evidence.)
ALJ HYMES: Ms. Berrio Hayward.
MS. BERRIO HAYWARD: Thank you, Judge Hymes.
SBUA would like to move to admit the following exhibits into the record: SBU-01, SBU-02, SBU-03, SBU-04, SBU-05, SBU-06, SBU-07, and SBU-08, which consists of the prepared opening testimony and attachments and the prepared rebuttal testimony prepared and sponsored by today's witness panel comprised of Mr. Paul Chernick and Mr. John Wilson.

ALJ HYMES: Thank you. Are there any objections to receiving SBU-01 through and including SBU-08 into the record?

(No response.)

ALJ HYMES: Hearing and seeing no objections, SBU-01 through and including SBU-08 are received into the record.

(Exhibit Nos. SBU-01, SBU-02, SBU-03, SBU-04, SBU-05, SBU-06, SBU-07, SBU-08 were received into evidence.)

MS. BERRIO HAYWARD: Thank you, your Honor.

ALJ HYMES: Ms. Folk.

MS. FOLK: Thank you, your Honor. Ellison Folk on behalf of Protect Our Communities Foundation.

And Protect Our Communities Foundation moves into the record PCF Exhibit 24, PCF Exhibit 25, PCF Exhibit 33, and PCF Exhibit 66, which constitute the opening testimony of Bill Powers and supporting documents. We also have a cross exhibit, which is PCF-66, that was used for the cross of Ms. Chait and Mr. Chhabra, and we would move that into the record.

I understand there was an issue with the labeling of the document, which was originally submitted as a document in support of opening testimony, and if you would prefer, we can relabel it; but, I think we should keep the numbers the same.

ALJ HYMES: I agree.

MS. FOLK: Okay.

ALJ HYMES: Are there any objections to receiving PCF-24, PCF-25, PCF-33, and PCF-62 -- excuse me, 66, into the record?

MS. FOLK: And just to clarify, the PCF-64, as well.

ALJ HYMES: And PCF-64.

(No response.)

ALJ HYMES: Hearing and seeing no objections, PCF-24, PCF-25, PCF-33, PCF-64, and PCF-66 are received into the record.

(Exhibit Nos. PCF-24, PCF-25, PCF-33, PCF-64, PCF-66 were received into evidence.)

ALJ HYMES: Mr. Boyd.

MR. BOYD: Your Honor, myself, the carrier, request admission of CRE-11 into the record.

ALJ HYMES: Thank you. Are there any objections to receiving CRE-11 into the record?

(No response.)

ALJ HYMES: Hearing and seeing no objections, CRE-11 is received into the record.

(Exhibit No. CRE-11 was received into evidence.)

ALJ HYMES: And finally, Mr. Barnes.

MR. BARNES: Thank you, your Honor.

I move into evidence a cross exhibit for Mr. Fulmer identified as Exhibit IOU-14.

ALJ HYMES: Are there any objections to receiving IOU-14 into the record?

(No response.)

ALJ HYMES: Hearing and seeing no objections, IOU-14 is received into the record.

Thank you, Mr. Barnes.

(Exhibit No. IOU-14 was received into evidence.)

ALJ HYMES: All right. At this time, I just want to quickly state that we will be back here Monday morning at 10:00 a.m., but all attendees should be prepared to be here at 9:30. We will begin with Witnesses Wright and McCann, followed by the panel of Gutierrez and Chau. I just want to make sure that everyone is prepared -- or that the panel of Gutierrez and Chau is prepared to go over into Tuesday, August 10th.

Are there any further matters to be addressed? Please raise your hand.

(No response.)

ALJ HYMES: Okay. Seeing no hands, we are adjourned to Monday, August 9th, at 10:00 a.m.

We'll be off the record.

(Whereupon, at the hour of 5:12 p.m., this matter having been continued to 10:00 a.m., August 9, 2021, the Commission then adjourned.)]

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BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE

STATE OF CALIFORNIA

CERTIFICATION OF TRANSCRIPT OF PROCEEDING

I, ANDREA L. ROSS, CERTIFIED SHORTHAND REPORTER NO. 7896, IN AND FOR THE STATE OF CALIFORNIA, DO HEREBY CERTIFY THAT THE PAGES OF THIS TRANSCRIPT PREPARED BY ME COMPRISE A FULL, TRUE, AND CORRECT TRANSCRIPT OF THE TESTIMONY AND PROCEEDINGS HELD IN THIS MATTER ON AUGUST 6, 2021.

I FURTHER CERTIFY THAT I HAVE NO INTEREST IN THE EVENTS OF THE MATTER OR THE OUTCOME OF THE PROCEEDING.

EXECUTED THIS AUGUST 13, 2021.

Andrea L. Ross

ANDREA L. ROSS
CSR NO. 7896

BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE

STATE OF CALIFORNIA

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JASON A. STACEY
CSR NO. 14092

BEFORE THE PUBLIC UTILITIES COMMISSION

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Rebekah L. DeRosa

REBEKAH L. DE ROSA
CSR NO. 8708