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November 10, 2020

VIA ELECTRONIC FILING &
OVERNIGHT MAIL
Mr. Adam Teitzman
Commission Clerk
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, FL 32399-0850

Re: Docket No. 20200176-EI; In re: Petition for a limited proceeding to approve clean energy connection program and tariff and stipulation, by Duke Energy Florida, LLC

Dear Mr. Teitzman:

Pursuant to the Prehearing Order No. PSC-2020-0430-PHO-EI in the above-referenced matter, please find enclosed Walmart Inc.'s ("Walmart") Designation of Cross-Examination Exhibit and Cross-Examination Exhibit Walmart-1. A copy of these documents are also provided on the enclosed CD.

Please contact me if you have any questions concerning this filing.

Sincerely,

/s/ Stephanie U. Eaton
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SUE:sds
Enclosures
cc: Parties of Record

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true and correct copy of the foregoing has been furnished by electronic mail to the following parties this 10th day of November, 2020.

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/s/ Stephanie U. Eaton
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BEFORE THE

FLORIDA PUBLIC SERVICE COMMISSION

In re: Petition for a limited proceeding to approve clean energy connection program and tariff and stipulation, by Duke Energy Florida, LLC.	**: : : :**	**DOCKET NO. 20200176-EI**

WALMART INC.'S DESIGNATION OF CROSS-EXAMINATION EXHIBIT

Walmart Inc. ("Walmart"), pursuant to this Florida Public Service Commission's ("Commission") November 10, 2020, Prehearing Order No. PSC-2020-0430-PHO-EI, designates the following as its Cross-Examination Exhibit for the Hearing for use during Walmart's examination of Karl Rabago, witness for the League of United Latin American Citizens of Florida ("LULAC"):

Cross-Examination Exhibit No.	Short Title
Walmart-1	Transcript of Deposition of Karl Rabago (10/29/20)

A copy of the transcript is being sent on a CD via overnight mail to the Commission, which was also already delivered to the Commission by counsel for Duke Energy Florida, LLC, for its use as a Cross-Examination Exhibit also.

Respectfully submitted this 10th day of November, 2020.

By *<u>/s/Stephanie U. Eaton</u>*

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Counsel to Walmart Inc.

Walmart Inc.'s

Cross-Examination Exhibit

Walmart-1: Deposition of Karl Rabago on October 29, 2020

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

Docket No. 20200176-EI

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DEPOSITION OF: KARL RABAGO, October 29, 2020

In Re: Duke Energy Florida, LLC's Petition for a limited proceeding to approve clean energy connection program and tariff and stipulation

PURSUANT TO NOTICE, the Deposition of KARL RABAGO was taken on behalf of Duke Energy Florida, LLC, on October 29, 2020, at 12:01 p.m., via RemoteDepo, before Jacquelyn R. Gallo, Registered Professional Reporter and Notary Public within Colorado, appearing remotely from Adams County, Colorado.

REMOTE APPEARANCES

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I N D E X

WHEREUPON, the following proceedings were taken pursuant to the Florida Rules of Civil Procedure.

*   *   *   *   *

THE REPORTER: The attorneys participating in this deposition acknowledge that I am not physically present in the deposition room and that I will be reporting this deposition remotely. They further acknowledge that, in lieu of an oath administered in person, the witness will verbally declare his testimony in this matter is under penalty of perjury. The parties and their counsel consent to this arrangement and waive any objections to this manner of reporting. Please indicate your agreement by stating your name and your agreement on the record.

MS. TRIPLETT: Sure, Dianne Triplett for Duke Energy Florida, and I agree.

MR. MARSHALL: Bradley Marshall for the League of United Latin American Citizens of Florida, and we agree.

MR. REHWINKEL: Charles Rehwinkle with the Office of Public Counsel, and we agree.

MR. CAVROS: George Cavros, Southern Alliance For Clean Energy, we agree.

MS. EATON: And Stephanie Eaton for Wal-Mart, and we agree.

MR. MOYLE: Jon Moyle for the Florida Industrial Power Users Group. We would agree on the holding all objections, which I assume is what the pending agreement is.

MS. TRIPLETT: The pending agreement is to the fact that the madame court reporter is not in the room with the witness.

MR. MOYLE: We will agree to that, too.

MR. STILLER: And Shaw Stiller for staff of the Public Service Commission, and we also agree.

KARL RABAGO,

having been first sworn to testify to the whole truth, testified as follows:

(Deponent's reply to oath: "I do.")

THE REPORTER: Okay. Thank you.

MS. TRIPLETT: Okay. So now do you want us to do official appearances on the record?

THE REPORTER: Sure.

MS. TRIPLETT: So this is Dianne Triplett, appearing on behalf of Duke Energy Florida.

MR. MARSHALL: This is Bradley Marshall, with my colleagues, Dominique Burkhardt and Jordan Luebkemann, appearing on behalf of the League of United Latin American Citizens of Florida.

MR. REHWINKEL: This is Charles Rehwinkel with the Florida Office of Public Counsel, appearing on behalf of the customers of Duke Energy.

MR. MOYLE: Jon Moyle with the Florida Industrial Power Users Group, FIPUG, with the Moyle Law Firm, so I am appearing on behalf of my client, FIPUG.

MS. EATON: Stephanie Eaton, I am appearing on behalf of Wal-Mart, Inc.

MR. CAVROS: George Cavros, appearing on behalf of Southern Alliance Clean Energy.

MS. OTTENWELLER: Kate Ottenweller, appearing on behalf of Vote Solar.

MR. STILLER: And Shaw Stiller, appearing on behalf of the staff of the Public Service Commission. I also enter an appearance for Bianca Lherisson and Jennifer Crawford.

MS. TRIPLETT: Enough lawyers? I think that was everyone.

EXAMINATION

BY MS. TRIPLETT:

Q. Okay. Mr. -- well, let me just ask the witness, make sure you're off of mute, and if you could just state your name for the record.

A. My name is Karl Rabago.

Q. Thank you. And just before we get started, because this is obviously a remote deposition, I just wanted to make sure that if you don't hear something that I say because of technology, please ask me to repeat it, I am happy to do so. I have provided some documents that I think you have to your counsel, and I may ask you to reference them. Please, you know, take your time to reference them. I know sometimes if I am asking you to pull something up, it make take a minute to get there to that point, so just let me know if you need time to find what I am asking about.

And, of course, this is not a marathon session. So whenever you need to take a break, you can just let me know, and we can take a break. And I think that those are really the ground rules. Do you have any questions about that?

A. I do not. Thank you.

Q. Okay. Good deal. So Mr. Rabago, by whom or what company were you engaged for this matter?

A. I was engaged by Earthjustice on behalf of LULAC, the League of United Latin American Citizens.

Q. And when did your engagement begin?

A. Oh, now that is a document you didn't ask for. Let me find my file here and get the original contract date. Let's see, make sure I got the right one. Let's see, I signed my part of the contract on the 24th of July of this year. It was countersigned by the firm Earthjustice on that same date, and then finally approved by their vice president of litigation approximately a month later on August 25th.

Q. Thank you. So when did you -- had you started doing work on this case after the July 24th date? Or did you not do work on the case until August 25th?

A. No, no, around the July 24th is when I formally started, you know, doing work on it. I think we were just -- because I had the approval of one of the attorneys, and then we were just waiting for the rest of the paperwork to go through.

Q. Okay. Thank you. And who directed your testimony in this matter?

A. By directed, I think you mean the supervising attorney, that was Bradley Marshall, who is also on this call.

Q. And were you given topics to address or specific directions, or was it just more general, please review Duke Energy's filing?

A. It was not the latter. It was not just like here it is, tell me what do you think. We discussed their interpretation of it. I did a review of the application. We had discussions. The usual process that I follow in these cases is to do that, you look at it and say, well, I see, A, B, and C, yes, well, we're really interested in A and C, not really so much B, I say okay, and we kind of come to a mutual agreement on the issues that I am going to dive into in detail when I actually write my testimony.

Q. Were those conversations reduced to writing?

A. No, they were not, I mean, except to the fact that there is testimony that reflects my expert opinion that is -- that is the ultimate reduction of that process of discussion review, interaction question, you know, that sort of stuff.

Q. Okay. Now, the matter that we're here on regards Duke Energy Florida's Clean Energy Connection Program.

A. Right.

Q. And throughout this deposition, will you understand if I refer to that as the CEC program?

A. Yes, or just the program. I don't think we're probably talking about any other programs in this one.

Q. Perfect, the program works for me, too. Okay. So do you have Duke Energy's notice of deposition duces tecum that is dated October 19, 2020?

A. Yeah, let me get it back up here. Okay. Let me get the PDF up, all right, Notice of Deposition, dated October 19th. I have it in front of me.

Q. Great, thank you. And if you see, if you scroll down to the first page, you were requested to bring certain documents. Do you see that?

A. Yes.

Q. And I know that we have asked various discovery questions and you provided work papers and documents. I just wanted to make sure that you did not bring anything additional to this deposition in response to this duces tecum notice.

A. Did not bring anything additional? I am working on my computer, which contains a lot of files, so they are electronically present with me, but I have provided all of the documents that are -- I believe are directly responsive to the requests reflecting documents that I, you know, referred to, that I used.

Of course, I have been in this business for 30 years. I have written and read, you know, thousands of documents and concepts, so they're all part of my general knowledge. But everything specific, everything relied upon is referenced, cited, or included as appropriate throughout this process.

Q. Thank you. And I just want to make sure as well that the duces tecum refers to drafts of supplemental testimony, that is the third bullet. Can you just confirm that you do not have any -- well, let me ask this. Can you confirm that you are not developing any supplemental testimony regarding the program?

A. No, I am not.

Q. Thank you. So we can set that document aside. You can even close it out if you want.

A. Yay.

Q. So Mr. Rabago, you are the chair of the Center for Resource Solutions; is that right?

A. I am, yes. It's a not-for-profit organization based in California, and I am the chair of the board of directors.

Q. So you anticipated part of my next question. Beyond it being a nonprofit in California, can you just tell me a little bit about what the organization is, what its mission is, what it does?

A. Sure. The Center for Resource Solutions is a 501(c)(3) not-for-profit corporation incorporated in the state of California and operates out of its offices of The Presidio, California, San Francisco.

It has -- I have served as a member of the board from the founding of the organization. It involves itself in various activities associated with advancing renewable energy, in particular, voluntary markets for renewable energy. It is best known in the dominant part of the program -- program activity at the CX, CRS as we often say, Center for Resource Solutions, is the administration and operation of the Green-e certification program for voluntary renewable energy products and renewable energy certificates.

It is a national and international trademark program -- or not trademark, but certification program, to be very specific, which, for fees, offers the use of a certification mark attesting to a renewable energy -- voluntary renewable energy program or certificate meeting specific standards and requirements, which are published at the CRS web page and at the Green-e.org web page and have been administered for several years now, gosh, maybe 20. I will have to check exactly how long we have been doing this. How is that?

THE DEPONENT: Am I going too fast for the reporter, too? I probably should slow down when I talk, I am sorry.

THE REPORTER: You can slow down a bit, that'd be great.

THE DEPONENT: Okay.

MS. TRIPLETT: And Madame Court Reporter, I meant to mention that sometimes we use acronyms in our industry, and I am going to try to spell them out and remember, but if at any point you don't know what we're talking about, please interrupt and we can clarify the acronym.

THE REPORTER: Thank you.

Q. (BY MS. TRIPLETT) So would you -- so I think as part of your answer, the Center for Resource Solutions is focused on advancing renewable energy. So do you agree that the CEC program advances renewable energy?

A. Sure, yes.

Q. And would you agree that if the CEC program is denied, there will be less renewable energy offered by DEF as compared to if it is approved?

A. That is hard for me to say. That is for the company to say.

Q. Do you -- okay. I have another line of questions. We will come back to that.

A. And I should say, by the way, I am going to continually refer to the company as I did in my testimony as the shorthand for Duke Energy Florida.

Q. I appreciate that. That makes sense to me. Thank you.

So is the Center for Resource Solutions aware that you are providing testimony in this proceeding?

A. Yes. In fact, I have had a discussion with the executive director and one of the policy directors about some of the aspects of the renewable energy certificate treatment in this program with them. I wanted to check with them on my understanding of how these things worked. That conversation happened after I had submitted my testimony, so it was not part of that, but I did have that conversation.

Q. Did your conversation with -- did you say it was with the executive director?

A. Right, with the policy director.

Q. Did that conversation about the RECs, did it contradict the testimony that you filed with respect to RECs?

A. No.

Q. Okay. I believe you testified that you have -- and I can point you to the reference, but you have a retainer relationship with the Coalition for Community Solar Access; is that right?

A. I do, yes.

Q. And can I call the Coalition for Community Solar Acces CCSA?

A. Sure.

Q. Okay. Thank you. So just tell me a little more about what the retainer relationship with CCSA involves.

A. Primarily it is centered around a project to publish, publicize the results of some in-depth capacity expansion and production cost analysis of the United States grid being performed by a contractor to CCSA called Vibrant Clean Energy, utilizing the Wisdom P model, and it -- well, that is it. It is Why -- I think the title we're using now is Why Local Energy. I don't know the exact title, but it is about, like I say, detailed production costs and capacity expansion modeling of the United States grid through a modeling, and we are publishing and publicizing the results. The results aren't quite published yet. We are in the beta round as we stand.

I will say that I have also performed some services under that retainer agreement. I assisted in the response to the utility proposal to end net metering at FERC brought by an organization called NARA, I think, and I also have been an advisor on some aspects of the recently enacted statute on community shared solar that is -- and rule-making process that is underway in Virginia.

Q. Okay. And do you have an understanding of what CCSA's mission is?

A. I don't know it by heart. I understand them to be a trade association for community solar companies, and they work to, I am sure, advance market opportunities and policy that would favor market opportunities for such businesses. I could look it up but --

Q. That is not necessary.

So when you say it's a trade association, are they -- is CCSA advancing the interests of what you might call nonutility developer companies that install community solar projects?

A. Yeah, I am not specifically knowledgeable of who the membership of CCSA is, but having been on a few calls and stuff, I don't recall any utility people being on the calls. So while I don't know if it is exclusive or does not include them or is intended not to include them, I do not believe it -- I do believe it would meet your description using the word nonutility, but I don't know if that is by design, you know, or by accident or if it's even true. I don't know if there are maybe even utility members, I honestly do not know.

Q. Could I ask you to turn to page 30 of your testimony?

A. Sure.

Q. And specifically --

A. And this would be marked as 30, right, not PDF page?

Q. Yes, marked as 30.
A. Okay.
Q. And specifically lines 16 through 19.
A. Okay. "Finally the company..."
Q. Yes, "...the company should be required to serve as a platform..."
A. Right.
Q. Right. And here, your testimony is that the company should be required to basically allow non-utility competitive community solar program developers to build the solar plants for this program?
A. My recommendation starts with -- in that text that you are citing is that the company should be required to serve as a platform. That is kind of a very specific utility architectural or business model kind of concept in which they are a nondiscriminatory platform to enable all kinds of service providers to provide services that customers want, and that includes, and I said "...and provide billing services at reasonable costs to nonutility --" as I use that -- "...nonutility competitive community solar developers," those who would develop and implement programs, as is done in many other states with community seller programs, and then I said, "...including those sponsored by government bodies such as municipalities,"

yes.

Q. Okay. And I think, as we just talked about, the CCSA advocates for nonutility community solar program developers, right?

A. Yes.

Q. And would you agree that if the Commission accepted this recommendation, that perhaps some of those nonutility solar developers would stand to benefit from these projects?

A. Yes. My work with CCSA, my longstanding positions on utilities as platform providers, which long preceded that engagement, and my testimony in this case are all aligned on that thinking.

Q. Thank you. And I think you mentioned just a minute ago that you are familiar with other states that have community solar programs. And I think in your testimony -- well, let's just go to your testimony so we can be clear.

A. Sure.

Q. So it's on page 18, and specifically lines 5 to 7.

A. Okay. I am there. In the competitive markets, I am familiar with community solar programs, yes.

Q. Let me just read it, "...innovative and just ways to engage all program participants in the economics of low income customer participation."

A. You read that correctly, yes.

Q. So in what states are these competitive markets that you are referencing here? What states are you covering?

A. I haven't done exhaustive research or created an exhaustive list. If I had, of course, it would have been in the documents I provided to you. But off the top of my head, I am thinking of Minnesota, I am thinking of the model that is being pursued in Virginia, and I am thinking about work I have done on community solar programs in, let's see, Connecticut and Massachusetts.

In particular, in mentioning the innovative and just ways to engage program participants, I am referencing the fact that I have done work with Boston Community Capital as an expert witness on proposing modifications to the -- we will call it the Commission Staff Proposal on the SMART tariff redesign for community solar programs. That testimony, of course, was listed in the list of prior testimony that was submitted as an attachment to my testimony.

Q. Okay. Are you aware that some developer-led community solar markets have not been as successful in

helping low income customers to participate?
A. I don't have any specific knowledge about that, but I am generally aware that it is a challenge. As I said, it's sort of something we encountered in the Massachusetts testimony, and in the Massachusetts SMART tariff case -- that may be redundant. The tariff may be the T in SMART. But anyway, I am aware that it is -- that there are several issues. I testified about many of those issues. I should say I co-authored that testimony with another person, Cheryl Musgrove, but -- so I don't take full credit for it. But I am aware that there are challenges to serving low income customers through community solar programs.
Did that answer your question? I am sorry.
Q. Oh, yes, it did, yes.
A. Okay.
Q. And you didn't mention having knowledge about Colorado, but I know you are sitting in Colorado, and so I am going to see if you know anything about Colorado. Are you familiar with the Community Solar Gardens and the implementation of the statute in Colorado and the challenges that Xcel Energy has faced? Does that sound familiar to you?
A. I have only been back here for a little over a year, but I know I am on a waiting list, and it seems

like it's taking forever, but I actually -- I only have the vaguest sense that there have been problems and the personal sense that they can't get these projects developed, but I don't know what other issues have been associated with it. So sorry, I can't share any specific knowledge about that.

Q. That is okay. So do you -- and you may not know this, but let me ask you this way. Would it surprise you to learn that when the Colorado Community Solar program began, they struggled, they being the developer-owned companies, struggled to access the low income customer group and, in fact, entered into a settlement with Xcel where Xcel agreed to take it back because low income -- they were not being as successful and it was inefficient. Would that surprise you?

A. As to the low income portion of the program?

Q. Yes, sir.

A. It would not. I have even advocated in some cases that where -- my advocacy in the New York REV situation that, as a general principle, when markets are not sufficiently developed and tariffs and regulation are not adequate, it may be appropriate to let the incumbent monopoly initially provide those services with an idea towards establishing more sustainable markets. You know, we would call those hard-to-serve customer segments.

And I think I have explicitly taken the position that it may actually be an appropriate use of the monopoly structure to serve hard-to-serve customer segments. And I have also taken the position that, generally speaking, it is problematic when a monopoly with market power is allowed to serve competitive market segments or participate in competitive market segments. So that is the distinction I would make in that regard.

Q. Okay. Thank you. So back to the, again, your preferred method is the developer community solar model with the utility being the billing platform. So under that model, do you -- and correct me if I have mischaracterized that, but I was wondering if you had a recommendation as to what rate customers should pay, you know, for that third-party solar.

A. What rate they should pay for third-party solar? That is a -- no, I do not, I do not. That would be much too case specific a question for me to answer in the context of that general discussion. Do you want to talk about it generally, or are you talking about a number like 6 cents or something?

Q. How about this. I thought you might not be able to answer it, so tell me about how you would go about valuing it if you are setting the rate for a third-party community solar model.

A. A lot of the rate determination for a competitive service provider is, of course, their own calculation as to how much they need to charge in order to pay their financers, you know, the people who lend them money to make the development work and modified by or balanced by how much of a credit they would need to pass along of the credit that they were able to get for injecting the energy in order to make the proposition of subscription viable for the customer and cover all other costs, so a basic, you know, costs and revenues calculation.

That may also include, you know, inner connection, ongoing inner-connection facility-related costs, program-related costs, like billing services, if those are provided by the utility, and, of course, would be impacted by ongoing financial factors like what is commonly called customer churn, customers leaving and replacement customers coming on. So there are a number of factors.

I know the way that I -- it is my understanding that the way that a competitive service provider does that is, like I said, they sort of look at what they need to pay for their cost of money and pay for their project. They look at what they need to pay in order to induce customer participation. They often, like any development project, do that calculation up front, and if it looks viable and if their investors can be -- or lenders can be paid off over a reasonable, acceptable time frame, they will commit the capital necessary to be a program provider. If it doesn't look viable, they won't.

Q. Okay. And I think we have established that you have not done that sort of analysis here because there has never been any sort of competitive solicitation -- there is nothing upon which for you to analyze whether the rate would be different than the one, for example, that my company has submitted as part of the program because we don't have any bids. We don't have that analysis from potential third-party developers, right?

A. Right. My testimony in this case is based on an analysis of the company's data that it provided in various exhibits and in testimony and is primarily focused on the allocation of costs, benefits, and risks associated with the program.

Q. Thank you. And I think part of your testimony regarding this program is also that the true CEC program is not a community solar program, right?

A. Right. Yes, I used that characterization and then tried to explain what I meant by that in further detail in the testimony.

Q. And maybe you've already mentioned it in the states we have talked about before, but just to confirm, do you have a state or list of states that have your preferred or what you would consider a true community solar model?

A. I don't -- I wasn't -- I am not thinking of a specific iconic model, no. As I said in my testimony, I looked at those principles in 2013, IREC Handbook, and my -- and what I learned by looking at the testimony and the application and formed my opinion based on that. Of course, the biggest thing that stands out is we're talking about 750 megawatts of solar, which anybody, you know, sort of -- I believe that, in common understanding, that would look a lot like a utility scale story development project and not a community solar project, 748 megawatts, I guess.

Q. So I think you mentioned earlier that you are familiar with the community solar project in Minnesota; is that right?

A. I am generally aware that they have been very successful.

Q. Okay. And are you aware that their program

allocates 87 percent of the capacity to commercial and industrial customers?
    A.   I -- no, but subject to check, I would take your word for it.
    Q.   Okay. And I know that some of your testimony has focused on the amount of allocation of the CEC program to large commercial customers. And so would you object to -- if you were reviewing, you know, Minnesota's program, would you object to the 87 percent allocation that they have to commercial and industrial customers?
    A.   I can't really say without also knowing whether or not, for example, they required a cost ship or a subsidy from nonparticipant customers as the CEC program does, whether or not the program is limited just to utility constructed facilities as the CEC program is and other factors that also inform my opinion.
    Q.   Okay. So it's not just that the allocation of -- the percentage of allocation of the CEC program to -- let me ask a better question.
          You -- it is not just about the fact that you believe that the amount of allocation to commercial customers for the CEC program is too high. There is other things that you challenge about our program that

lead you to testify that it's not a true community solar program?

A. I think you had the word just in there. So is my testimony based on that one factor alone? No, it is not. It is based on a number of factors. There are problems with that, just simple math. That is sort of the representative nature of it. As I laid out in my testimony, I don't think that is automatically a determinative -- I don't think this is automatically a determinative issue, and I can see sort of, you know, you could start with an equitable distribution and deviate from that to make the economics work. I have gone through that kind of analysis, for example, in the Boston case that I worked on. But -- so short answer, not just.

Q. Okay. Thank you. So you would agree that you have previously provided testimony on behalf of both Vote Solar and SACE in other proceedings, right?

A. Yes.

Q. And you would agree that both Vote Solar and SACE have signed on the stipulation and agree with the CEC program, right?

A. Really? No, yes, I was aware. I am kidding. You have to have some fun, come on. Yes, I was aware. And I know both Katie and George personally, and I have known them in the past as well. Yes, all of that is true.

Q. Now, if my company does not accept your recommendations for redesigning of the program, it is your testimony that the CEC program should be completely denied; is that right?

A. I think my recommendation is it should basically start over. And that recommendation is not to the company, just to be clear. I make my recommendations to the Commission as the decision maker. But if you chose not to accede to my wisdom, then I would recommend that the -- and proposed revisions in line with that, I would recommend the Commission deny the program and send the company back to start over again with the specific recommendations that are included in the conclusion of my testimony.

Q. Okay. And just to be clear, you make this recommendation, even though it means that no low income customers would be able to participate in the CEC program because, of course, there would be no CEC program, right?

A. Well, two things in response to that. Number one, first, it also means they would not be required to start subsidizing the program if they're not participants; and, second of all, what the company chooses to do is -- and put into its application is in the company's hands. I included recommendations as to program designs that the company could employ. And I could step over the fence with a good program, and, personally, I could imagine myself being a support.

Q. And also, again, if the CEC program is not approved, then the local governments who have signed off to participate in the program also would not be able to avail themselves of the program because it would not be in existence, right?

A. Well, right, yes. It does not mean they would not be able to avail themselves of the opportunity to participate in obtaining the benefits of solar energy. And by the way, that applies to everyone, of course. I am not being insensitive here. Low income customers have a hard time participating in solar access. That takes deliberate and positive policy and program initiative by utilities and regulators. And the way the company proposed it is not the only way that community solar access for low income customers can be provided. There are better ways.

I am sorry. I am going to get in trouble with my attorney here, but I will just volunteer. I can't stress enough -- and I will come back to this if I need to, but I will put it out here so you can just sort of know that I can't stress enough how much a deviation this program design is from my 30 years of experience in voluntary program design.

Rate making is not perfect. There is also some risk of -- especially with joint and common costs that some costs of a voluntary program will be -- end up indirectly allocated to nonparticipating customers. But it is -- in my experience, it is -- well, it's not quite a bond bright principle. It certainly relates to a bond bright principle that voluntary programs should be constructed and operated in a way that does not require nonparticipants to provide significant subsidies to the program, and that is the core of my concern. That is the core of -- well, that is the core of my concern and my problem with the CEC program as proposed.

Q. So you mentioned that over your 30 years of experience, you have never seen a program like this. But you would agree that regulatory policy is constantly changing and evolving, right?

A. Yes, yes. And the trend with the falling costs of solar is -- and with the -- with the falling costs of solar, with the rising commitment to corporate sustainability and to municipal climate responsibility has been that large corporations like Wal-Mart and large cities and government entities have committed to and invested in renewable energy without demanding a cross-subsidy from customers who don't participate in that renewable energy development.

And so although this program actually goes against the tide of evolution for the development of renewable energy, I -- you could have actually maybe made a better argument for this program 20 years ago when solar still had very high costs. But -- and, in fact, arguments like that were used to support things like renewable portfolio standards, which benefit everyone with renewable energy that we should have a policy that supports investment. But increasingly today, the trend is that if you want to participate in renewable energy and you are a company or a municipality with taxing power of any means at all, that you can -- you can procure the benefits of it without requiring cost shifts among the customer classes and participants and nonparticipants.

So, yes, I agree with you. Things are evolving. They're just evolving in the exact opposite direction that this proposal brings to the table.

Q. So let's talk about -- and you actually may -- that is why I was flipping through. So I am going to flip ahead to a series of questions because you mentioned large customers having access to renewable energy via other methods. And so I think you mentioned in your testimony -- specifically, it's on page 14, if you wanted to take a look.

A. Okay.

Q. It's -- let me let you get there.

A. Sure. I am here.

Q. Okay. And on lines 8 through 10 here, you indicate that many large corporations are using power purchase agreements or PPAs to get renewable energy.

A. Uh-huh.

Q. Is that one of the things that you were mentioning, that that is a way that large corporations can meet their sustainability goals?

A. It is a way, yes.

Q. And are you aware that third-party PPAs are illegal in Florida?

A. You know, I understand there has been a problem with advancing that kind of competitive opportunity in Florida and that they're currently not an option, soft build purchases remain, REC purchases remain. There are other ways that corporations that are stuck behind an inflexible regulatory or utility environment can still obtain the benefits of participating in renewable energy again without a cross-subsidy.

Q. Let's talk about self build, because I assume self build, you're talking about rooftop solar panels, net metering?

A. Yes, or at a corporate facility, yes, you know, on land or on roofs, yes, behind the meter, if you will.

Q. Do you agree that many large customers lack the sufficient roof space to install enough solar panels to offset a hundred percent of their usage?

A. Yes, and that is why the second thing I mentioned, RECs, is an opportunity.

Q. Okay. Thanks. Let's go back. So I want to go back. I think earlier you had an answer, and I said we will get back to that, so now I want to go back, and it has to do with acceleration of solar. I think that -- well, let me ask you this. Do you agree that the CEC program will bring more solar power onto the system than without the CEC program?

A. Well, I can't go that far because there are other things the company could do, like propose in a ten-year site plan to substantially increase the amount of solar. I think the point I made in my testimony is that the company argues that solar is a cost-effective resource and could help avoid some of the what I would consider overbuilding of gas in the Florida electricity system and the carbon emissions associated with it. So those are -- it is not a binomial distribution of choice, either CEC or solar or CEC and no solar. I should also say this modifies my previous response as well -- not modifies, but amplifies my previous response as well.

I am not saying that the company couldn't come up with a pretty good green power program for corporate and municipal subscribers. Again, the core issue here is that the program they're proposing requires $300 million of subsidy about from nonparticipating providers that it doesn't have to require.

Q. Let me just ask you about that $300 million. That number doesn't sound familiar to me, so what is the basis for that?

A. I think it's 290 -- I think the actual number is 291 million.

Q. And what does that represent? I am sorry. Go ahead.

A. That represents the amount of cost of the program imposed on nonparticipant customers under the program evaluation, the program numbers.

If you will look at Table KRR-2, which relies on numbers extracted from the company's testimony, it shows costs and benefits and shows that the net impact -- participant impacts are $291 million of -- you know, that participants are getting from the program that ultimately are going back to captive non-participating rate payers.

I also testified pretty extensively about the allocation of risks and specifically the risk that is the likelihood that the benefits of what is carbon and avoided gas prices, fuel costs and gas plant construction costs, the risks of likelihood of those was also borne 100 percent by nonparticipating customers, whether they realize it or not, right, that -- those risk, in direct contrast to the fact that participant customers are guaranteed for non-low income customers and escalating solar credit rate.

Q. So I want to go back to the original question. And I appreciate that your answer is that, hey, the company could put as much as solar -- cost-effective solar on the system as it wants. But I want to really focus and see if we can agree that Duke Energy Florida's current plan has a certain amount of build for solar. I think we can walk through the ten-year site plan that you have attached to your testimony, if you would like, but it has a certain amount of solar, and then the Clean Energy Connection program, if approved, accelerates some of that solar.

A. Yes, I understand that and agree that is what it does. It says we're going to bring it online earlier.

As an important caveat, since a hundred percent of RECs are assigned to program participants, there is that line of testimony, and perhaps you wanted to talk about this later, about what is actually left for nonparticipating rate payers when you allocate all of those REC benefits to just a relative few customers.

But, yes, I get the idea that the deal, if you will, being proposed by the company is that they will do more of what they really should do based on their own cost-effectiveness evaluation, and they'll do it only if they get to get a subsidy for a few customers, even though the company's own evaluation says it would be more cost effective to do it for all customers today. But I do get what the proposal is. Once again, it's not the only way to do more solar.

The company could come back and say, hey, we just sharpened our pencils, we just finally figured out that solar is very cost effective and over its lifetime will save more money than it costs, we would be crazy not to build a lot more solar for all of our customers and then offer unsubsidized additional solar to go even deeper, to do some -- what is generally referred to in the business as to provide some additionality through private voluntary market subscription. That is what I am saying is the option, the road not taken by the companies of choice of this approach.

Q. So you mentioned the treatment of the RECs, and I was actually up to that next point.

A. Okay.

Q. So specifically, page 26 of your testimony.

A. I will go there, and I am there.

Q. Thanks. And here, on lines 18 through 20, you assert that the program sets up a moral hazard and a potential violation of federal law.

First, what do you mean there by moral hazard?

A. Well, that a moral hazard is a problem situation in which there are strong incentives to do the wrong thing, and thereby, in this case, by the company's own design of the program. See, the thing that would be done wrong would be the claim -- to publicly state as a for-profit company under the provisions of 16 CFR part 260, the federal law that I cited, to claim that customers, nonparticipating customers, are getting more renewable energy, when all the renewable energy attributes associated with that generation are actually being privately allocated through the program to a subset of customers. This is in part and parcel of the null energy term that I used.

Once those RECs are stripped off of that energy and separated from that output and sold and transferred and credited to a private set of customers, it would be double counting. It would be a double claim to go around and say we built lots more solar energy for all Florida customers while we allocated -- sotto voce -- it's sotto voce, right -- to a few customers that they got all the RECs.

So that is the moral hazard. It puts the company in the position of wanting to claim it is doing more solar when, in fact, it's just doing more solar for a select number of customers and not for the general body of rate payers. Does that help explain it?

Q. I think so.

A. That is my explanation.

Q. And just to be clear, when you say that solar is not for all customers, the solar generation will, in fact, benefit all customers. You can disagree about the allocation of benefits and the allocation of risks, but at the end of the day, you have to agree that these solar plants will provide power to all of Duke Energy Florida's customers, right?

MR. MARSHALL: Object to form.

A. Yeah, okay. So, yes, I would agree that there are some indirect benefits that overwhelmingly, may be exclusively -- no, no, not exclusively. There are two kinds of benefits that could result for other customers.

First, growing the amount of renewable energy in the state of Florida, assuming some reasonable market access opportunities could lead -- make it easier for more renewables to happen at some time in the future. Of course, that potential benefit is outweighed by the risks that the company will monopolize solar development in its own service territory.

Second, there are the indirect benefits of the changing of the mix. So there are -- because the overall system produces fewer carbon emissions as more renewables are added, there will be some compliance-related benefits associated that will inure to other customers, so the -- or to the nonparticipating customers.

That benefit, which is not the same as having the environmental and other benefits of renewable energy, that benefit has to do with the way compliance regimes work and with the mix of resources on which those compliance regimes are applied. But as I stated in my testimony, that benefit is counterbalanced by the fact -- my apologies to Wal-Mart, it's just you're in the room and I get to say the word, but it's any large customer could use their North American Registry account, secure their RECs from subscription to this program and use them in a corporate or institutional balancing account to actually just offset emissions from a coal plant, say, in another state or another location outside of Duke's service territory, a company service territory where that entity operates or has operations or has allocable emissions.

So, yes, that is a longwinded answer to your question. So, yes, there are some benefits, but they don't include the right to claim that the mix for non-participants is more renewable as to this generation associated with the program, because the renewable attributes of the generation are being privately assigned to participants.

Q.   (BY MS. TRIPLETT) Okay. You just said a lot there, so I have several follow-ups on that.

A.   You should see what it looks like on the inside of my head. By the way, I love your fingernails, very Halloween.

Q. Thank you. Super professional, right?

A. No, I like them, I like them.

Q. Thank you. My daughter likes them, too.

So let me start at the last sentence that you said about large customers using the RECs to offset coal or, you know, other -- for other purposes.

If the company were to require participants to show that the RECs provided under the program were retired within 30 days, wouldn't that eliminate the risks that you just articulated?

A. The question is retired against what, right? So when emissions are retired, they're retired for some purpose and they're assigned against some emission or activity Scope 1, 2, 3 type emission that they're trying to offset.

So, yes, it could be a benefit if you said to those customers -- or this problem could be mitigated if you said to those customers, yes, we are going to assign them to you, but you demonstrate they are retired against emissions created Scope 1, 2 or 3 by your business in the service territory, so then there would be -- what we would see is the overall service territory footprint, including not just the company, but all the businesses operating in it and all the people causing emissions in it to fall.

This is one of the ways in which you might get that systematic-type benefit because the overall -- I keep moving my hands, I am sorry, we're in a deposition so it doesn't matter, but I am moving my hands from up to down -- in which the overall carbon footprint of the service territory might be reduced, and, like I said, down the road, nonparticipants would see a benefit from that lower level of starting emissions under which a compliance regime had to operate, had to be effective.

But I am not aware of any condition like that in the program. And the assignment of those renewable energy claims and the claim of we greened up our operations still belongs exclusively to the entity that owns the RECs and the nonparticipating customer, despite the cross-subsidy, and the bearing of the risk and administration costs is still left in a position where they cannot say that their share of renewable energy increased.

Q. And I think what you are describing, because I think one of the long answers that you gave, you admitted I think that all of the customers, including nonparticipants, would get a benefit from overall the mix of the generation would change, and I think, what it sounded to me like what you were describing there is the concept of a carbon offset which refers -- are you familiar with what a carbon offset is?

A. Yes, and in, fact I was giving you the short explanation, because, for example, if that carbon compliance or rejection regime includes and is going to take account of so-called voluntary actions by, you know, customers who subscribe to this program, let's assume it was without the cross-subsidy, that would only actually generate credit and benefit in that compliance regime to the extent that the regime establishes a set-aside for voluntary reductions, for example, shorthand here, see Regional Greenhouse Gas Initiative, or RIGGI.

Q. Okay. Now I am going to go back to the testimony about a potential violation of federal law, because I want to be very clear on the record. Probably as the company's lawyer, I may have taken particular offense to this part of the testimony, so let me just ask you a question.

I think, in your answer, you made reference to if the company did something -- you know, if they did something in the future, it would be a violation of the law, so that, to me, is future.

So just to be clear, your testimony is not, sitting here today, my company has violated federal law; is that right?

A. As a lawyer myself, I appreciate your caution and concern. And I will emphasize, yes, I -- what I am saying is that the program structure actually creates an incentive that could lead to advertent or inadvertently making what essentially is known as making a double claim or a claim of renewable energy benefit that is not, in fact, substantiated adequately, which is really sort of the shorthand definition of the requirement of the Federal Trade Commission's Environmental Marketing Guidelines.

Q. So, again, just to be very clear, is it your testimony --

A. I am not saying that there is --

Q. Yes.

A. -- I am not saying that the program sets it up. The company is in control of that, as it is of everything it does and can -- is in control of it by the nature of the claims it makes and the claims in which it -- that it contractually allows subscribers to make concerning the disposition of the environmental benefits, associated other benefits and other attributes associated with the renewable energy generation. I am saying watch it, and why would you set up a program that creates that moral hazard?

Q. Well, let me ask you this. Would you have less problem with the program if we were not -- if the company were not providing the RECs to the participants?

A. There would be less risk of that particular issue, right? There is some companies -- and by the way, it could go either way. There is -- you know, or probably maybe in between like this is, but I think either way is actually the clearest and easiest way to do it. Some utilities can offer green power programs in which all they're doing is really offering pricing and they're not offering any renewable energy attributes. Those are not green power programs. They're just pricing programs. They're like economic development discounts. They're giving a deal to a favored customer, okay, for under a specific set of terms and conditions.

It may be that these days because of the falling costs of renewable energy, the reason why they can do that is a kind of retailing allocation like this program is or the output from a specific generator to a specific customer.

The other way to do it is to assign those renewable energy attributes to the customer that is the subscriber, but to be scrupulous economically and financially by avoiding cross-subsidies and in terms of claims, communications and corporate behavior by making it absolutely clear that the program benefits associated with that green power program are not increasing the amount of renewable energy for all other customers but that are only giving select participating customers the opportunity to have more environmental benefits associated with the electricity they purchased. That, in fact, is the dominant form of green power, green pricing, and I believe most community solar programs being offered.

Q. I would agree with that last statement there. Let's go back to, I think you did reference it in your testimony and then today, the concept of null energy. And so do you consider this null energy from a solar resource to be carbon free?

A. Do I consider null energy from a carbon -- from a solar resource to be carbon free? No, by definition -- and this is something that came up in the rebuttal testimony, if we're kind of referring to that a little bit.

There was this really troubled assertion in the rebuttal testimony of one of the witnesses that somehow subscriber customers get the RECs but that the company retains the carbon claims. Maybe -- maybe the parties to this program understand that, but that is not how I understand this works. RECs includes the carbon claims and that is the avoided carbon claims. So, by definition, once those RECs are assigned to one customer, they are getting the avoided carbon claims as well.

And if the company is, as the rebuttal testimony seems to assert, if the subscribing customers, like Wal-Mart, if the settling parties are on board with the idea that participation does not include the right to make any claim about the carbon emissions associated with the energy they are subscribing to, then -- well, that is a very different situation. That is what we call a disaggregation of the attributes of renewable energy.

I am sorry, I walked around this. The simple answer to your question is once the environmental attributes have been assigned to a specific customer, they are no longer available to the general body of rate payers. So once those RECs have been assigned to a specific customer, the resulting null energy does not include a carbon offset claim.

Q. What about if a carbon offset claim is the fact that a company is avoiding future conventional generation?

A. Now that we're getting to that little quota that I shared with you a minute ago, which is to say that there is a general mix benefit that might show up depending on the compliance regime, but you couldn't actually make a compliance claim about the benefit as you described it that it was avoiding generation, unless the compliance regime has a specific voluntary market set aside within it in which you could say we sold X to Corporation A and it is part of our voluntary program subscription, and up to the point allowed by that compliance regime, we are meeting our requirement for our necessary allowances.

But if it's not written in there, then a voluntary sale of the RECs does not create a compliance benefit and, therefore, does not create a compliance offset benefit. While it does change the overall mix of resources used to serve customers within that service territory, as I acknowledged, and I can change the cross profile, right, renewable energy doesn't have the variable fuel prices of natural gas. That is a potential benefit. But the carbon offset claim is conditioned, absolutely conditioned in my understanding on the terms of the compliance regime, which, of course, we do not have in Florida today.

Q. Okay. Let's talk about low income customers. We have talked about that a little bit. Is it your testimony that the program disproportionately burdens low and moderate income customers?

A. Yes, to the extent they are being required to pay for a program that they do not get all of the benefits for, that some of the benefits are assigned to some others, I would call that a disproportionate burden or an undue preference or any of your similar phrases. So, yes, as long as you're a nonparticipant low income customer and all you're getting is that added cost and that added risk, then you're being disproportionately burdened compared to the benefit that subscribers receive. And, by the way, that includes the extent to which there are low income customers in the program and out of the program.

So I know that the aim of the program is to try to secure some enrollments of low income customers. Those customers will get more benefits and will have less burden than the customers who do not get to participate even within the same class or segment of class.

Q. So your answer leads me to believe that I would get the same answer if I was asking, hey, any non-low income nonparticipant, are they disproportionately burdened?

A. Yes.

Q. So I want to ask specifically, just to make sure I understand it. Are you saying there is anything in particular about the nonparticipating low-to-moderate income class that is being disproportionately burdened, or is it just -- it's the same burden, no matter if they're low income, high income, what have you?

A. Well, there is, of course, the distribution of burden, energy burden, issue across most of the country, and energy burdens are higher for low income customers.

So any allocation of increased costs to those customers exacerbates an existing energy burden problem. You know, when 6, 10 or more percent of your household income has to go to pay for your energy cost, increases affect you much more significantly than if you live in a McMansion and, you know, have energy costs that are a fraction of a percent of your total household income. So there is that, of course. But, otherwise, it is that the major -- the major undue preference that I am arguing exists in the program is between nonparticipants and participants.

Q. Okay. Thank you. And that energy burden for low-and-moderate income customers you described, you would agree that that same energy burden, it applies to any investment that the company makes, energy efficiency, conventional, you know, the solar --

A. Sure.

Q. -- to anything, anything that we -- that the company does and puts on bills it's going to put disproportionate burden on low income customers?

A. Burdens and benefits, right? So that, again, gets back to my core issue with this case. There is nearly $300 million of benefits that are being deprived of nonparticipating customers, from nonparticipating customers that would result, according to the company's estimates and calculations, if those benefits were not syphoned off for a relative few participants.

So, yes, it goes both ways. And it has to do with everything. It's part of us all being part of a universal service network, and it is part of the general principle that I mentioned before that, in my experience, voluntary programs don't ask nonparticipants to pay the cost of their voluntary benefits.

MS. TRIPLETT: We have been going for a little bit over an hour. I am about to move into the interrogatory responses. I have quite a few questions.

So what I would suggest is we take a five-minute break, and then we can pull up the Rog responses and we will come back. So by my clock, it's 3:22.

THE DEPONENT: Sounds good, five minutes.

MS. TRIPLETT: Thank you.

(Recess taken, 1:17 p.m. until 1:25 p.m.)

Q. (BY MS. TRIPLETT) So let's go back on the record. We are going to look at the interrogatories, and I just want to confirm, you were the affiant for all of these responses. So you provided these responses, right?

A. Yes, that is correct.

Q. Okay. And I am going to start with the answer to number 19.

A. Okay, and this is Rogs or PODs?

Q. Rogs.

A. What does that stand for?

Q. Interrogatory, it's just short, interrogatory.

A. Okay. More than -- well, almost 50 years as a lawyer, and I never knew that. Thank you.

Q. I don't really know. I think that might be just what we use.

A. It's not almost 50 years. It's less than that, anyway, lots of decades, and I never knew. Thank

you very much. So what is the other ones, PODs, production of documents?
    Q. POD is production of documents.
    A. All right. I have got it in front of me. What can I help you with? Nineteen?
    Q. Nineteen, yes, sir.
    A. Okay.
    Q. And so based on this -- on this response, you would agree that even in the no fuel, no carbon cost assumption case, that the general body of customers still see a benefit from the program?
    A. I am sorry. I am just going to read the whole thing. Yes, okay. Got it. What did you want to know?
    Q. I just want to confirm that you agree that even in the low fuel, no carbon cost scenario, that the general body of customers will still see a benefit from the CEC program.
    A. They still have to pay the 67.7 million subsidy. But yes, there is the cumulative present value revenue requirement 93 million -- I am sorry, maybe I am missing --
    Q. It should be very simple. The $93.9 million of cumulative present value revenue requirement benefit is still better than the $67.7 million subsidy. That

is a better -- it's a bigger number.

A. Right, the cumulative, yes, over the life of the program as the company portrays those numbers, and with the assumption that all of the assumptions come true.

Q. Okay. And the next one is interrogatory number 20. Here, you indicate that, "Should the company decide to go forward with the voluntary subsidy free community solar project, it is limited in scale, participation opportunities should be fairly apportioned."

So my first question is what do you mean by fairly apportioned?

A. Right. Well, within, you know, the -- the, as I described before, sort of the cost effectiveness evaluation for the overall program to try to -- I am sorry. Let me put it another way.

This is a monopoly utility that is setting itself up as the only provider of a community solar option in its service territory, whether that is because of regulation or because of choice doesn't matter.

So in that regard, my -- my starting concern is that the opportunity for extra benefits, the opportunity for special benefit should be distributed as fairly as possible, meaning that if there is -- you know, if there is a $10 benefit available for only $9, that ideally, and given that there is no competitive option, nobody to provide the same $10 benefit for 895, you know, just one offer on the table, that the starting place would be to distribute it across customers and, you know, some kind of fair allocation schedule, like the allocation decisions we make for -- for lots of things that happen, for example, in a rate case.

So the starting position was -- the starting position would be to what extent does the allocation or the distribution among classes and segments reflect the current distribution of customer classes and customer segments being served in the general body of rate payers? So that is the first place to start with fair allocation.

The second place is a place that a lot of voluntary programs go to if you can't really make solar available to every single customer right now, though goodness hopes we do in the future, then make sure that those that do get allocated the benefit who might have to pay that extra amount of money, that $9 to get the $10, at least they're paying it on their own. So fairness is in, one, trying to distribute the benefits in a way to benefit the customer groups; and number two, to ensure that if you can't -- if everybody doesn't get a fair sort of, full, democratic, little D, democratic opportunity to participate, that those who can't or don't participate don't get burdened with the costs of those who do. So that is my answer on that.

I am sorry, I will go one step further just to save a little time maybe, or maybe to take up time depending, but I also mentioned in my testimony specifically the idea of how the company could have alternatively proposed the allocation of upside benefits, all right, this goes to the risks.

So the company's proposal is that subscribing customers are guaranteed an increase or in the low income customers set aside a flat solar credit level, while, as I mentioned before, all the risks of fuel prices being lower than expected, carbon value being lower than expected is allocated to nonparticipating customers.

So the recommendation in my testimony, which was pretty simple, I thought, was to say don't guarantee participants any more than their money back, don't -- guarantee that they'll make more than their money back, just don't guarantee they'll make any more than that.

And if it turns out that the company is the smartest people in the room and has figured out a resource that is actually going to be worth even more, then take those excess benefits and distribute those like you do earning sharing mechanisms between participants and nonparticipants in some kind of equitable or more equitable fashion.

So it isn't just about allocation of the initial burden or that it is fundamentally important, there is an opportunity here to allocate upside and downside risks more fairly. So that -- I guess that would be the third part of my answer.

Q. And just a follow-up on that. And you would agree that while -- I know your main concern is that the nonparticipants bear the risks that their benefits will not be as high, they also get the upside if the benefits turn out to be cleaner, because participants are locked in in terms of the weight of their credit, you would agree with that?

A. That is why I think the company should be investing in more solar for all of these customers, because I actually believe that there is at least a really good likelihood that those upside risks will exceed even those the company estimated, although I have those concerns because in these out years, as I said in my testimony, carbon credits may not be worth a bunch because a bunch of other states are going to be doing something about it, if you believe Southern Company and Duke, they're going to be eliminating most of their carbon emission by that time, so carbon credits may not be worth anything in that world.

But if fuel prices, you know, are higher and carbon credits are more expensive, there is an upside risk, and certainly the solar is a value against that. Just the hedge value alone would make it a good investment, but it doesn't mean that you have to allocate some of that benefit over to other customers just because there is a potential upside risk as well as downside risk. Remember the issue that I complained about in my testimony is that all of the allocation of the downside risk is to the nonparticipating customers.

Q. Let's turn to the response to number 24, please.

A. Yes, ma'am.

Q. Here, let's see, I think in the second sentence of this answer, you reference -- you say, "In other words, by providing below-cost access to a solar program grossly above market return --" and then you say, "Duke's program eliminates the ordinary economic incentive for customers to install their own solar

system." So --
A.   Right.
Q.   -- I just want to ask you a couple of things about, you know, first of all, by providing below low cost access, what would the price of the CEC program have to be for it to be considered at cost rather than below cost?
A.   I am sorry. Ask that question one more time.
Q.   Sure. In your interrogatory response where you reference -- you're saying that -- you're basically calling the CEC solar program having -- or providing below cost access to the solar program. I am trying to understand what you consider to be at cost, rather than below cost.
A.   Okay. Well, I think this just goes back to the basic program structure. What I am talking about here is the fact that there is a subsidy, especially in the near years, right, in order to achieve that seven-year payback that Mr. Hubert talked about in his testimony and as I detailed in my testimony, the initial year's outlay of this program is significantly greater for nonparticipant customers in order to ensure those, if you will, sort of extra returns by participants. This sets up an inner-generational equity issue that is not even addressed in any

meaningful way anywhere in the application or in the program. So even just taking a short snapshot, the picture is pretty secure.

Taking the longer-term snapshot of the ultimate amount of cross-subsidy or cost shift that the program requires, that $300 million running out there, that is the below-access part, right, that $300 million, as I said, could be put on participants and not guaranteed to them unless the actual value, that upside risk we were talking about before, is actually realized.

If you are asking me is the number 1 cent or 2 cents, I don't have a quantitative analysis of that. But what I am saying here is that under the simple hydraulics of market choice, if a customer wants to be served by or get the benefits of solar electricity, they will go to a market, or they will take a program that is subsidized if it's offered by the utility, and if they go to the subsidized utility offer, then they won't be going to the market. And given that this is a market that experiences and has traditionally and is expected to continue realizing economies of volume scale, then that will suppress market development and delay those generalized benefits that come from accelerating the market that I mentioned in the previous hour.

Q. Okay. In that same question in that same sentence, you referenced grossly above-market return.

A. Yes.

Q. What is your calculation of the return?

A. I think I addressed that earlier on. I don't have a specific number for it. I am citing the number in this case and this structure in this program as being what I would characterize grossly over.

But if you recall earlier on in the deposition, I mentioned the fact that given the difficulties and challenges of precisely accomplishing cost allocation between voluntary and rest of business costs, especially for joint and common costs, there is always going to be at least some risks of small incidental cost shifting. Circumstances change. They change from original plan. And so things might move by the fraction of a mill or of a cent. But in this program, there is a deliberate cost shift in the hundreds of millions of dollars, and, to me, that is grossly -- that creates grossly above-market returns.

Second, a seven-year payback is, in my general experience, extremely aggressive payback on solar participation. Most utilities, like Duke and others, have tried to install debt-metering programs or administer debt-metering programs that provide customers with paybacks on net-metering investments in the ten-year or above level. And generally speaking, many investor utilities are trying to make the cost effectiveness of net metering self-build options even worse.

So the point being that if you can guarantee on the backs of nonparticipants a seven-year payback on a voluntary program participation, you will be, as I said, using market power to suppress real market opportunities and extracting monopoly rents from captive customers in order to do so.

Q.   So I want to get back to my question that I asked. I am not sure you actually answered it. So let me just ask you about the ten-year payback that you referenced with net metering. We are in Florida, and to the extent your testimony is concerned about customers not being able -- choosing this program over a net-metering program because the payback is less, specifically for Florida, have you conducted an analysis to show what is the payback in Florida for a net-metered rooftop solar installation?

A.   I have not.

Q.   And then on my question about the grossly above-market returns, again, you have not done any particular analysis about what would be market. You are simply characterizing the $300 million as -- that must be above market and must be grossly; is that fair to say?

A. Yes, I am characterizing what I have found in this program to be describable with that word, with that phrase.

Q. Okay. Let's see. Interrogatory 25 here, just to be clear, I know there is an objection here for attorney/client privilege, and I am not asking you to divulge attorney/client information, I am just trying to make sure that I am clear about your role, because you're a lawyer, and I am not clear about whose privilege is being asserted here.

So are you, in your legal -- as a lawyer, are you representing LULAC in this proceeding?

A. No, I am not. I am not a practicing lawyer, and I am not engaged as an attorney in this case.

Q. Okay. And do you -- does Earthjustice represent you or your company in this case? Or is Earthjustice your attorney?

A. Earthjustice is my attorney. They're my sponsoring attorney as an expert in this case. I am not a client.

Q. Okay. Okay. That is what I just wanted to confirm. All right. And so with respect to the 25A and B, where the question asks you to state your opinion about the Florida Power & Light, which if I refer to them as FPL, you'll understand that that means Florida Power & Light, their program, there are two questions here, and on both of them, you offer no opinion on the stated question; is that right?

A. That's correct, that's correct.

Q. Okay. Why do you not offer an opinion on those two questions?

A. Because I haven't done the same level of detailed analysis of their program. I have not performed my sort of -- my expert analysis of the program and the program conditions.

I have looked at it at a high level and for indicative matrix, as cited in the response to question 25D, as in delta -- I mean, C, as in Charlie. But I -- I haven't reached the point where I am offering an expert opinion on that; therefore, I did not provide an opinion and a response to the question.

Q. Okay. I just want to make sure at the hearing in this matter, which is scheduled for November 17th and 18th, if a commissioner or any party were to ask you either of those two questions, would your answer be the same, which is I am not answering

the question, I have no opinion?
A. Yes. That -- I mean, if the -- yes, same question, same answer.
Q. Okay. Thank you. And regarding FPL, I mean I think you characterized your review as high level, so I believe you referenced an end note the staff recommendations. So you reviewed the staff recommendations from that case; is that right?
A. I did.
Q. And then I think you provided a discovery response in your work papers. So you reviewed a discovery response from FPL Solar Together case?
A. Okay. Yes, I believe that is right, and I think -- let's see if I can get it to come up. I am not sure where it is right now.
Q. We don't need it -- I was just, in general, how did you go, how did you find that particular discovery response?
A. With the assistance of my counsel from Earthjustice.
Q. Did you review all of their discovery responses?
A. I did not, I did not.
Q. Did you review their petition?
A. I can't honestly recall if I reviewed the

original petition or not. I don't honestly remember. Let me see. I can take a look, and if I have it in my files, that would be a good sign that I did, but it doesn't necessarily absolutely answer the question. So FPL -- I don't recall if I did or not, but I am thinking it's likely I did not, but that is all I can really say right now.

Q. Okay. And did you review the Commission's order approving the FPL Solar Together program?

A. I do recall that I did, yes.

Q. Okay.

A. But I don't remember specifics about it.

Q. Okay. I think that is all for 25. Let's go to 29.

A. Uh-huh. I have it.

Q. You're faster than me. Okay. So here, you say, "Furthermore, anchor tenants do not typically expect a 135-to-1 ratio of net annual credits to net annual outlays on their investment."

I want to ask you very specifically, what is the basis of that 135-to-1 ratio?

A. Yeah, that is just a calculation of some of the numbers. Let me see if I can pull that up for you. It's going to take a minute. Okay. It's going to take me about three or four minutes. Do you want to take a short break while I look it up and find it?

Q. Sure.

THE DEPONENT: Why don't we take five. It's 1:52, can we take until 1:57? Is that all right with you?

MS. TRIPLETT: Yes.

(Recess taken, 1:52 p.m. until 1:57 p.m.)

Q. (BY MS. TRIPLETT) Back on the record.

A. Okay. So you asked me for the derivation of the 135-to-1 ratio, I think, or 134-to-1 ratio, whatever the number is. I would ask you to reference a spreadsheet that I submitted in response titled Rabago IR RESP WP1 201021. And look to the cells contained in I-15 through N-58 where I did this little calculation.

So what I showed was I -- and this is based on some columns that I added in to some data originally that came from the company in its cost-effectiveness document, and it's from the nonconfidential sheet, a document titled CEC 749 Megawatt Model K Settlement Filing. So that is labeled in the top row of this -- of my spreadsheet.

So what I did was I looked at -- I constructed a build of the cumulative and annual costs or savings and used the number for cumulative outlay not exceeded by credits of $2,128,910, which, as you can see, is the sum of block cells K-15 through K-18. That is annual outlays that are not exceeded by credits.

And then I did -- looked at the net benefit -- or wait a minute, I am sorry -- and then I looked at the total net benefit and calculated very simply by dividing the total net benefit, which is the sum of all benefits, the cumulative number at the very bottom of Column L, to show that for those four years or so, five years -- five years that the participants are actually, if you will, cash flow negative, they are putting out more in subscriber fees than they are receiving in solar credits for an outlay that sums to $2 million over the course of those years. They get a total sum of $284 million in benefits.

So what I was trying to characterize, this is a pretty good deal from a cash flow benefit, cash flow. If you were mapping cash flow, the line would go below the zero line by $2.1 million, and then it would climb ratably to $284 million in terms of net positive. Does that answer your question?

Q. I think it does, yes.

A. Okay.

Q. Let me ask you this. Did you perform a similar analysis on what this return would be for the

general body of customers?
    A.   I did not. I did not do that. I did extend the analysis in that block that I mentioned by doing total fees and total credits to show that the net return is about 13.1 percent, but that is just sort of using these numbers, but I did not do it for the general body of rate payers. And I would note that any such analysis would also have to be conditioned by contingency of the uncertainty on the assumptions, up or down.
    Q.   As would the analysis that you did to support the 100 -- I guess it's 34, not 35-to-1 --
    A.   No.
    Q.   -- because this also assumes that the credit --
    A.   No, no, that is not my understanding, because I understand the credits are guaranteed to subscribers.
    Q.   We can look at the tariff, but the correct -- the level of the credit on the sense of kilowatt hour basis is set, but there is a variability in the amount of the credit depending on the performance of the units.
    A.   Oh, yeah, in terms of net production, yes.
    Q.   Uh-huh.
    A.   Right, thank you. Yes, I agree with you on

that.

Q. Okay. And then this analysis that we just discussed in your spreadsheet, is that over the 30-year life of the assets?

A. I used all of the values after 2053 that were provided, yes.

Q. Okay. Thank you. Thank you for looking that up. So let's go back to your interrogatories, and I am going to ask you about number 34.

A. Okay. All right. I am here with you.

Q. All right. And here, the question was -- because your testimony includes -- you talk about the way in which the company has estimated carbon benefits. So this was just trying to establish whether you had an understanding or a belief with how the carbon estimates should be estimated. And the answer here is that you did not testify as to the merits of the method, right?

A. Right. I didn't have it in front of me. It's not in the application. I assume it's something that could be produced on discovery. I deduced from the way in which it tracked the gas price changes that -- and I pointed this out in my testimony -- that it must have been based upon some assumed dollar per ton or some kind of factor or dollar per net megawatt, assuming a generation rate, but that is the best I could deduce from my general experience with how such things are done and from the information that was available.

Q. Assuming that it was done in that way on a value-to-time basis, is that an acceptable method for estimating carbon costs?

A. That is a pretty broad question. A lot of carbon costs, compliance cost estimates, are done that way. In many, if not most, cases that I have seen because it's such a forward-looking and it's got a degree of uncertainty, there will be sensitivities, high, low, and mid-carbon estimates to sort of bracket that uncertainty.

I have also seen one particularly ridiculous method that used a weighted probability analysis that just makes no sense from a statistical point of view, but that is another discussion.

Q. And so let's go to your testimony, because you have -- let's go back to your testimony, so here you reference page 26, lines 7 through 13.

A. Yes.

Q. And, here, you testify, "As with fuel prices, rapid decarbonization across broad sectors of the economy, such as a major shift away from fossil fuel generation by utility companies could substantially reduce prevailing carbon emissions prices due to weakened demand."

That is the concept you were talking about earlier with Southern Company and Duke, right?

A. Yes, generally if we could get regulation of carbon and we -- I will tell you specifically, I have watched this happen in REC markets, you know, I have watched it happen in sulphur dioxide trading, most cash and trade systems seem to have lower cost of compliance. RGGI is enjoying this benefit as well once the program gets running.

Q. But beyond just sort of a general -- the general assessment that you have made, you have not done any specific analysis to support what a weakened carbon price could look like in the future, right?

A. No, no. That is why, again, I would recommend the use of sensitivities to try to bracket that uncertainty.

Q. Okay. Have you ever performed a future carbon cost analysis for other clients in other regulatory proceedings?

A. No, I have reviewed many of them. And, in fact, there is one on my desk now for the social cost of carbon in New York that I have to look at. I have looked at a lot of them. I have participated in externality studies in general. I have reviewed cost -- value solar studies. I have reviewed many IRPs that attempt to internalize those as well as CCN or CPCN or the -- I am sorry, for the reporter's benefit, certificate of convenience and need or certificate -- I don't know what a CPCN stands for, but anyway --

Q. Public convenience and necessity.

A. Thank you. There is utility applications and program proposals of various kinds that have attempted to project the cost of carbon.

Q. So let's talk about value of solars. I think it's referenced in your resume, and then you have said it here today, you have been involved with such analysis. And so it sounds like you actually didn't perform the carbon cost assumption analysis, but is it fair to say that you have reviewed and incorporated carbon costs forecasts into value of solar analysis?

A. I have reviewed the incorporation of carbon costs analysis and value of solar analysis. In some cases, like when I was a utility executive, we hired a firm and looked at how they did it and gave them guidance. When I have been an advocate, I have looked at what consultants have done. When I have been an expert witness, I have looked at what utilities have proposed.

Yes, so I have reviewed the incorporation of carbon analysis in value of solar and other types of tariff designs and regulatory processes.

Q. Do you agree that there will be carbon costs in the future?

A. I hope so, in the sense that for the generalized policy sets that I hope that as a society we finally internalize that externality in an effort to make our economies more efficient and to reduce the growing threat of climate change associated with carbon emissions.

Do I think it's -- if I had to assign a probability to it, these days, I would assign a very high probability to the internalization of carbon costs and all kinds of decisions, but especially electricity generation and market decisions, if not nationally, certainly at least in many states and municipalities.

Q. And while we're talking about it, it occurs to me that back before the break, I think, when you were talking about null energy, null solar energy, as you used that term in your testimony, and I think you -- I don't think I asked you this specific question, so let me ask you this specific question. What is the carbon content of solar null energy?

A. There isn't a carbon attribute. There isn't such thing as carbon null energy, so there is either solar energy, which is a way to describe the energy with its RECs attached, or there is solar RECs traded separately or transferred to participant customers and the null energy that remains in the system. And by definition, when the RECs include all of the environmental attributes, the null energy has a null condition. You cannot assign its carbon value at all. At best, you can assign to it the systemwide -- you can make an estimate that null energy has a systemwide average emissions benefit net of any solar-related environmental benefits that have been transferred away.

Q. But any instance of null energy as you have just described it, a regulator that is applying a carbon cost, like let's say we're in a world where there is carbon compliance costs, they could not impose a carbon cost on null energy because there is no carbon associated with that, correct?

A. Yeah, this is where -- this is where sort of the theoretical attributes get in the way of the -- or may intersect with the regulatory attributes. Again, it's absolutely critical that you define the regime we're in.

If you are in a compliance regime, if there has been a voluntary set-aside, you know, there are systemwide benefits to having voluntary customers pick up some of the allowance satisfaction -- allowance requirement satisfaction by being participants in that way, and that benefits everybody. So you can see that carbon benefits accrue to the rest of the -- if you will, nonparticipants, the general body of rate payers.

But what you are -- it sounds like what you are asking is let's assume that there was a utility that it was a hundred percent sold, and let's assume they sold all their RECs to private parties who retired them into their own accounts or registered them into their own accounts and used them for their own purposes and their own claims. Then what you would have, I suppose, under that theoretical extreme is a system that had no emissions attributes or that was assigned for regulatory purposes the emission attributes of a broader system, the whole southeast regional, you know, coordinating council, or the -- you know, the southeast balancing market, or whatever entity exists.

And it's a matter of policy choice whether you characterize that null energy as not having emissions consequences or as having systemwide emissions consequences. That is a policy choice that has to be made.

The one thing we know is that a null energy system cannot claim -- and this is the critical issue -- cannot claim the environmental benefits, including the carbon avoidance that have been transferred to customers with the RECs.

Q. Thank you. I think you said this, but I just want to confirm. You would agree that it -- that carbon costs, carbon cost consumptions for the future should be included -- I am sorry, yes, should be included in evaluating the benefit of adding any new solar generation?

A. Absolutely.

Q. And would you also agree that carbon costs should be considered in evaluating the cost effectiveness of energy efficiency programs?

A. Sure.

Q. So back to your testimony on page 26, lines 11 through 12 -- something happened to my Adobe -- you state here, "There is a reasonable chance that the Company's carbon costs are too high."

A. Right.

Q. Have you quantified what is a reasonable chance?

A. No. I didn't have the benefit of even reviewing the analysis. But on its face, such an estimate is just a forecast, and it is based on a number of assumptions and I would have to look at them. But as I indicated in the fuller body of my testimony, at the very least, an increasing number of participants in a compliance regime could create the situation where carbon compliance costs would be lower as -- especially with variable renewable energy increasingly being a part of the generation mix because all of that energy is -- has no carbon emissions associated with it, at least for when it's solar. And you would have a potential surplus as the system gets sunnier and windier, if you will, of credits, which, according to the basic laws of supply and demand, assuming they were allowed to function, would reduce the value of carbon credits or the cost of carbon compliance.

Those numbers go even further down if the carbon price estimates are based economywide because there are many more carbon -- additional carbon reduction opportunities and transportation, direct thermal load, agriculture, and other parts of our economy.

Q. Okay. Thank you. Number 37.

A. Okay. Does this mean we're getting closer, close to the end?

Q. Well, of the interrogatories, yes. I have more after that. I would have started earlier today.

I don't think you were available.

Okay. So here, I -- this interrogatory is trying to get at understanding your testimony that is on lines -- on pages 28 and 29, where you indicate that, "The overwhelming majority of voluntary programs are designed to protect nonparticipating customers."

You used the qualifier overwhelming majority. So would you agree that that means that there are some voluntary programs that are not designed to protect nonparticipants?

A. Yes, I would agree with that. Would you like an example?

Q. Yes, please.

A. Traditional utility economic development incentives. They're often paid to large cooperations with the promise that they will bring jobs or economic activity and ultimately increase load to a service territory. Those incentives could be paid out without an expectation of a claw back if those jobs or economic activity do not materialize, and, therefore, they would be assigned and burdened to all rate payers.

In fact, economic development incentive rates typically never try to recover the costs directly from the beneficiaries, those large corporate or business interests that receive those incentives for growing load.

Q. And are you aware that Florida has an economic development -- well, are you aware that in Florida, utilities have a mechanism by which to offer such economic development incentives to customers?

A. Given what I know about Florida, I would be surprised if they didn't. I should stress that the rationale for such programs is that theoretically the societal benefits of increased economic activity is the one place where utilities uniformly support accounting for societal impacts, I might note, outweigh the direct costs to customer and that the short-term benefits between rate cases for spreading fixed costs among more units of sale are somehow advantageous to the customers who ultimately must foot the bill for those incentives.

And I, in fact, have -- as having been a commissioner, while I don't remember specifically, I am sure I voted to approve economic incentive rates of such a kind and based on such a justification. I am not opining as to the relative merits or the wisdom, I am just observing that, in response to your question, there are some voluntary programs that is voluntary on behalf of a business taking advantage of an economic incentive rate in which the general body of rate payers are at least required to bear the short-term cost of the program and, in some cases, the long-term cost as well.

Q. Would you agree that the FPL Solar Together program is also a voluntary program that is, under your theory, not designed to protect nonparticipating customers?

A. I would agree that it is structured as a voluntary program for the participating customers, but I have got to tell you that, you know, I was in the room the very first time David Moskowitz from RAP, a former commissioner from Maine, proposed to the NARUC Energy and Conservation Committee that we regulators consider the idea of green pricing.

And I can tell you that in this line of program activity, which I have been paying attention to since that day, many -- a couple of decades ago now, the overwhelming design -- the overwhelmingly common design criteria of voluntary green pricing program, green power programs and the Progeny and community solar programs has been based on a conscious attempt to ensure that voluntary customers were not subsidized by nonparticipants. And that is the point I am trying to make in my testimony and which you cited in Rog 37.

Q. Okay. The good news is you can put the interrogatories away. Okay. So I think you just mentioned the subsidization, so let's just stick with that. And then I, in particular, want to talk about, you know, net metering.

So let me start with have you ever testified in support of net metering in Florida?

A. Have I testified -- I -- let me think. Let me think, let me think, let me think.

I am not recalling specifically that I testified in support of net metering. I know that I testified on behalf of SACE, Southern Alliance for Clean Energy, S-A-C-E, in a FEECA proceeding, and it was the case in which the utilities proposed and succeeded in eliminating their behind-the-meter solar incentives, but I don't think that was net metering, per se.

I know I have participated in workshop forums and public presentations in which I have advocated for value of solar compensation and that, therefore, net metering would be fair because the value generally exceeds the full retail value. But I do not recall a specific instance or I am blanking on any specific instances of specifically testifying in support of a net-metering program or rule in Florida.

Q. How about any other states?

A. Yes, either directly or indirectly, I have taken the position, oftentimes it's been in association with value of solar type argument, but, yes, on several occasions.

Q. And I take it that you generally support net metering?

A. I generally support net metering, as I have been quoted in the media as saying as rough justice and an acceptable approach that actually ends up with solar customers subsidizing the body of remaining rate payers because those customers are paying private dollars to invest in solar generation, which provides more than retail levels of benefits to the entire system.

Q. And is that your reference to -- well, maybe you must make that comment for jurisdictions that have not adopted your value of solar tariff, in which case then you would argue that then the net-meter customers were being fairly compensated for their net-metered solar power; is that right?

A. What I argued is that it is a reasonable, like I said, rough justice policy choice to provide full retail net metering given that the -- most of the value of solar studies I have seen that are -- that I would support -- and there is a whole lot of discussion with that -- find value that exceeds the retail rate. So it is not exactly what you said. What I said is what I meant.

Q. Okay. Are there any jurisdictions in which the net-metering policies don't involve the net-metered customer subsidizing the nonparticipants? Is there any jurisdiction where you think that the jurisdictions got in the way?

A. Sure, the tariff I put in, of course. What I put in created the first value of solar-based tariff in Austin. I got it as right as I possibly could. I believe that, at least theoretically, and that we could -- we should properly strive for compensating net-metered production at its full value of benefits and avoided costs, and that if we hit that Pareto at optimal, you know, of exactly the right benefits versus benefits equation, then solar customers and society would each break even. But we don't actually hit that a lot of times, most of the time.

Q. Do you agree that even in the jurisdiction of the value of solar tariffs that you developed and implemented, that net metering places nonparticipants on the hook for administrative costs?

A. Not every case. I have a general sense that there are some places where the net-metering design decrements treats as a cost of net metering the administrative costs associated with the program. And, of course, in the vast -- in many, many cases, net-metered customers are required to pay for their own production meter, which is a way in which they assume a big part of the administrative costs associated with a net-metering program.

So, yes, in some cases, the utility assumes additional administrative costs associated with net metering that it spreads to the body of rate payers. It's important to remember that with the automation of most billing systems, the incremental costs of net metering are actually very small and zero on the margin. But, you know, the way we're talking about it here, I think between 16.5 and $16.8 million during the life of the program, and I do know those are specifically assigned to nonpaying customers during the company's proposal, and that is not universally the case with net metering.

Q. Does net metering promise future benefits that may or may not include the nonparticipants?

A. It all depends on the statutory or regulatory justification for a net-metering program. Do you mean does net metering yield future benefits?

Q. Well, let me ask it this way, because I think it involves also the value of solar analysis, right? So when you are -- in your value of solar analysis, you -- as I understand it, you're taking several types of benefits, avoided costs, and you're estimating what they are going to be over some period of time in order to come up with a rate that you are going to pay for the value of the solar; is that right?

A. Yeah, under a value of solar tariff, you would use the value of solar calculation result as a compensation rule. Under general policy analysis, you would give that value of solar analysis to benchmark compensation levels. Like I described before in many places, doing the analysis is not necessarily for the purpose of deciding the billing rate that is applied to the production determinant or the net export determinant, billing determinant, but it is just used to know whether or not you can be comfortable paying full retail.

Q. All right. And so I guess my question is as part of that analysis, you -- whether -- and let's use the example of a jurisdiction that is using the value of solar as the actual compensation rate and not just as a benchmark, but as the actual compensation rate, that value makes certain assumptions of what the level of fuel costs is going to be, correct?

A. What the level of --

Q. Fuel costs will be.

A. Yes, it does include projection of fuel costs or avoided fuel costs over the life of the generation. It is a similar kind of analogy, it's a similar kind of estimate of benefits that the company used here. Critical difference, right, is the who bears the risk of that number being wrong? If utilitywide costs fall and the value of solar compensation rate is changed to match its level as I proposed in Austin and is used in some locations, then you would actually track that value and falling fuel costs would reduce the incremental value of the solar operation or generation and would reduce the stream of benefits for the customer who made the private investment.

And again, under net metering, we're talking about private investment, not socialized utility investment, which is a big difference.

Q. And just to be clear, so it's basically the same -- you would agree that the value of solar analysis are actually making assumptions about private costs over --

A. The good ones do. The faulty ones ignore it.

Q. What about avoided generation capacity consumption? Do you agree with that?

A. Yes, at the same time, you can check everything I have sort of said about this back in at least, I think 2013, in a Regulator's Guide To Valuing Distributed Solar that I co-wrote with Jason Keys and published through IREC, but, yes, that is one of those factors.

Q. And what period of time do you look at the value of solar, what time horizon?

A. Ideally, you will look at the value over the useful operating life of the resource so that it puts it on an even footing with the utility resources, and similar to the way you will look at the -- the value of energy efficiency programs, you would choose a useful life number.

What has traditionally been done is that either you use the current average 25-year warrantied life for solar systems, or when utilities are proposing to reduce net-metering compensation value, you use very short time periods, like the one year per voided cost value or a much shorter time period -- or a short time period like five years or ten years based on numbers that the utility has comfort with projecting.

Q. And what Duke did with the CEC program, evaluated that over I think a 30-year period, right?

A. And that matches what I would call best practices in valuing a resource or the value of generation, and it definitely shows that participants -- sorry to do this to you -- but they chose that participants that invest in being participants in this program without being subsidized by other customers, and it shows that the utility ought to be building a lot more solar for nonparticipating customers as part of its system mix and that it can do both without commingling the revenue streams.

Q. Isn't one of the main points of -- isn't one of the goals of the value of solar tariff to provide all of the benefits of the solar calculation to participants?

A. It is to try to close the gap between cost, price and value, because at that theoretical point where all three are equal, we have ideal economic efficiency.

Right now, the -- there are significant differences between many -- the compensation rate for self-generation or exports in many jurisdictions and the value that is created by that generation or those exports, which results in an uneconomic level of investment.

Q. So in some of the value of solar settings that you have been involved with, if you can recall any of the more recent ones, do you -- can you give me an idea in a sense of kilowatt hour basis what you are assigning to that solar generation?

A. I will tell you just very anecdotally, because a lot of the numbers are derived from cost of service regulation, my experience is that the value of solar is about retail plus social cost of carbon, and that is because, although we are far from perfect at it, that number represents what it would cost for an average relatively low solar utility to make, acquire, and deliver a kilowatt hour of solar or solar equivalent electricity.

It is very similar to the premium that many utilities attempt to attach or do attach to green pricing programs as the incremental cost of, if you will, acquiring and retail wheeling, not literally, but credit wheeling a clean energy resource, which gave it a roughly 2 cent social cost of carbon, like I say, is -- generally is about retail plus social cost of carbon.

That is just anecdotal based on looking at, you know a few dozen of value of solar studies and, you know, probably the same number or more of various tariff proposals and other things around the country.

Q. I want to get -- I want to be more specific with an order of magnitude, and I can show you a couple of things on the screen if it works, but I am hoping maybe if I tell you these numbers, you can tell me at least if I am in the ballpark.

A. Okay.

Q. So do you recall submitting testimony, I think it was in June of 2020, in connection with a consumers case in Michigan?

A. I do.

Q. And in that case, it was hard to tell, I think someone else developed the number, but you supported it and it was an outflow credit of 23 cents a kilowatt hour; is that right?

A. Yes.

Q. And in 2015, this one is a little bit older so you may not remember, but I think you contributed to the Maine Value of Solar?

A. Yes, I was part of the team.

Q. And there, the value was 33 cents a kilowatt hour?

A. Yes.

Q. Does that sound right? Okay. And then, by comparison, the CEC program, the subscription incentive kilowatt hour, it starts from about 4 cents and escalates to about 6 cents a kilowatt hour. Would you agree with that?

A. Yes, the CEC, yes, yes, okay.

Q. So I mean, the point there is that the value of solar that you are assigning to the distributed generation is quite a bit higher than what my company has assigned to the CEC program, right?

MR. MARSHALL: Objection as to form.

A. I think I can answer it. The first thing I need to say is apples, oranges, and kiwi fruit. The 23 cents in the consumers case was a cost of service derived analysis based on looking at the automated meter data for a few tens of thousands of customers or maybe 10,000 customers, and it was based on cost of service data.

My recommendation in that case and the -- I think the recommendation of the ALJ was that a value of solar studies should fall from that because cost of service analysis doesn't do it.

Second, it is jurisdiction specific because we're talking about the incremental value. So simply throwing out a state name doesn't necessarily provide you with valuable evidence. It just says, well, that is what they found there, and you really have to know what the incremental value of a solar kilowatt hour is against the systemwide mix in order to know.

And, third, I think the 4 to 6 -- I thought the 4 to 6 number is about solar credit value, not full value of solar value as if the customer was generating all of this electricity themselves, so -- like, through a net metering program. So there is a -- there is a sort of summing and totalizing problem in comparing those.

Will I agree with you that the number associated with credits under the proposed CEC program are lower than those value of solar numbers that you cited? Yes.

Q. (BY MS. TRIPLETT) And just one follow-up about your point about the summing, that that is just a credit that the participant gets, the rest of the value from the solar, if it's not reflected in the 4 to 6 cents of kilowatt hours, that rest of that money is going to the customers under the CEC program, right?

MR. MARSHALL: Object to form.

A. I can't exactly agree --

THE DEPONENT: I am sorry.

MR. MARSHALL: Just objecting to form, but you can answer.

A. I can't exactly agree with your assertion, because your question implies that that solar might be worth 10 cents, but those participants are only getting 4 to 6. We don't know what it's worth because the utilities, including Duke, have opposed doing value to solar analyses in Florida for as long as I remember and going back as far at least as the FEECA case that I cited I think a couple cycles ago, at least one-and-a-half cycles ago. So if we don't have a value of solar analysis in Florida, we don't know whether this credit represents the premium over retail or the full value or a fraction of the value, and there is no empirical basis for answering that question, as far as I know, based on the information we have.

I will not deny, and I will agree -- my lawyer will shoot me later -- that the company has done some analysis showing that based on its assumptions, especially about carbon and voided natural gas generation and fuel, that there will still be benefits that will occur to nonparticipating rate payers even after paying these incentives, these premiums, to the participating customer.

But my core concern is why a significant share of those benefits are being syphoned off for those participating customers and not being allocated to the nonparticipants who bear all the risk.

MS. TRIPLETT: Thank you. I think -- if you give me just two minutes to check my notes, I think I might be done.

THE DEPONENT: Oh, sure. That is always a

good sign.
(Recess taken, 2:46 p.m. until 2:48 p.m.)
Q. (BY MS. TRIPLETT) Okay. We can go back on the record. I just have two more questions. I think they're at the end in your answer. I think you said that this program assigns the majority of the benefits to participants. Did I mishear that?
A. What I said was that there was a -- if I did, I should be more precise. So I should -- what I should have said is significant benefits to participants and in the valuation of the program, there is value as forecast by the company, the upside if it actually avoids a natural gas plan and the upside of fuel if the prices are -- go higher than expected. So it's that -- those benefits are assigned in the calculus of net program benefits to nonparticipant rate payers. They're identified as benefits. I should be careful about where the majority of benefits flows or don't flow until I have rechecked the numbers.
Q. Well, let me see if I can refresh your memory. It's -- I believe that the majority of benefits actually flows to the general body of customers, maybe 85 percent of the benefits.
A. I do remember that assertion, and I think that, yeah, yes, I do believe -- I do agree that is the

company's position, because I obviously testified to a great extent on whether those benefits are contingent or guaranteed.

Q. Okay.

A. And what other -- some of the benefits of an ordinary flow if the company invested in these resources as systemwide assets would, in fact, be higher rather than the 300 million, you know, including the 300 million.

Q. And on that $300 million number, I think that is a nominal number, is it not?

A. I believe so, yes.

Q. Okay. And I think that the comparable number to the 300 million is the -- it's $2.6 million of benefits for the general body of customers?

A. Yeah, you know, I don't know. And to be honest with you, that is a whole different conversation, right, because, for example, you were talking about best practices and value of solar. We should use a social discount rate not a WACC discount rate when you are valuing societywide benefits. And I know this is somewhat new terrain sometimes for utilities to be getting into, but using a 6.7 percent WACC significantly devalues the future. It's been one of the fundamental problems with the way utilities bill fossil generation and other resources.

So you can't -- I can't automatically agree with you that they -- that there is an accurate real number that is based solely on using WACC -- the weighted average cost of capital, W-A-C-C, sorry, reporter -- it just -- it's not a valuable calculation when you purport to be assessing societywide values over a long period of time.

MS. TRIPLETT: Thank you. That is all of the questions I have. I don't know if others have questions, but I appreciate your time this afternoon. Thank you.

THE DEPONENT: Thank you. You're really good at this.

MR. MARSHALL: I know that staff has notice, so staff would be up next.

MS. LHERISSON: This is Bianca Lherisson for Commission staff, we do not have any questions.

MR. MARSHALL: Does anyone else have questions?

MS. EATON: Yes, I have questions, but I don't know the order, if I am supposed to go next or not. Is that okay?

MR. MOYLE: You're the first. Go ahead. I have a few questions, too.

MS. EATON: Okay.

EXAMINATION

BY MS. EATON:

Q. Sir, first off, I will say our power has gone on and off all day, our phones are off, so I am on my personal hotspot and everything. I hope that I can ask these few questions without anything going wrong, but if I get cut off, I will call right back. And please tell me if you can't hear me, okay? Like the questions -- or the things Dianne said earlier, technology, if you can't hear me or whatever, let me know right away.

Okay. My questions refer to the prehearing statement that was submitted yesterday by LULAC. Have you had a chance to review that, or did you review that before it was submitted?

A. I have not reviewed it.

Q. Okay. There were just two sentences in that filing that I will read to you -- and, Bradley, if I am reading them wrong, please step in -- but the reason is that I want to get your input on them.

The first sentence was on page 3 of the prehearing statement, and it says this -- and I am referring to CEC and program just as we have been doing all day. It says, "CEC will unjustly and unreasonably benefit participating customers, like Wal-Mart, at the expense of nonparticipants where hundreds of millions of dollars of essentially guaranteed subsidies will bill credits paid for by the general body of customers, including low income customers and LULAC members."

Do you agree with that statement?

A. Yes, I believe -- you're asking me, again, right?

Q. Yes, I am.

A. Yes, I believe that is a good summary, even if it's a pretty long sentence, of what I said out of my testimony.

Q. Sure. And I was going to ask, is that consistent with your testimony?

A. Yes, ma'am.

Q. Okay. And I believe that you have talked a little bit about the $291 million number throughout the day. I am not going to ask you a lot more about that. But I did want to ask, would you -- other than your testimony, your direct testimony and your exhibits and anything you have referenced in your direct testimony, would you rely on any other document or analysis for your opinion in this case?

A. No, nothing that I haven't disclosed, shared, or generated.

Q. Okay. Now on that particular statement or sentence that I just read really singled out Wal-Mart. Are you opining about any other customers that received what seemed to be unjustly or unreasonable benefits?

A. Yes, and I kind of want to apologize to you and to the company in particular. And unfortunately, I fall into a societal tendency of using Wal-Mart as a broad brush, and I do not -- and I am using it in that sense here. I am not singling Wal-Mart out. It is -- I have struggled to stay with participants and non-participants. And I know it's not worth anything in general, but in specific, you know, I have had a wonderful relationship working with Wal-Mart in other jurisdictions where they have been a true leader in advancing solar markets, and I admire and recognize the company's commitment to clean energy and to advancing its reliance on carbon-free sources of electricity.

So I do apologize for that, and when I cite Wal-Mart, it should be as an example that is more accurately meant to portray participants versus non-participants.

Q. Okay. Thank you, I appreciate that. And also along the lines of participants and non-participants, but would you agree that the participants in the CEC program if it is passed were also members of

the general body?
A. You got a little garbled there at the very end there. Would I agree the participants --
Q. Are also members of the general body of rate payers.
A. Oh, yes, of course. Thank you, yes.
Q. And then the other part of that statement or that sentence that I wanted to ask you about, and this may be or may not be your wording, and so that is why I am asking you, it said, quote, quote, "Hundreds of millions of dollars are essentially guaranteed subsidies..." and my question to you is what are essentially guaranteed subsidies? What would you characterize as essentially guaranteed?
A. Well, as to nominal amount and as a cents-per-kilowatt-hour basis, but as company's counsel, Ms. Triplett, pointed out a few minutes ago, the relative distribution of credits is ultimately dependent upon the number of kilowatt hours that each facility produces.
So to the extent there is a risk of under-production against forecast, there is -- it is not absolute guarantees of subsidies. It is only essentially guaranteed.
Q. Okay. Thank you for that. And by facilities

in your answer just then, you're speaking of the ten solar facilities that are anticipated to come online in the program if this approves?

A. Yes, ma'am, the 748 megawatts or the additional solar bill that is proposed through this program.

Q. Okay. Thank you.

There is another sentence which appears on pages 3 and 4 of the prehearing statement. And again, I will just read verbatim, it says, "Wal-Mart alone stands to make over $35 million from this program through bill credits paid for by the general body of customers."

Would you agree with that statement?

A. I actually don't have the math for that statement in my head, so I don't know whether I agree or not.

Q. Okay. Well, do you remember doing an analysis to come up with an amount that singling Wal-Mart out of that particular company would make from the program?

A. I am drawing a blank. I don't remember personally doing an analysis. I don't remember if I -- you know, remember seeing information that would support that analysis or, you know, did it as a percentage or something of the total subscription, so, no, I do not.

Q. Okay. Are you familiar with the term capacity factor?

A. Yes, I am.

Q. And would you agree capacity factor is a way to predict performance of a program over time?

A. Not really.

Q. And how would you --

A. It's often used, but for purposes like this, it's much more important to use the capacity value, which is a mapping of output to pricing as it varies over the hours of the year. Capacity factor is a crude average of KWH out against name plate possibility or potential across the course of the year. And with solar in particular, it tends to vastly undervalue solar's contribution to peak cost reductions.

Alternatively, I have also recommended the value of solar analysis use effective load carrying capability as a way of calculating capacity value for incremental solar. And I would point out that you could look no further than even PJM where -- the PJM market for a place in which the capacity credit assigned to variable renewables is much higher than the so-called capacity factor.

Q. And you're saying the capacity value is higher than the capacity factor?

A. Right, when you weigh the output by the value of the hours during which the facility is generated.

Q. Are you familiar with the National Renewable Energy Laboratory or NREL?

A. I used to be their biggest funder when I was a deputy assistant secretary and their neighbor here in the Denver area, so I am very aware of them.

Q. And are you familiar with NREL's Solar Estimator?

A. Yes, I have heard of it generally. I probably have plugged numbers into it once or twice in my life.

Q. Have you done the analysis or calculation for what the capacity factor is per NREL's central watts for Florida?

A. I am not aware of it.

Q. Do you agree that if one were just doing a capacity factor analysis, that if you use a lower capacity factor, it can -- the factor number, the percentage number using that number higher or lower can impact the results?

A. The results of what?

Q. Of trying to give out the capacity factor.

A. Okay. I am sorry.

MR. MARSHALL: Objection as to form.

Q. (BY MS. EATON) I am sorry. I am asking it really confusing. Sorry. I will ask another way.

If you were to view the capacity factor to do an analysis, over what period of time would you want to do it, if you were doing that sort of analysis for the CEC program?

A. If you are trying to determine the output of a solar generator in order to estimate sort of the value of the amount of energy created, then differences in the assumed capacity factor, the efficient -- the effective conversion ratio over -- you know, as related to hours of sunlight will change the estimate of -- and in order to calculate sort of a total value of the estimated output, you would use a timed scale that, as I -- and I believe I think I said before should match the useful life of the resource.

So with solar, I, you know, generally feel comfortable when a 25-year analysis is used. Does that answer your question?

Q. It does. I think earlier, you said something about 30 years. I know that was the life of the program here.

A. Right.

Q. Would you find fault if someone was doing that analysis over the course of 30 years of the life of the program?

A. No. Some friends of mine at NREL, the National Renewal Energy Lab, have told me that we're seeing 40-year and 45-year life on solar systems.

I would assume that if a utility was operating it, that it would be well maintained and should meet and exceed its warrantied life. So I think -- I don't think 30 years is unreasonable at all given relatively few moving parts.

Now with your variable tilt systems, you've got to make sure you keep those -- those are operating parts. You've got to make sure those are working. There are some contingencies out there, and there are also other variables that might be unknowns. But I will sum up by saying I think with a good utility managed solar facility or one managed by any other, you know, good owner or host or service company, 30 years is not unreasonable.

Q. Do you have any information regarding Wal-Mart's proposed subscription level in the CEC over 30 years?

A. I am not recalling specifically. I do know that somehow that number is related to an estimate of sort of the values based on some assumptions and subscription level, but I don't have it in my head.

Q. Okay. Would you accept, subject to check, that Wal-Mart would pay nearly a quarter of a billion dollars into the program at its preferred subscription level over 30 years?

A. I accept that, subject to check. I don't know what it means in relation to the total electric and energy bills of Wal-Mart, which must be many orders of magnitude bigger than that because of the size of the company, but I will accept that number, subject to check.

Q. And would you agree that there are no bill credit guarantees inherent in the program for participating customers?

A. Well, I think that there are -- the proposed tariff does have a bill credit and does have an increment of it going up and it's promised as part of the program. Is there an ultimate out on that? I assume so, but it's designed to provide a bankable bill solar credit and solar credit escalator by the terms of the tariff as I recall it. So we might be saying slightly different things.

Q. Would you agree if the capacity factor is lower, then the bill credits would be lower?

A. Because the bill -- because of the number of the -- sort of the numerator of the bill credits is going -- the number of bill credits that is generated changes with the output level that a -- it should be a direct correlation. Fewer units of output means fewer -- lower bill credits to distribute and share. Higher output leaves higher credits to distribute and share.

Q. And so the credit issue comes down to unit performance?

A. It does not just come down to unit performance because it is a bill credit and -- a bill credit and escalator are set in the tariff. So it is that times that. It also comes down to facility maintenance, it comes to the tilt, it comes down to solar radiance levels and whether those change over time that may change that may accompany global warming over the life of 30 years. So there is a lot of other things, but definitely I agree with you, performance is a big factor.

Q. And would you consider, you know, maintenance being tied to performance?

A. Yes. Maintenance is tied to performance, especially if there are -- if there is a risk of a lot of dust accumulation on the panels, if there are moving parts, such as single-axis tilt mechanisms.

Q. Right, so in essence, the tilt and the maintenance you are speaking of really do, as a whole, would go into the performance of the actual roof?

A. Yes, somebody ought to keep the thing running in tip-top condition. There is also inverter maintenance and replacement. Inverters fail more frequently or on shorter time scales than modules do, so there is that as well, and keeping the fire ants out of the electrical boxes, a whole bunch of other things.

Q. Sure. And would you agree that what is guaranteed under the program are the subscription payments made by the participants?

A. The payments are set, the credits are set -- you made it sound like that was exclusive. The payments are set, the credits are set, and the fact that nonparticipating customers must bear any of the risk of fuel price, gas generation, or carbon value risk. That is also set by the structure of the tariff.

MS. EATON: Okay. Thank you. Those are all the questions I have. Thank you.

THE DEPONENT: Thank you. We survived. Where are you located? Are you in Bentonville?

MS. EATON: No, I am in North Carolina.

THE DEPONENT: I heard there is big rain.

MS. EATON: It's very, very bad. It's fine right now, it's sunny; however, it knocked power out, ironically Duke Power, but it knocked it out of here and so our phones and everything went out. And so the building got lights back on but, you know, servers and all that are still messed up.

THE DEPONENT: Glad it went well, and I hope you guys keep your electricity. It's kind of important for life these days, isn't it?

MR. MARSHALL: Jon, you had some questions?

MR. MOYLE: Yeah, I don't know if Charles has any with OPC.

MR. REHWINKEL: None here.

MR. MOYLE: And Shaw doesn't have any either, right?

MS. LHERISSON: That's correct.

MR. MOYLE: Okay.

EXAMINATION

BY MR. MOYLE:

Q. So I am Jon Moyle, nice to meet you electronically. I represent the Florida Industrial Power Users Group, and I am going to ask you some questions. Largely, it's designed just to get some information --

A. Okay.

Q. -- at the high level.

I have been listening to you and you had mentioned that you are encumbered with a law degree; is that right?

A. Yes, sir. I actually have three of them.

Q. Okay, all right. So just -- I didn't see, maybe it was in there, but I didn't catch your educational background. Do you mind just sharing your undergrad and your law school degrees with us?

A. So I have a bachelor's in business administration in management from Texas A&M University. I have a juris doctorate with honors from the University of Texas School of Law. I have a master's in military law from the U.S. Army Judge Advocate General's School, and I have a master in environmental law from Pace University School of Law, now known as the Elizabeth Howe School of Law.

Q. Great, great. And so you spent a lot of time in Texas. I saw you worked for a utility in Austin; is that right?

A. Yes, sir.

Q. And is that a public utility, like a municipal utility, or can you just characterize that briefly?

A. Yes, Austin Energy used to be called the City of Austin Electric Utility, and it is a wholly municipally owned utility operating in or around the city limits of the city of Austin, Texas.

Q. Okay. And a couple of things. I know you had at one point in your testimony said that FPL's project compared to Duke's project, that Duke was double the size of FPL?

A. Yes, sir. Some -- I am using some gross calculations. Duke's was about twice as big.

Q. Yeah, just at a high level, how did you come up with that?

A. Well, I documented that in my testimony. There is a specific footnote, and let me see if I can quickly find it because I don't have it off the top of my head. Just a second. I am trying to remember which footnote.

Q. Footnote 5?

A. I think that may be right. Let me see.

Projected impact on the general body of rate payers is 125 million in 2021. And then citing to the solar docket, ultimate sales of 111 gigawatt hours, and I would have to check on the gigawatt hours, production gigawatt hours, a hundred and -- well, it's substantially bigger for Duke's. 40 gigawatt hours -- so I think the simplest way to do it is what I call sort of the perfect rate-making comparison of .0021 cents per kilowatt hour for the Duke program and .0011 cents per kilowatt hour for the FPL program in terms of impact, but that is based on running it through all of those production capacity numbers and other things cited in Footnote 5.

Q. Yeah, okay. All right. Well, there were a few things that I just listened to and made note of that I wanted to -- I wanted to better understand.

A. Yes, sir.

Q. RGGI, the Regional Greenhouse Gas Initiative, what is that?

A. It is a multi-state compact -- well, no, not from a legal point of view compact -- but an agreement, a voluntary organization of several of the states in the northeast, soon to include Virginia, Pennsylvania, and New Jersey, which sets a regionwide, hence, regional greenhouse gas initiative, a regionwide carbon emissions cap associated with electric generation units larger than 25 megawatts in capacity and a system of auctions of allowances which effective entities must purchase and retire according to pro rata shares based on production. It is a cap-and-trade system voluntarily entered into by -- it's nine-plus states now.

Q. And who runs that?
A. RGGI is run collaboratively by RGGI. It's -- each of the state members have participants and a RGGI board, and they hire a permanent professional staff that administers the program and verifies the retirement of required allowances and publishes annual reviews.
The states are each responsible for dealing with the revenues from the auctions, and in most cases, apply those revenues to fund energy efficiency programs rather than using public purpose charge or FEECA-type proceedings to get those energy efficiency programs run.
Q. Okay. You were asked some questions about net metering, and you made a reference to it being a rough justice. My impression of rough justice is it kind of equals out at the end of the day; is that fair?
A. Or it's -- it's an outcome that everybody can pretty much live with, even if not everybody gets everything they want, so I would modify it like that.
Q. Yeah, and did I understand you correctly when Ms. Triplett was asking you some questions about, you know, Florida provides for retail credit against a bill for energy produced in that metering, that you didn't think that was sufficient for kind of a net v. net

offset; is that right?

A. Well, what I said was it likely is not as big as the real value that the solar generation provides. That is especially so for customers who are on demand charges. They'll never make out quite as well, and that is probably all of your members. They'll probably never quite make out as well under net metering because net metering credits are applied volumetrically and don't tend to reduce demand charges.

But even with residential customers who typically receive both their demand and energy related costs through a volumetric or per-kilowatt hour rate, the body and value of solar analysis that I have reviewed suggests that the value contributed by that generation is greater than even the retail costs.

And as I said before, that is not surprising given that very few jurisdictions fully internalize all of the very real and externalized costs of electricity production, transmission and distribution, such as climate-related greenhouse gas impacts. So there is the full answer.

Q. Okay. Thanks. In part of your testimony, I think you were making a point about the RECs involved here, that they are provided to participants and then they can be retired. And you seemed to suggest that there was some variability about, you know, the value of RECs depending on the amount of carbon that exists in a particular area. Did I get that right?

A. Well, I don't think I specifically said it, but that is true. We generally try to -- we generally estimate the value, the carbon value of a REC based on the emissions in a void. We try to look at either utility or regional system emissions rates in order to value that.

We also might see a different value of carbon associated with the difference in the kind of generation, if one looks at marginal emission rates. For example, in a coal-heavy state, wind RECs might have higher carbon value because wind often runs at night when carbon is the marginal resource. But in a gas heavy state, if coal is not on the margin and gas is on the margin, then the marginal value of a voided emissions is related to gas coming online.

So there is a couple of factors that go into valuing it, and there are brokers all over the place who -- and a pretty thriving market, you know, in the probably hundreds of millions of RECs transacted that assign value and use the market to achieve a price by vintage location of generation and other factors.

Q. Yeah. Do most REC markets that you are familiar with, are they limited to generation of electricity? Or are there other abilities of something like a solar asset to offset carbon coming from a bus leak?

A. Generally speaking, when we're talking about renewable electricity, we're talking about RECs from electric generation. When it comes to other forms of carbon emissions -- sources of carbon emissions, generally speaking, we see people speak in terms of carbon offsets, which often leads some people to use the shorthand of car miles avoided or trees planted as an effort to try to quantify the carbon.

There are protocols and approaches for translating RECs into offsets and offsets into REC value, but generally, those move in two different markets.

Q. Yeah, and I think Duke's counsel asked you about did you make any effort to value the RECs involved in this proposal. I think you said no; is that right?

A. I did not. But the point I was making and I want to stress is the word I used was disaggregation. I don't know of any situations in the United States at all where anyone is transacting and selling to say, you know, the subscribers in this program RECs that have had the carbon value disaggregated. And what I was talking about is the company appears to have asserted in its rebuttal testimony that if one of your members is a subscriber, they're not going to get to claim carbon credit because the company is going to keep that when it transfers the RECs to them, or, as I kind of assumed before I read that rebuttal testimony, the carbon credit claim associated with the RECs would remain aggregated, in which case it would not be fair to say, absent a specific structuring and a compliance program as I explained, it would not be fair to say that nonparticipating customers receive the carbon -- avoided carbon benefit, because under my initial assumption, all of that would be transferred with the REC.

One final point I need to make is that -- and maybe it's a nuance, but it has to do with accounting, the company is -- as I understand the way the company has structured the program, for all but the larger customers who already have North American Registry accounts, the company plans to retire those credits on behalf of the subscriber customers. There is nothing wrong with that. I have done that, too, and it still assigns the claim to that customer.

But the distinction that I raised in my

testimony is that for those very large customers with North American Registry accounts, they can request and the company will transfer the RECs into that account, after which the disposition of those RECs is up to the owner of the account, and absent any restriction in the tariff, and there is none, they can do whatever they want to with them. They can sell them for cash. Like I said, they can use them to offset emissions from another location. They can do anything they want to with those credits after they have been assigned to their account.

Q. And the organization you're speaking of, it's not a governmental-run organization, correct?

A. No, the North American Registry is a private registry function adjunct to some brokerage-type functions. Registries are commonly used for the purpose of providing tracking and claim integrity services, because, of course, you can't see a REC, so you need some way of documenting it, you know. As a pure editorial comment, this is what all the buzz about block chain is in the electricity industry. And, there, I said it, block chain.

MR. MOYLE: Yeah, okay. Well, no, I appreciate you spending just a couple of minutes answering those questions, and thanks for your time.

THE DEPONENT: Oh, thank you. It was fun.
MR. MARSHALL: Are there any questions from Vote Solar, Kate?
MS. OTTENWELLER: This is Katie Ottenweller. I just have a couple of things, unless, George, do you have anything? Would you like to go first?
THE DEPONENT: I don't see George anymore.
MS. OTTENWELLER: Okay. I think George might have signed off.

EXAMINATION

BY MS. OTTENWELLER:
Q. Okay. Just a few questions. And for the court reporter, this is Katie Chiles Ottenweller with Vote Solar. Nice to see you again.
A. Nice to see you again, hear your voice.
Q. So one thing, we had some conversations about net metering, and I just wanted to get some clarity on what your testimony is in this proceeding. You are not testifying that net-metering customers are somehow being subsidized by non-net-metering customers in Florida, correct?
A. I am absolutely not. In fact, as I stated, in the vast majority of situations that I have looked at, net-metering customers actually subsidize the general body of customers by virtue of the fact that

they make a private investment in the facility and that they typically receive a compensation credit that is below the full value of solar.

Q. Thank you. And we have also talked a little bit about efficiency programs. Would you say that you support utility-funded energy efficiency programs?

A. Absolutely. It's the least-cost resource any utility can procure and should be the first resource they procure in meeting customer requirements.

Q. And those programs are funded by all customers, correct?

A. They typically are. They passed the cost-effectiveness test usually in a screening, in the more backwards states using something like the rate payer impact measure test, which is not actually a cost-effectiveness test. But there is -- yes, there are resources procured on behalf of all customers, if I see where you are going here, in which case, some customers actually receive the energy efficiency measure, and everybody else pays for it because it is a systemwide resource benefit that comes in terms of a voided generation.

Q. So to say it another way, the non-participating customers are subsidizing efficiencies of participating customers, correct?

A.   Oftentimes.
Q.   Even short-term?
A.   Yeah, oftentimes -- I am -- I am catching on the word subsidy, but they are paying for the production of benefits that are realized through the harvesting of energy efficiency from a customer, so from a different customer.

So the important distinction here is where and how energy efficiency benefits are created. And so I am not willing to extend the analogy to utility scale systemwide generating resources. The more apt analogy, I think, or extension of this logic would be whether it is reasonable for nonparticipating customers to subsidize net metering versus subsidizing the allocation of credits from systemwide resources to participating customers, but I get your point.
Q.   Sorry. I think I lost you.
A.   Well, okay. So there is a structural difference in how energy efficiency works in the CEC program. It's not an energy efficiency program, per se, right?

And while customers who get -- let's just use a very simple example. Let's say the utility gives a $2 light bulb for $1.50 to an energy efficiency program, I mean, in other words, they give them a 50 cent coupon on a light bulb and they recover that 50 cent cost from every other customer. That program is assumed to have passed a cost-effectiveness evaluation. It turns out that that 50 cents saves more in generation used to serve that customer, the customer who receives the light bulb, than the general body of rate payers would have had to pay to otherwise provide that electricity. That makes it a superior resource choice.

The difference with this program is that other than that 50 cent cost and the associated system-wide benefit, let's say it's 51 cents, the program just barely passed cost effectiveness, it generated system-wide benefits of 51 cents, cost 50 cents to put the light bulb in in the first customer's premises, in this program the utility is planning to take that extra cent or some part of that extra cent and give it to a different customer or to itself or maybe back to the other customer rather than have the full 51 cents accrue to the benefit of all customers.

So it's using that extra savings. It's allocating a share of that extra systemwide savings, the benefits, in terms of a privatization of the REC benefits as I described, the hedge value of providing a stable, guaranteed stream of solar credit benefits to a select number of customers while socializing the carbon, the gas generation, and the gas fuel risks to the rest of the body of rate payers.

If the system -- if that light bulb in my silly example fails to save as much money as Customer 1 expected on their electric bill, they're ones who are out. If the customer fails to turn on or -- turn on that light bulb or screw it in or install it, they're the ones who are out of that savings.

In this case, all of the risk is still assigned and socialized to the rest of the body of rate payers. So there isn't -- in my view, there is an unnecessary allocation of 300 -- $291 million worth of benefits to participants and an unjust allocation of risk. So I like superficially the efficiency versus subsidized community solar voluntary program as a simple analogy, but I don't think it holds up. It's not especially in a state that has systematically gutted its energy efficient programs over the last decade that I know of.

Q. But you do agree that if I install an LED light bulb, I am going to see some significant savings as a direct participant in that --

A. Yes.

Q. -- on my utility bill?

A. Yes, and, in fact, LED light bulbs are such a good deal, you shouldn't even need a solar subsidy. Although, maybe your household budget is tight. But if you are a money-making large corporation or a tax -- an entity that can collect taxes and make investments like that, then you should be going down to the light bulb store right now. And you shouldn't need $300 million from captive rate payers to improve the lighting condition in your business or factory, in fact, most don't.

Q. And are you -- there has been a lot of back and forth on the numbers, so I just want to get clarity.

Are you disputing that nonparticipating customers are paying about $300 million over the life of the program in exchange for $2.6 billion in non-discounted benefits?

MR. MARSHALL: Objection as to form.

A. So the point I am making is that if the utility company were doing its job, it would be procuring $2.9 billion worth of savings for the general body of rate payers and not privatizing $300 million of those benefits for a select group of participants and assigning all of the environmental benefits to those customers and assigning all of the risks of those benefits actually being realized to the non-participating customers.

So is there $300 million of sort of incremental costs against 2.6 billion in revenues? Yes, but it could be 2.9, and it would be 2.9 if the company procured the least-cost resource on behalf of all of its customers and didn't require customers to pay a private benefit tax in order to get those 748 megawatts constructed.

Q. (BY MS. OTTENWELLER) Okay. Thanks. And I know there was a little bit of talk about FPL Solar Together program, and you stated you were familiar with some of the details but maybe not all of them. So I will ask you a question, if you don't know the answer or aren't familiar with this, that is fine. But are you aware that FPL stated during its Solar Together hearing that its program had passed the RIM test?

A. No, I am not, but I would assume it would.

Q. Okay. Thank you.

A. The numbers like we were just discussing would bear that out. But let's stop calling the RIM test a test. We have had that conversation.

MS. OTTENWELLER: Thank you. No further questions.

MR. MARSHALL: Okay. I think that is it from the other parties. I had a couple of follow-up questions.

THE DEPONENT: Sure.

MR. MARSHALL: Unless you needed a break.

THE DEPONENT: No, I am good. Let's power through it.

EXAMINATION

BY MR. MARSHALL:

Q. This is in following up to Duke's questions regarding interrogatory number 19 and the low fuel, no carbon cost scenario.

A. Okay. Let me get it back open and -- which number 19?

Q. Nineteen, if I could also direct your attention to one of your work papers, it's a long one, long name, all caps CEC-LULAC Bates Rog number 17 POD number 14 --

A. I got it. We matched on that many digits and letters. Okay. So that spreadsheet is in front of me as is 19.

Q. And if I could direct your attention to the tab on that spreadsheet, Tab 5, no CO2, low fuel.

A. Number 5, no CO2, low fuel, yes, sir.

Q. And what is the information being presented on this -- this portion of this tab?

A. Okay. So this is an attempt to have a look at that cost effectiveness evaluation that the company provided in TGF-1, I believe, was the exhibit, but then to see what the numbers yield if you strip out those assumptions about CO2 credit value and about -- and then to use a lower fuel-cost assumption rather than the mid-level, which, as memory serves, subject to check, was calibrated at 15 percent below the index fuel forecast that the company used to set up the main table.

So you will see those changes in -- with that -- if the spreadsheet is in front of you on, Tab 5, you will see, for example, column K has italicized numbers. I tried to remember to italicize everything that I thought -- that I changed. And this uses the numbers that are sourced from a company information source of what the fuel values -- the fuel costs -- avoided fuel cost would be, the system fuel costs avoided would be under that low fuel scenario, summing to, what is it, 19 variant, I guess, at the bottom.

Then moving over to column N, assigning zero value to avoided CO2 emissions, in other words, saying that if there is any value, it's all upside value and we're not going to assume base, extending that through the sets, so there is three sets going here, right, there is the no clean energy connection, the clean energy connection, and then the net difference table. And that just -- all that does, the third one, the net difference, which is A, alpha, golf, AG through alpha, uniform, AU, and just showing how the revenue requirement changes and other factors change and the allocation of costs and benefits changes in that fourth little section over there.

And the final sort of summation of all of that is the net program participant costs or savings under the heading in column bravo, hotel, or BH, with the indicator Rabago Analysis in bravo, hotel 7, that shows that basically the participants' cost is 67 million on an MPD basis using the utilities WACC as the discount rate, compared to column bravo, delta, and so bravo, delta 4, 7, where the costs on an MPV basis to keep things equal to the general body of customers is 93 million, which the big takeaway is that the proper -- the nonparticipant benefits exceeding participant benefits calculus is fundamentally dependent on the fuel and CO2 value assumptions and actually disappears and inverts if those two major assumptions are taken out.

The reasonableness of doing that is, you know, not my call, but because so much value hinges on those assumptions, this spreadsheet attempts to give us the distilled-down essence of where the program costs and benefits go. Does that help?

Q. Yes. That helps a lot. And so is that $93.9 million in column bravo, delta, the general customers, under the new CO2 low fuel scenario, is that 93.9 million in costs to the general body of rate payers or savings?

A. It's in costs to the general body of rate payers. And you can kind of tell that because we know from the general program structure that nonparticipant customers have to shell out a lot of money for these plans while the participating customers get their credits to get that seven-year payback.

So you can see that the shelling-out period extends from bravo, delta 14, which is associated with year 2021 -- 2021, and goes for many more years, right? It continues all the way down, they're shelling out -- they're cash flow negative all the way to 2023 before they start realizing those -- some of those systemwide benefits that are associated with solar as a superior resource that start at occurring in later years. And, because, of course, the WACC is applied those later-year benefits are worth a lot less, so you end up with a net positive cost of $93.92 million.

Q. And so just because there was a little confusion during Duke's questioning, I direct your attention back to interrogatory 19 and the $26.3 million you speak of there, the costs of the program and the costs of 93 -- or the $93.0 million to the general body of customers, are those costs or benefits under the low fuel, no carbon cost scenario?

A. So what -- yeah, I will just say sort of what I said. Those are costs. The value of the subsidy is equal to -- the value of subsidy is a different number, the 67.7 million, and that is still being paid out because the 26.3 is the difference between the 92 and the 67 -- the 923.92 and the 67.58. So that is how you get to that cumulative present value requirement of 93 million, and you still have the $67.7 million subsidy. So hopefully that clarifies it.

MR. MARSHALL: Yes, thank you. That is all the questions I have. I don't know if Dianne has any follow-up?

MS. TRIPLETT: No, I think we're all ready to get done, so thank you.

And I don't -- I assume you'll read, and I would like to order a transcript. I don't need it to be expedited, but can you maybe give me an idea, Madame Court Reporter, what a nonexpedited transcript, the timing would be?

THE REPORTER: We show our due date as being November 12th.

MS. TRIPLETT: Does anyone know when the date for the exhibits has to be in?

MR. MARSHALL: I want to say it's November 7th, ten days before.

MS. TRIPLETT: Okay. Well, in that case, I guess I need to order it expedited.

MR. MOYLE: It's been seven days before uniformally.

MS. TRIPLETT: Madame Court Reporter, can I please order it expedited?

MR. MOYLE: Can you just list it without providing copy of it? We are off the record, aren't we?

MS. TRIPLETT: Oh, I should have said, yes.

(Discussion off the record.)

MR. MARSHALL: We will take a copy, and we're reading.

MS. TRIPLETT: And I will take a copy.

WHEREUPON, the within proceedings were concluded at the approximate hour of 3:54 p.m. on the 29th day of October, 2020.

* * * * *

I, KARL RABAGO, hereby certify that I have read the above and foregoing deposition and that the same is a true and accurate transcription of my testimony, except for attached amendments, if any.

Amendments attached ( ) Yes ( ) No

__
KARL RABAGO

The signature above of KARL RABAGO was subscribed and sworn to or affirmed before me in the county of__________, state of Colorado, this___ day of_____________, 20___.

____
Notary Public
My Commission expires:

In Re: Duke Energy Florida, 10/29/2020 (jg)

REPORTER'S CERTIFICATE

STATE OF COLORADO)
) ss.
CITY AND COUNTY OF DENVER)

I, JACQUELYN R. GALLO, a Registered Professional Reporter and a Notary Public ID 20034039981, State of Colorado, do hereby certify that previous to the commencement of the examination, the said KARL RABAGO verbally declared his testimony in this matter is under penalty of perjury; that the said deposition was taken in machine shorthand by me at the time and place aforesaid and was thereafter reduced to typewritten form; that the foregoing is a true transcript of the questions asked, testimony given, and proceedings had.

I further certify that I am not employed by, related to, nor of counsel for any of the parties herein, nor otherwise interested in the outcome of this litigation.

IN WITNESS WHEREOF, I have affixed my signature this 2nd day of November, 2020.

My commission expires November 24, 2023.

_X_ Reading and Signing was requested.

___ Reading and Signing was waived.

___ Reading and Signing is not required.

Jacquelyn R Gallo
____
JACQUELYN R. GALLO
Registered Professional Reporter

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