BEFORE THE
FLORIDA PUBLIC SERVICE COMMISSION

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In the Matter of:

DOCKET NO. UNDOCKETED

REVIEW OF TEN YEAR SITE PLANS OF ELECTRIC UTILITIES.

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PROCEEDINGS: COMMISSION WORKSHOP

COMMISSIONERS PARTICIPATING: CHAIRMAN ART GRAHAM
COMMISSIONER JULIE I. BROWN
COMMISSIONER DONALD J. POLMANN
COMMISSIONER GARY F. CLARK
COMMISSIONER ANDREW G. FAY

DATE: Thursday, October 3, 2019

TIME: Commenced: 1:47 p.m.
Concluded: 2:32 p.m.

PLACE: Betty Easley Conference Center
Room 148
4075 Esplanade Way
Tallahassee, Florida

REPORTED BY: ANDREA KOMARIDIS
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P R O C E E D I N G S

THE CHAIRMAN: All right. It is still Thursday, October the 3rd. And this is the PSC workshop for the review of the 2019 ten-year site plan.

Staff, walk me through this.

MS. WEISENFELD: Good morning, Chairman and Commissioners. Ashley Weisenfeld on behalf of Commission staff. By notice issued on September 19th, 2019, this time and place was set for a Commission workshop to review the ten-year site plans of electric utilities.

The purp- -- purpose of the workshop is set out more fully in the notice.

MR. WRIGHT: At this time, we would welcome Stacy Dochoda to present her FRCC 2019 Load and Resource Plan.

MS. DACHODA: Good afternoon, Commissioners. My name is Stacy Dochoda. I'm the president and CEO of the Florida Reliability Coordinating Council. Thank you for inviting me here this afternoon to present the results of the 2019 ten-year site plan.

THE CHAIRMAN: Welcome back.

MS. DACHODA: Thank you. Good to be back.

FRCC is a non-profit company that was formed in the 1970s. Our vision is to maintain a highly-reliable and secure bulk power system for peninsular Florida. We have about 20 members. And those members are largely utilities in Florida, including the investor-owned utilities, the municipalities, and the cooperatives.

FRCC carries out our activities on behalf of these members, including being the reliability coordinator for Florida, just like being the air-traffic controller of the electric grid, and also being the planning authority. Along with other planning authorities in Florida, we develop the long-term transmission plan and do other planning activities for Florida.

I'll cover the 2019 FRCC Load and Resource Plan, included the -- including the utilities' integrated-resource-planning processes, the load forecasts and generation forecasts, reserve margins, and fuel mix.

And then, in addition, I'll address two other topics; one, reliability considerations of utility additions of solar generation; and the other, the natural-gas infrastructure in Florida.

This slide provides a summary of the results

of the 2019 Load and Resource Plan. Over the next ten years, both demand and energy forecasts are slightly lower in the 2019 forecasts than they were in the 2018 ten-year site plan.

On the supply side, we have over 12,000 megawatts of new firm generation planned. And our planned reserve margins are above 20 percent in every year of the ten years.

Energy-efficiency codes and standards continue to play a very significant role, and they're projected to reduce peak demand by 5.7 percent by 2028. DSM also continues to be a significant component of reserves. And finally, I'll highlight that renewables are projected to increase from 2 percent today, on an energy basis, to 12 percent in 2028.

I'll start the Load and Resource Plan by focusing on a discussion of the methodology used. This slide shows a schematic of the utility's integrated resource-planning process.

The utilities will begin by looking at the forecasts of demand and energy into the future, and they'll also look at their existing resources, including plans for modifications to their units, also looking at retirements and any purchase-power

contract expirations.

So, by looking at the forecasted needs for demand and energy and comparing to their existing resources, they identify whether or not they have additional needs by comparing that to a reserve-margin target.

If there are resource needs identified, they will examine supply-side options. They'll also look at demand-side options and, in doing that analysis and evaluation, they'll consider the cost and operating data of those options. And the result of all that work is the integrated resource plan for each utility.

This next slide, then, shows how each utility's integrated resource plan flows into the utility's ten-year site plan. And at FRCC, we take all of the utilities' ten-year site plans and aggregate that data to provide this work in presentation to you today, but we also use this data at FRCC and among our members to develop planning models and do reliability assessments that we use both with our members in FRCC, and we also supply that to our other reliability regulators, NERC and SERC.

The 2019 ten-year site plan shows that firm

summer-peak demand is slightly lower than 2018, as I said before, and it's growing at just a little over 1 percent per year. Forecasted energy sales are also below the 2018 ten-year site plan. And these are growing at a little slower rate, under 1 percent, at 0.8 percent per year.

Demand response is reducing summer-peak demand in -- by 2028, by 6.4 percent, and energy efficiency -- I've broken this out into two pieces; one, reductions from mandated codes and standards that are projected to be 5.7 percent by 2028; and utility-sponsored energy efficiency and energy conservation, which are projected to reduce demand by 1.4 percent by 2028.

There are several factors that impact the load forecast. I'll start with Florida unemployment, which continues to decrease. If you look back to 2013, Florida unemployment was at 7.3 percent. By April of 2019, when these ten-year site plans were filed, unemployment had dropped to 3.5 percent.

Population growth continues to be strong and is projected to be strong. Since 2013, population growth in Florida has been about 1.7 million; however, the wage-and-income growth have not kept up with the employment growth and the population

growth. So, that has dampened the forecast.

Another dampening factor has been the energy codes -- energy-efficiency codes and standards that I mentioned earlier. And then, in addition, we are seeing in the forecast the impact of online commerce reducing commercial-customer forecasts.

A more-recent impact in the forecast is electric-vehicle demand. We're showing that, by 2028, electric-vehicle demand impacts demand by about 500 megawatts or about the size of a large power plant.

This slide shows the comparison of the 2018 and 2019 ten-year site plan for the firm peak-demand forecast year by year. And it is important for me to note this is the firm-peak forecast. It is assuming that demand-side management, direct load control, and energy efficiency are in place and implemented.

You can see that the red line, which is the 2019 forecast, is -- sits below the 2018 forecast. It's about 1 percent below. It does grow at a rate of about 1 percent.

And again, the reasons -- reasons for the decrease in this forecast are really the stalled median income, the energy-efficiency codes and

standards, and the impact of online commerce on the commercial sector.

So, next, I'll -- oh, sorry. I have to go back a few. Let's go there.

Next, we'll look at the energy forecast. And here you can see the green line is 2019, the gray is 2018. And these are very similar from year to year. The forecasts are essentially the same, including the growth rate.

Now, this slide -- we're on Slide 12 -- now, this shows a comparison of the -- what a trend line for the last 20 or so years, looking back at historical data -- what that trend line would predict that the summer-peak forecast would be.

So, you can see that dotted line off to the -- to the right on the chart is the trend line from that historical data. And the red line that's shown below that -- that is our firm demand forecast. So, that's assuming that direct load control and energy efficiency are activated or in place.

The orange line is without the direct load control. So, you can see, on the firm basis, it is a little bit lower than the trend line, but if -- if you weren't activating demand response, then it

would be actually quite close.

Okay. Now, I'm going to drill down a little more into the demand forecast. And this shows, year by year, the red line showing the firm demand forecast. So, again, that's assuming that demand response is activated and that the energy-efficiency programs have taken place.

The orange line in the middle is assuming that the demand response has not been activated. And then the yellow line on top is assuming that neither have been activated.

You can see the fairly-large gap between the orange line and the red line -- that's the impact of demand response that I mentioned before, about of 6.4 percent on average, reducing demand.

THE CHAIRMAN: Quick question for you.

MS. DACHODA: Sure.

THE CHAIRMAN: Commissioner Brown.

COMMISSIONER BROWN: Thank you. I hope you don't mind interrupting --

MS. DACHODA: No, that'd be fine.

COMMISSIONER BROWN: -- the presentation.

MS. DACHODA: Sure.

COMMISSIONER BROWN: I'm curious -- different market pressures influencing demand. You talked

about a few, but what about weather? How does weather factor into -- looking at the -- even summer-peak demands.

MS. DACHODA: Sure. No, that's a great question. The utilities -- when they create their forecasts, they do use what I would call normalized weather. So, they look back -- various ones -- utilities use different time periods. They might look back 20 years. They might look back 30 years. And they normalize that weather to say if -- if I had what I think is on-average weather, what should be should my forecast be.

So, of course, we never experience actual weather. And so, that's why it's difficult, frankly, to look -- if you look at what actually happened, compared to the forecasts, you would really have to know, well, what was the weather like in that actual year to make an apples-to-apples comparison.

COMMISSIONER BROWN: Thank you.

MS. DACHODA: Uh-huh. Okay. This chart on Page 14 is the historical compound average annual growth rate. I think the main takeaway from this is just noticing how much the growth rate has changed since the nineties and early 2000s. Back

then, it was two -- up 2 to 2 1/2 percent. Now, we're seeing 1-percent growth rates.

And finally on the forecast side, demand side, I just highlight that, again, the FRCC area remains the highest area where demand response is a percentage of peak demand.

COMMISSIONER BROWN: Sorry for interrupting again. Just I -- I've heard that, like, the world growth rate is at 2 percent. So -- and we -- we are constantly hearing Florida growth rate -- I mean, we're third, now, in the nation in terms of population growth.

1 percent -- and it looks like it's dipping for 2019. It just doesn't really seem to measure with what we're hearing.

MS. DACHODA: Right. I -- I think that's what we see in the data is that very significant impact of those energy-efficiency codes and standards -- they're really -- each -- each year, if you look back at our ten-year site plans, forecasts have dropped a little bit each year. And I think that's really been --

COMMISSIONER BROWN: Okay.

MS. DACHODA: -- the case. And so, we do show -- while we show customer growth, we do show

the average use per customer declining.

COMMISSIONER BROWN: That's where the factor is. Okay.

MS. DACHODA: Exactly.

COMMISSIONER BROWN: Thank you.

MS. DACHODA: Uh-huh.

So, now I'll turn to the generation or the supply side. And it -- again, in summary, we do have 12,000 megawatts of new generation planned. We have 4,000 megawatts of firm solar within that. And our planned reserve margins are projected to be above 20 percent over each of the ten years, and demand-side management is projected to contribute significantly to those reserves.

So, I'll drill into that a little bit. This slide shows the projected total capacity by year. And you can see the -- in the middle -- essentially you can see the additions that are coming in. At the bottom, you can see the retirements.

The net of those numbers -- again, we have 12,000 megawatts of new generation coming in; 8,100 megawatts of that is natural-gas generation; 4,000 of firm solar; and about 2,600 megawatts of retirements over that ten-year period.

Okay. This chart shows the incremental

generation over each year, but by fuel type. So, in the red, you'll see the natural-gas additions, the green are solar, and the blue are changes in coal.

Looking at nuclear generation -- we're projected to stay steady there. We're at about 3,600 megawatts today. There's one planned upgrade at Turkey Point in 2020 for 20 megawatts.

Now, combining the load forecast and the generation, we can calculate the reserve margin. And that's what this chart shows. The red bars are the summer reserve margins. The blue are the winter.

And we also show the 15-percent target that FRCC has and the 20-percent target going across in the red line for the IOUs. You can see that we do show that the planned reserve margin, based on firm load, is above 20 percent in each of these years.

So, again, this does assume that load control and energy-efficiency programs are in place and have been exercised.

THE CHAIRMAN: I've got a question for you.

MS. DACHODA: Yes.

THE CHAIRMAN: Why is there a difference between the FRCC's reserve margin and the PSC

reserve margin?

MS. DACHODA: You know, I -- I don't know the history behind the PSC -- I understand there's a stipulation with the IOUs on the 20-percent target that predates me, but some of our utilities do use a little bit lower target, and the FRCC target has -- for our region has been 15 percent.

THE CHAIRMAN: And how -- how long has it been 15 percent? Do we know how far back?

MS. DACHODA: It goes back at least seven and a half years, before me.

(Laughter.)

THE CHAIRMAN: Fair enough. Thank you.

MS. DACHODA: Sure.

So, then this chart looks the same, but it's -- it's a little bit different calculation. This is planned reserve margin, but now we've assumed that demand response is not exercised and that the utility energy-efficiency programs have not occurred.

And so -- and then some people would call this the generation-only reserve margin. So, here, we do know that the summer-reserve margins in 2019 go from about 17 percent down to about 14 percent in 2028.

Next, I'm going to turn to some graphs on fuel mix.

COMMISSIONER BROWN: Can I just -- are you -- thank you for allowing me to interrupt you.

MS. DACHODA: Sure.

COMMISSIONER BROWN: I'm curious about those reserve margins. And obviously, you're involved on a national level, I'm sure, in different industry groups.

What is -- do -- what is a typical national reserve margin, in the -- let's just say even in the southeast region -- because we're different, obviously, than the northeast.

MS. DACHODA: Right. Right. I -- I think in the range of 15 to 20 percent is -- is very typical. And there's -- there's no magic law of science around this number, but I think it's -- that's a number that tends to allow for the changes that you're going to see over those ten years, changes in load growth that may vary from forecasts, changes in generation additions that may vary from forecast because that's really what that reserve margin is intended to allow for that we can't predict those futures exactly.

COMMISSIONER BROWN: And that -- that

number -- does that include DSM programs or not?

MS. DACHODA: Well, that's a good question. I think for -- we do have a large amount of DSM, which both provides that flexibility on, you know, a real-time operating basis. It provides that extra tool that we can use to -- to meet firm demand.

But those -- those other areas -- I have quite a bit of experience in Texas, and there, there's also, similarly, demand response and lots of large interruptible customers that -- that figure into that. So, I don't think that we're unique in that -- in that regard.

COMMISSIONER BROWN: Thank you.

MS. DACHODA: Uh-huh.

Okay. So, I'm going to spend a little bit of time on fuel mix. And the first pie charts that I'll show you are on a capacity basis. And here you'll see in the blue part of the pie, as we go from 2019 to 2028, that the percentage of capacity coming from natural gas stays constant at 74 percent.

You'll see that coal is projected to decline from 12 percent to 8 percent, in the yellow. And in the red, you'll see, on a capacity basis,

renewables going from 3 percent to 8 percent.

Then I'm going to dive a little bit in on this pie chart to just looking at the renewables and the components of that -- the renewable mix, again, on a capacity basis. And here, you'll see that solar is projected to increase from 68 percent of renewables in 2019 to 93 percent in 2028.

And just to highlight a little bit more about the changes we've seen in projected solar over the last few years, this bar chart shows the last three ten-year site plans. So, the 2017 is in yellow, the 2018 in green, and the 2019 in red. And you can see the growth in solar that's been forecasted in those ten-year site plans.

Our site plan this year, 2019, is about 40 percent higher than the 2018; and the 2018, was almost double the 2017. So, we have seen dramatic growth in those forecasts.

Now, these pie charts are going to be on an energy basis, but similarly looking at fuel mix. And here, you'll see that natural gas is projected to go from 69 percent to 65 percent, in the blue; coal, in the yellow, is projected to go from 12 percent of energy to 8 percent, in the yellow; and renewables, in the red, from 2 percent to

12 percent on an energy basis.

COMMISSIONER FAY: Mr. Chairman, can I ask a question?

THE CHAIRMAN: Go ahead.

COMMISSIONER FAY: Thank you.

I pulled your -- the chart that we had from last year for this. And it looked like for -- when you go from 2027 to 2028, the renewable side goes from 8 percent to 12 percent, in one year. Is that just all the solar growth?

MS. DACHODA: Could you -- could you just --

COMMISSIONER FAY: Yeah, so --

MS. DACHODA: -- recite that again?

COMMISSIONER FAY: So -- so, your chart from 2018 to 2027, that was presented last year -- your -- the -- it's at about 250,000 gigawatts. It's at 8-percent renewables in that -- in that pie chart. This year, it's 12 percent. So, in one year, there's a 4-percent growth in the overall portion of renewables.

MS. DACHODA: You know, I'm sorry, I'm going to have to get back to you. That number doesn't really ring a bell for me for --

COMMISSIONER FAY: Okay.

MS. DACHODA: I thought, last year, we were

showing about a 2 to 3 percent --

COMMISSIONER FAY: It was a huge jump. That's why --

MS. DACHODA: Yeah.

COMMISSIONER FAY: That's why I thought -- yeah. Okay.

MS. DACHODA: I'll -- I'll -- I'll check back and get back with you.

COMMISSIONER FAY: Okay. Thank you.

COMMISSIONER CLARK: I wanted to follow up on one question as well. Looking back at your firm capacity -- and it's something that's very interesting, to me. Looking at the amount of solar that you're counting toward firm capacity of 5,008 megawatts and 93 percent -- so, 4,500 megawatts of -- of our total generation mix is firm solar --

MS. DACHODA: Let -- let me -- let me make sure we're saying the same thing. This chart is just the renewable portion of our portfolio.

COMMISSIONER CLARK: Right. I understand.

MS. DACHODA: Okay.

COMMISSIONER CLARK: So, how much actual installed capacity is there for us to calculate and count 4,500 megawatts of firm capacity?

MS. DACHODA: Right. So, the actual nameplate

of the solar that is translating to 4,000 is about 10,000 megawatts.

COMMISSIONER CLARK: So, you're giving 50-percent allocation to that and -- toward firm capacity.

MS. DACHODA: Right. That's -- that's how the utilities are calculating that. Now, it's -- one of the notes that some of the utilities made as they were preparing their ten-year site plans, is we are definitely learning what that contribution to peak is going to be. So, it's possible that that could grow; it's possible it could decline, as we learn more about what the solar contribution to peak would be.

But our -- the utilities' best estimates right now are -- are in those numbers.

COMMISSIONER CLARK: And one other question. Just looking back -- I think it was in the -- in the reserve margins. I think the Chairman asked a question about looking at some differentiation. We talked about the other states and how they calculate reserve margins.

When you look at the requirement and need to have reserve margins, your load forecast, you stated earlier, uses normalized weather. The

significant difference in the amount of actual capacity, reserve capacity, that we have -- would you say that helps us in the event of an un-normal weather situation?

MS. DACHODA: I --

COMMISSIONER CLARK: Also, to address Commissioner Brown's discussion about what happens in other states, how does Florida's heating-load mix compare to the rest of the southeast in terms -- or the rest of the country in terms of utilization of electricity versus gas and fuels?

MS. DACHODA: Right. So, on your first question, yes, I would say, really the reserve margin is almost designed to address what you're -- you're saying; that you're going to have both changes in forecasts and just changes from what you forecast in terms of weather. So, that reserve margin -- that's really the purpose for it. And that's true on the long-term basis.

Now, on a day-to-day basis, in terms of operating the utility, we also have a margin every day when we go in to operate the system. And that's to take advantage of -- or to be able to serve if our weather forecast that day is off. So, both of those are at work to make sure that we can

serve customers reliably.

And then, as to your second question, as the reserve margins in -- in other parts of the country and our cooling demand, I -- certainly, we do have a higher cooling demand than most places.

I -- again, I spend a lot of time in Texas, in Houston, where the load per customer is quite similar to here and the same sort of weather patterns. And I would say, again, that we operate in quite a similar fashion to that. I don't think -- I don't see any gaps there. I don't see anything that we're missing that -- that other people have done there.

COMMISSIONER CLARK: How -- how do we compare to, let's say, Alabama, North Carolina, the other southeastern utilities, in terms of -- and I'm -- I'm even speaking more specifically in terms of the winter peak and -- and having those excess reserves during the wintertime that we have on hand to deal with peaks generated by electric-resistence heat compared to fuel oils and those things.

MS. DACHODA: Right. Right. I really can't speak to, like, an Alabama comparison. That's just not information that I have at hand.

COMMISSIONER CLARK: Thanks.

THE CHAIRMAN: Thank you.

MS. DACHODA: Let's see, I think I was approximately here. So, we'll just do this last chart on the -- the pie chart of the renewable mix on an energy basis. I've shown you the capacity one before. This is on an energy basis. And so, this, again, does show that solar is going from 73 to 95 percent of the percentage of renewables.

So, I think, with that, it's very understandable the utilities and FRCC are looking at and working to understand what are the reliability impacts of the solar additions that are -- that we have today and that are planned.

And we do believe and -- and are seeing that, at the current penetration levels, that we haven't identified any reliability or operational impacts at the -- at the current levels.

We're fortunate right now to be able to gain experience at the levels that we have, and one of the things that we have identified as being very important is the ability to accurately forecast the output of solar.

That's important, both in the few days ahead and the day of, so that the other generation dispatch can be efficiently and reliably dispatched

to accommodate the solar that's projected to be there. So, having an accurate weather forecast for the solar becomes very important.

You know, I think, in the past, we were used to weather forecast for the load. Now, it's important to have a weather forecast to be able to also identify how that supply is going to come in.

COMMISSIONER BROWN: Can -- can I ask you a question about the solar-generation additions by the co-ops and the munis? How do they compare -- what type of -- I mean, penetration rates are they having? Are they -- is it similar to the IOUs?

I mean, we -- we -- we see some project rollout in the media about OUC, JEA's major installations. Are they using the same the type of equipment that the IOUs -- the tilting or whatever they call that?

MS. DACHODA: I believe it's very -- very similar. They're all sort of proceeding at a similar pace, sharing information to make sure that everybody can use the best technology that they have available.

As to the penetration rates, I don't have that at my fingertips. You know, certainly, the nominal numbers for some of the IOUs are bigger, but that

may not be a bigger penetration rate, but I don't have that at my fingertips.

COMMISSIONER CLARK: You -- you mentioned -- you made the most-observant statement, to me, there's no significant operational impact at our current installation levels. And -- and you're -- you even specifically said, in the short term, we don't see any impacts.

Have you ran long-term forecasts, based on the technology that we have and are using, now, to see what potential effects it has on our capacity and on our reliability?

MS. DACHODA: A couple of years ago, we did a study that looked five years into the future, but that was at a time when we didn't have quite as much solar as we have projected now. So, those sorts of studies will be ongoing.

But one thing that does give me some comfort is that there are certainly other areas of the country that are operating already today at the level of penetration that we're projecting to be at in ten years.

So, I do think that we have time to be able to learn, both from those utilities' experience and also from our own experience today, but the

studies, I think, of that much longer-term nature -- we haven't yet done those.

COMMISSIONER CLARK: So, do you anticipate -- I mean, shouldn't that -- I -- I'm not supposing your job here, but isn't that kind of what we need to be doing in an expedited manner before we have solar wrapped up to the point where we can't walk this thing back?

MS. DACHODA: I -- it's certainly important. I think, though, you know, in -- in perspective, while we see these dramatic growth rates -- that's -- that's why I'm highlighting, is that it -- it needs to be front and center for us, but it's still fair to say that, from an operational standpoint, we're a system that's about 50,000 megawatts.

So, even at four -- you know, 4,000 megawatts --

COMMISSIONER CLARK: Small.

MS. DACHODA: -- is not -- is not something that's terrifying to us because just of the vast size that we have. But certainly, we have to learn a lot more as we go forward, but we -- I believe we do have time to do that in an appropriate manner.

COMMISSIONER CLARK: Thanks.

MS. DACHODA: Uh-huh.

So, now, I'm -- the last topic that I'm going to cover is the nat- -- natural-gas infrastructure in Florida. And there's several manners that FRCC and our members work to ensure reliability and studies around natural-gas infrastructure.

First of all, for many years, the FRCC members, through a consultant, have maintained a comprehensive gas-infrastructure model and utility-fuels database. And frankly, I think we're way ahead of most of the country in having this sort of analysis available to us.

With this model and the database, the members are able to run periodic studies that look at various contingencies on our infrastructure. And they've done that for a number of years.

In addition to those studies, we also have conducted a couple of studies where we've looked at the projected growth in gas infrastructure and compared that to the growth in gas -- natural-gas demand that's generated by the additional natural-gas plants that are planned.

And then, finally on a real-time basis, the utilities and the pipelines coordinate together to address fuel emergencies, and FRCC helps to

coordinate that when -- when that's needed.

And so, as a result of that work that has happened over the years, I can report to you that our studies do show that the natural-gas infrastructure capacity additions and -- and total capacity, as we look forward in the ten years -- that it is on pace with the natural-gas demand that -- that we project. Also, we have the benefit of having gas generation with alternate fuel capability at a very high rate of 64 to 66 percent over the ten years.

And then, finally, more recently, we have conducted some extreme failure scenarios where we've looked at analysis of what would happen even outside of Florida, the infrastructure outside of Florida, both from an infrastructure standpoint and from a supply standpoint. And through that, the utilities were able to identify various responses that they would need to take to such disruptions.

And we studied disruptions that were of an extreme sort that had multiple scenarios of failure. And we looked at both issues of fuel delivery, we looked at generation dispatch, and we looked at transmission deliverability, so, really the whole suite of things that we would need to

make sure we could deliver reliably to the customer.

And on that study, where we were looking at outages of about five to seven days, we were able to show that mitigation strategies are available to make sure that we can reliably serve over that time period.

So, then I'll just conclude the report by reiterating that we are showing that planned reserve margins are above 20 percent. DSM is a very important contributor to reserve margins. Energy-efficiency codes and standards are playing a very significant role. And the renewables -- we are showing that dramatic increase from 2 to 12 percent on an energy basis.

And then, finally the report that the planned gas-infrastructure increases over the ten years are on pace to mass the gas-generation additions.

And with that, I would be happy to answer any other questions.

THE CHAIRMAN: First of all, Stacy, I want to thank you for your this presentation and your report, and apologize for keeping you here all day, until we got done with our agenda.

MS. DACHODA: I'm happy that I didn't to buy a

toothbrush tonight and have to come back tomorrow.

(Laughter.)

THE CHAIRMAN: Commissioner Polmann.

COMMISSIONER POLMANN: Thank you, Mr. Chairman.

Thank you for your presentation.

MS. DACHODA: Thank you.

COMMISSIONER POLMANN: I have a question on the DSM. Back in the beginning of your presentation, on Page 4, you indicated near the bottom there, at that page, DSM continues to be a significant component of reserves.

Can you clarify that for me? The -- just an additional comment how that constitutes a reserve.

MS. DACHODA: Sure. Let me find one other slide to show you. So, I think if we looked at -- let's see. And I can't quite read that. It's 20-something -- that I'm going to -- I'm showing you the planned reserve margin --

THE CHAIRMAN: 20.

MS. DACHODA: -- based on firm load.

So, this chart -- if you compare this chart to the next chart -- so, 20 and 21 -- that's really the picture of what that statement is saying.

In other words, the -- the DSM in this first

chart is assumed to be activated. And so, you see the reserve margin is above 20 percent because the load is reduced for the -- for the DSM.

In the second chart, we're saying, well, what if that demand response wasn't there. Then the reserve margins would fall to about 17 to 14 percent.

COMMISSIONER POLMANN: So, in -- in terms, then, of the -- of the margin as a reserve and then looking at the DSM, I -- I've always thought of the DSM as either a short-term kind of a temporary activity or something that's implemented as a -- more or less, a -- a permanent change in a demand draw, if you will, a -- be it an infrastructure or -- or a customer action.

So, can you differentiate that for me? This -- this is an actual demand management. So, over what period of time -- this is an activity that you implement and then release --

MS. DACHODA: Right. So --

COMMISSIONER POLMANN: -- as opposed to having standby capacity.

MS. DACHODA: Well, you know, from a system-operator standpoint, I think I could view them somewhat similarly.

So, let me -- let me step back. The demand response, it is -- what we have as DSM in Florida is entirely, really, demand response. So, to a system operator, it -- it is used to lower demand, but it's a resource to that system operator because they can exercise that demand response and then be able to reliably serve the remainder of the -- you know, the firm load.

So, I -- I do understand your question of it's -- it's not there all the time because you don't need to use it all the time. But really, as long as you have it available in that moment of need, even if it's that one peak hour, then, it's served the purpose that it -- it was intended to do.

COMMISSIONER POLMANN: And do we treat those essentially equivalent, from a reliability perspective, looking at -- at that reserve as being as good as any other type of reserve, is -- is what I'm -- I'm -- I'm simply asking, I guess.

MS. DACHODA: I see. I see.

COMMISSIONER POLMANN: You know, an apple is as good as an orange.

MS. DACHODA: Right. I -- I -- that's a hard question to answer. We -- we do, when we calculate

this number, in -- in terms of this -- this former chart, 20 -- we assume it's equivalent. It's sort of like asking me is coal equivalent to solar equivalent to gas.

COMMISSIONER POLMANN: Yeah, I was going to get to that in my next question.

MS. DACHODA: And so, I -- I don't know that I -- I think if you ask three different people, you might get three different answers on that, but mathematically, we treat them the same.

COMMISSIONER POLMANN: Thank you for leading to my next question, which has to do with the fuel mix. And if I can manage my own pages here --

THE CHAIRMAN: 22?

COMMISSIONER POLMANN: In the range of Page 22, you look at peak, I think. And then Page 25, we have the 2019, and then 2028, if you go forward a couple of pages -- that's --

MS. DACHODA: Sure.

COMMISSIONER POLMANN: -- that one -- is that --

MS. DACHODA: The -- the difference --

COMMISSIONER POLMANN: -- that forecasted net energy --

MS. DACHODA: The difference between those

two -- the first one is --

COMMISSIONER POLMANN: Well --

MS. DACHODA: -- capacity --

COMMISSIONER POLMANN: -- either one, but my --

MS. DACHODA: Oh.

COMMISSIONER POLMANN: I -- I guess my question here is: At what -- and the Commission has -- has talked about this at -- at other times. We have a growing -- compared to historical, you know, over decades -- a growing use of natural gas as our -- our fuel source, and a diminishing utilization of -- of coal. We have essentially no oil that we utilize, and -- and not very much nuclear power remaining in Florida, so forth.

So, as -- as the fuel that you would have on-site storage and so forth, in Florida -- how does that compare to other -- other states, if you will? We -- we don't produce gas. We import that.

MS. DACHODA: Right. Right.

COMMISSIONER POLMANN: Now, there's a certain risk profile. I'm not saying it's risky, but there's a certain risk profile from a security, reliability, and so forth.

MS. DACHODA: Right.

COMMISSIONER POLMANN: How -- how does this compare, from a -- a fuel mix -- you know, we don't -- we don't have hydropower with stored reservoirs, so forth.

MS. DACHODA: So, for -- Florida is one of the higher percentages of our fuel mix coming from natural gas that -- really the other one that would be higher than us is New England, but I would distinguish us quite a bit from New England in a very favorable way.

Number one, their natural-gas infrastructure is, frankly, quite a bit more limited than ours, both in terms of any planned additions and any foreseeable additions.

In addition, one thing that happens in New England that doesn't happen here is the demand for natural gas is coincident in the winter as -- you know, and we don't face that. We don't see the demand for natural gas like they do in the winter, where they have to compete with natural gas and electric.

And then, in addition, in New England, most of the utilities do not have firm transmission pipeline contracts, whereas, in Florida, it's almost entirely firm transmission. So, while we

are probably the second-highest, I -- I think we're quite a bit better-situated than -- than New England.

And I would say the one thing that's notice- -- notable in this ten-year site plan is, for the first time in the last few years, we are showing, on a capacity basis, that gas is staying steady and that, on an energy basis, it's actually decreasing a little bit. Still a very high percentage, but it is because of the increase in the renewables and the solar -- it's actually, on a percentage basis, starting to temper.

COMMISSIONER POLMANN: So, does that suggest, going forward, perhaps, there -- there will be less concern about increasing reliance as a -- as a percentage basis on natural gas?

MS. DACHODA: That -- that would be my expectation today.

COMMISSIONER POLMANN: Okay. Okay. Well, thank you very much for -- for your help with those answers.

MS. DACHODA: Of course.

THE CHAIRMAN: Stacy, other than New England, what's the -- the next -- on that hierarchy list, the next area when it comes to --

MS. DACHODA: I -- I'm not certain, but I would guess that it's in the Texas area.

THE CHAIRMAN: And Texas is about what percentage?

MS. DACHODA: Probably, I would say 60 -- 55 to 60.

THE CHAIRMAN: So --

MS. DACHODA: But they also have a very high growth in wind capacity.

THE CHAIRMAN: So, pretty significant drop from where we are.

MS. DACHODA: Right.

THE CHAIRMAN: Okay. Commissioner Brown.

COMMISSIONER BROWN: I have a question. You talked about a regional response to fuel emergencies on the pipelines and -- which is great that utilities are doing that and looking at that.

How does LNG and our capabilities and what we have in place and -- and down the pipeline over the next ten years -- how does that factor into that scenario?

MS. DACHODA: In our current operation, I've not seen that factor in. As we go forward, I -- I'm not certain. So, that's something, perhaps, I could come back next year and talk to you about.

COMMISSIONER BROWN: I would love to see a slide, maybe next year, on LNG and -- and where -- what we're looking at over the next ten years.

Thank you.

MS. DACHODA: Uh-huh.

COMMISSIONER CLARK: One last question, Mr. Chairman. And I apologize, it requires a calculation I can't do in my head. As we see summer-peak capacity increasing at a higher rate than energy is increasing -- capacity is growing faster than energy, does that mean load factor is getting worse in Florida?

MS. DACHODA: Correct.

COMMISSIONER CLARK: And on a typical, average cost per kilowatt hour, what -- that puts an upward pressure on average costing? Is that fair to say?

MS. DACHODA: It -- it -- it does. I guess the other way to say it might be that it reflects decreasing revenues to the utilities as those --

COMMISSIONER CLARK: So, is there anything significant that is causing this -- causing the shift in -- in our load factor?

MS. DACHODA: What I would estimate is it really is associated with those energy-efficiency codes and standards because that's directly what

they go to is energy efficiency, which tends to make the load factor --

COMMISSIONER CLARK: So, our demand-management programs that had energy-efficiency components to them -- we did a better job on energy efficiency than we did on the demand side of it.

MS. DACHODA: I don't know if I can answer that, but the math might suggest that.

COMMISSIONER CLARK: Thank you.

THE CHAIRMAN: You're not going to the energy summit, after this, are you?

MS. DACHODA: Beg your pardon?

THE CHAIRMAN: You're not going to the Florida Energy Summit after this, are you?

MS. DACHODA: Oh, no. That's not my plan.

THE CHAIRMAN: You weren't invited to participate?

(Laughter.)

MS. DACHODA: I see --

THE CHAIRMAN: Commissioners, any other questions?

Staff, do you have any other questions? I guess you guys have already gone through this a couple of times.

MR. BALLINGER: If I could ask one.

THE CHAIRMAN: Sure.

MR. BALLINGER: And it's actually a follow-up to a -- a briefing we had with Commissioner Brown. I didn't know the answer, so maybe Stacy does.

If you go to Slide 18 --

MS. DACHODA: Okay.

MR. BALLINGER: And it -- that's a -- it shows the reduction in coal plants. Is that three individual plants? And, if so, how many would be remaining after that?

MS. DACHODA: Okay. Let's see.

MR. BALLINGER: And I know we have that information. I -- if you don't know it off the top of my head, that's fine.

MS. DACHODA: No, I -- I think I have it. Let me just -- here we go. So, I know the first part of your answer. In 2020, we have Indiantown retiring; 2021, Big Bend 1 and 2; and 2023, Seminole. I -- I don't know the -- I think you asked how many remaining. I don't know that off the top of my head.

MR. BALLINGER: Okay. That's fine. Thank you.

THE CHAIRMAN: Well, thank you very much. Thank you for your time. And, once again, this is

always awesome. It's amazing how many of these things I still have.

MS. DACHODA: Thank you for having me.

THE CHAIRMAN: Thanks. Travel safe.

All right. Staff?

MR. WRIGHT: At this time, we have an opportunity for public comments. If anybody wants to make a comment, I encourage you to come up to the podium and just understand that comments should be limited to about three minutes.

THE CHAIRMAN: Anyone?

MR. WRIGHT: Not seeing --

THE CHAIRMAN: Anyone? Anyone? Bueller?

MR. WRIGHT: You can adjourn at your pleasure.

THE CHAIRMAN: All right. Well, thank you very much for today. Thank you for your time and your patience.

We are adjourned. Everybody please travel safe. And I'll see most of you in about two weeks.

(Whereupon, proceedings concluded at 2:32 p.m.)

CERTIFICATE OF REPORTER

STATE OF FLORIDA)
COUNTY OF LEON)

I, ANDREA KOMARIDIS, Court Reporter, do hereby certify that the foregoing proceeding was heard at the time and place herein stated.

IT IS FURTHER CERTIFIED that I stenographically reported the said proceedings; that the same has been transcribed under my direct supervision; and that this transcript constitutes a true transcription of my notes of said proceedings.

I FURTHER CERTIFY that I am not a relative, employee, attorney or counsel of any of the parties, nor am I a relative or employee of any of the parties' attorney or counsel connected with the action, nor am I financially interested in the action.

DATED THIS 14th day of October, 2019.

ANDREA KOMARIDIS
NOTARY PUBLIC
COMMISSION #GG060963
EXPIRES February 9, 2021