IN RE: STEVEN MCINALL-TERMINATION OF EMPLOYMENT AGREEMENT WITH JEA

SWORN STATEMENT
OF
STEVEN MCINALL

DATE TAKEN: Wednesday, July 8, 2020
TIME: 9:00 a.m. - 12:57 p.m.
PLACE: 21 West Church Street
Jacksonville, Florida

REPORTED BY: Heather M. Thomas,
Court Reporter

APPEARANCES FOR THE CITY OF JACKSONVILLE:
LEE WEDEKIND, ESQUIRE
DANIEL NUNN, ESQUIRE
Nelson, Mullins, Riley & Scarborough, LLP
50 North Laura Street, 41st Floor
Jacksonville, FL 32202

ADINA TEODORESCU, ESQUIRE
ARIEL COOK, ESQUIRE (Appearing telephonically)
Office of General Counsel
117 West Duval Street, Suite 480
Jacksonville, FL 32202

KEVIN BLODGETT, ESQUIRE
Smith, Hulsey & Busey
One Independent Drive, Suite 3300
Jacksonville, FL 32202

ALSO PRESENT: JAMES BLEDSOE, JR., ESQUIRE

INDEX

WITNESS: STEVEN MCINALL

EXHIBITS
MARKED FOR IDENTIFICATION:

STEVEN MCINALL,
having been produced and first duly sworn as a witness, testified as follows:

THE WITNESS: Yes, I do.

EXAMINATION

BY MR. WEDEKIND:

Q Would you please state your name and address for the record?

A Steve McInall, M-C-I-N-A-L-L. My address is 626 Grampian, G-R-A-M-P-I-A-N, Highlands Drive in St. Johns, and that's 32251.

Q Mr. McInall, you understand that you are currently on administrative leave as an employee of JEA --

A Yes.

Q -- correct?

And this interview is being conducted as part of an investigation to determine whether there exists grounds for your termination for cause; right?

A Correct.

Q You have been provided with a statement of rights, the Garrity form; correct?

A I've seen it, yes.

Q Did you execute the Garrity form?

A I have not.

Electronically signed by Heather Thomas (401-385-656-8432)

Q Okay.
MR. BLEDSOE: Not for this proceeding. He executed one for the earlier interview.
BY MR. WEDEKIND:
Q Okay. We need to get that handled. I don't have a copy of it with me. I've seen it. We will have it printed.
A Okay.
Q And you will sign it. I will sign it. Mr. McElroy has already signed it. And that will provide evidence that this interview today is being taken at JEA's direction, subject to your termination for cause if you fail to cooperate, which provides you with the Garrity protection.
So everything that you say today is deemed to be protected under Garrity, and you cannot be criminally prosecuted for anything that you say today.
A Okay.
Q Okay. All right. As part of today's interview, you have the duty as a JEA employee to answer all of my questions completely and honestly. What I mean by that is that if there's any information that you think is relevant or important for me to know related to the questions that I'm asking, even if it isn't directly, precisely responsive to my questions, I would

ask that you provide me with that information. And, of course, all the information that you provide is expected to be the truth.
A Okay.
Q Today is not a deposition. I know that it looks like one, but it's not. This is an interview, and the Rules of Civil Procedure do not apply to today's interview. So I might ask questions in a form that your attorney would otherwise find objectionable. He doesn't have the right, like he would in a deposition, to object to the form of my questions.
But I would ask you and him that if any of the questions I ask are confusing to either of you in any way, for purposes of clarity, I would ask that you help me better frame my questions so that we can get to the truth today.
Can you do that?
A Yes.
Q Great. Thank you.
And I'll also say we're wearing masks here today because of concerns about the coronavirus. So it might make it difficult for you to either hear or understand the questions that I ask, and it might be hard for our court reporter to understand anybody that's talking today.

So to the extent that you either don't hear clearly or you can't understand what I'm trying to say because of this mask or for any other reason, I'd ask that you just ask me to repeat or restate my question. I'll be happy to do that.
A Great. Thank you.
Q Finally, because we do have a court reporter here taking a transcription of today's conversation, I would ask that you work with me not to talk over one other, so that I will ask a question and I'll allow you to finish your answer before I ask my next one, and I would ask that to the best that you can, please wait before you begin your answer to my question until I've finished it.
I sometimes have an issue with pausing in the middle of a question, which can be -- can complicate that, and so I'll work very hard to get my questions out in a way that you can answer them.
Can you do that?
A Yes.
Q Okay. Can you please provide me with all of the cell phone numbers that you have used during the last two years.
A (904) 312-0739 is the only number.
Q Okay. Same question for email addresses.

A As far as work email or --
Q Any work email addresses that you have and any personal email addresses that you've used in the last two years.
A So mcinsg@jea.com is the work email. And SMcInall -- first initial, last name -- @gmail.com and also @bellsouth.net.
And I've got another just forwarding address. It's the StevenMcInall@alum.mit.edu, but it just forwards it to the Gmail or the JEA account, and so for subscriptions or newsletters, I like to use that one so that it went to both.
Q Understood.
In connection with your work for JEA, did you ever receive work-related emails to your personal email accounts?
A No.
Q As part of your work for JEA, did you ever conduct any JEA-related work on your cell phone via either calling or texting?
A Yes, I would imagine I did.
Q Texting was a part of your work life?
A Yes. Yes.
Q Other than text messaging through the text app, did you use any other apps to communicate with

Electronically signed by Heather Thomas (401-385-656-8432)

other members of the SLT?
A There was that GroupMe app that was basically a group chat, and it went out to all the SLT members. And that was used by all the SLT members to share things that had happened in their areas and get reactions.
And it was really -- I don't think it was so much for conducting business as much as keeping people up to date. For instance, if there had been a pipe break, Deryle Calhoun would send out, we've got a pipe break at X location. And Kerri would chime in with something about, you know, we'll get a press release or we'll work with the media to -- department to notify people about that.
So it was really just to, I think, get everybody, you know, on the same page. And then a lot of people used it for just sharing articles of common interest. You know, if there was a particular news item that somebody felt newsworthy, then it would get shared and then have reactions to it.
That GroupMe app was used in order for all the messages to be properly memorialized.
Q Were there any other apps other than GroupMe that you ever used in connection with your work on the SLT?
A No.

Q Before we get into the real nuts and bolts of my questions, I wanted to provide you with an opportunity to say anything that you wanted to go ahead and have on the record.
I just want to let you know I'll also provide you with the same opportunity at the end of today's interview, and so this is just a chance for you to say anything on the record that you want to say.
A I do have a statement, but I was going to save it for the end.
Q Very good.
All right. What did you do to prepare for today's interview?
A I talked with my lawyers. I reviewed my prior testimony from January 2nd. I listened to your presentation to the Special Investigative Committee. I watched my presentation to the Special Investigative Committee.
I reviewed some of our previous ten-year site plans downloaded from the Public Service Commission website as well as their 2019 review of the ten-year site plans. And just kind of caught up on industry trends on challenges facing the utility industry, the -- looked at a McKinsey report for 2019 of just their overall predictions, utility outlook.

I looked at the annual energy outlook 2020. Realized I hadn't really kind of dove into that yet. So that's a U.S. government production.
MR. NUNN: That's the one published by the Energy Information Agency?
THE WITNESS: Yes. Correct.
BY MR. WEDEKIND:
Q Anything else?
A As far as preparation, that's really -- that's really it.
Q Other than your attorney, did you speak with anybody else?
A I've spoken with other SLT members, but not about -- not about preparation for the testimony, just, you know, really catching up, see how they're doing. Interested in when people are testifying or if. Up until a week or so ago, you know, nobody had really been scheduled. We hadn't heard anything.
So, you know, just everybody trying to keep informed. And I spoke with probably most of them at one point or another.
Q Did you speak with Melissa Dykes?
A I spoke with Melissa -- the day Paul let us all go, she had called to offer, you know, just condolences and understanding. And then I communicated

with her, I think, by either text just to line her up as a future reference.
Q How about Ryan Wannemacher?
A I actually spoke with Ryan for the first time since he left Sunday night, and it's because I needed a number for my final statement. I thought asking him would be easier than trying to look it up and everything.
Q What do you mean final statement?
A My -- my -- what I was going to say at the end of this.
Q Okay.
A It was -- it was what was the net present value of the St. Johns River Power Park deal.
Oh, can I add in? The other thing I looked at in preparation for today was going back through prior board meetings just to look at what presentations I had made since Aaron had been CEO, just getting that straight in my head.
Q Did you speak with Mr. Zahn?
A I have not spoken with Mr. Zahn.
Q Since his termination?
A Since his termination.
Q Why did you go back and look at the JEA board meetings at which you presented during Mr. Zahn's

Electronically signed by Heather Thomas (401-385-656-8432)

tenure?
A I was just interested to see what information I presented to the board.
Q Did the information during Mr. Zahn's tenure as CEO of JEA have a different form or importance than other information that you would have previously provided to the board?
A No. But I assumed it was going to be the focus of this discussion. And, of course, I wasn't an SLT member prior to that.
Q Did you have -- have you had any communications with Herschel Vinyard?
A No, I have not.
Q Lynne Rhode?
A No, I have not.
Q What was the title of your last position at JEA?
A The last one before this one or this one?
Q The one that you currently hold.
A Vice president and -- vice president and chief of energy and water planning.
Q My understanding is that was a combination of two prior roles; is that right?
A It was formed -- it really came from three different areas. The energy planning came from the

energy group, or the former electric group. Water planning came out of the water department. And then the -- it also included real estate and economic development, and that came from the facilities group as far as -- as far as real estate and economic development came from what Mike Hightower used to do and then Herschel was doing, and that was mixed in with the real estate to make that a director-level position rather than a manager when I had to replace the leadership in that department.
Q Who were the previous employees who had responsibility for those three areas?
A Before I took over?
Q Yes.
A Okay. So -- all right. So on electric, John Coarsey and I shared the electric planning. John had the transmission and distribution planning. I had the generation planning as well as fuels and byproducts.
When I started the new position, generation planning got moved under John, and fuels and byproducts stayed in the energy side. So those people didn't come with me.
On the water side, the planning director was Raynetta Marshall. She had left a couple months into my tenure, and I had to -- so I replaced her with Rob

Zammatoro, Z-A-M-M-A-T -- either another A or maybe an O -- R-O. It auto populates before I have to get that far.
And on the real estate side, Donald Burch was the manager of real estate. And Jordan Pope did the economic development and government relations. And then Donald retired, and I kind of poached Jordan from Mike Hightower, and he brought the economic development portion with him into the real estate group.
Q So Jordan is a direct report of yours?
A My three direct reports were John Coarsey, Rob Zammatoro, and Jordan Pope, yes.
Q Are you familiar with the City of Jacksonville's RFP to provide long-term strategic planning advisory services that was put out for bid in December of 2017?
A The City of Jacksonville's?
Q Yes.
A Not really, no.
Q Okay. Were you involved in that work in any way?
A Not that I recall.
Q Do you know anybody who was at JEA?
A Was that related to the prior sale?
Q It was related to a prior discussion about

privatization in 2018.
A Yeah, I was the director at that time, and, you know, I -- I don't recall who, if anybody, was involved with that.
Q When did you move from the director level to the SLT level?
A January 2019.
Q As a director, did you either attend or watch board meetings?
A Yes. If I had an item going before the board, I'd be there. And, typically, we would watch the board meetings remotely from our desks if we didn't have an item.
Q Do you happen to remember watching the board meeting from May 2018 in which the board discussed privatization?
A Was that the -- just to refresh the timeline, was the Aaron appointment in April 2018 as interim?
Q Yes.
A I probably did watch that board meeting. I was out of town for the April board meeting.
Q Do you remember the board issuing an order for JEA employees to stop working on privatization at the May 2018 board meeting?
A If I don't remember it from that meeting, I

Electronically signed by Heather Thomas (401-385-656-8432)

remember that that was discussed later, yes.
Q Okay. Are you aware of any JEA employees exploring privatization after May 15th, 2018, but before July 23rd, 2019?
A So the interpretation, as I recall, from Aaron and the upper echelon leadership was after the -- I think it was the June board meeting, but whenever the Scenario 1 and Scenario 2 were presented and were both kind of rejected and the request went out to find -- you know, show us something different.
At that point there was -- there was some discussion about what are the other options, and privatization was one of them. So certainly before the July 23rd meeting -- you know, the information at the July 23rd meeting couldn't have been there without some discussion about privatization leading up to it.
But I don't recall anything specifically being discussed, authorized, worked on prior to -- prior to that Scenario 2 rejection.
Q At the July 29 board meeting -- or excuse me, the June 29 board meeting?
A Right.
Q Okay. Was it ever implied by anyone else or inferred by you that all of the long-term strategic planning work that was being done by McKinsey and other

members of the SLT was in preparation for a push to privatize JEA?
A Implied or inferred?
Q Implied by anyone or inferred by you.
A So I think -- I think there was a -- because sale had been in the news -- you know, it had been discussed under Paul's tenure. It was really the reason that Paul ended up leaving and -- and then Aaron coming in.
You know, I think there was always sort of a nagging thought that, you know, was this leading to a sale, but -- or a sale discussion. Not necessarily a sale, but a sale discussion.
And, you know, so I don't think -- when Scenario 2 was rejected and we looked at a sale option, it wasn't a surprise. Certainly the Scenario 2 discussion was, I thought -- would have been very onerous, would not have been good for the community, and I was happy to have an alternative to discuss and to defer any further discussion of Scenario 2.
Q Well, that was the whole point of Scenario 2; right?
A Yeah. I think it was, yeah.
Q To drive a discussion towards Scenario 3?
A Yes. That -- you know, that was certainly --

you know, we worked diligently to work through Scenario 2, and I think had Scenario 3 not been authorized that, you know, Scenario 2 would have been invoked or more heavily investigated. So, you know, it was a real possibility at that time.
Q After Scenario 3 was rejected by the JEA board, did it begin implementing Scenario 2?
A When Scenario 3 was rejected back in December 2019?
Q Yes.
A No. Because at that time Aaron had also been dismissed. New leadership was in place. You know, there was no consensus for what the next step was. And the board at that time was not in a position to really change directions.
Q There's been a lot of discussion about the different mechanisms by which JEA does its planning. And I know that you've talked about this before, but I think it would be helpful for me if you would walk through a couple of different planning mechanisms that JEA has historically used.
So the things that come to my mind -- and please supplement if I'm wrong -- are the ten-year site plan, which is filed on an annual basis with the Public Service Commission; the IRP, which is done on about --

as far as I know, about a decade basis.
And who is the IRP filed with?
A IRP is only filed if there's -- if there's a licensing decision that comes out of the IRP. The 2012 IRP, for instance, was never filed with anybody.
Q And that was the last one that was done in advance of this most recent IRP that's been worked on?
A Right. Right. Which was completed, the -- you know, the final draft in February.
Q Of 2020?
A Of 2020.
Q And the other long-term strategic planning work that was being spearheaded by McKinsey?
A Correct.
Q Was there any other type of planning mechanism that JEA has used in the last ten years?
A Well, there's the integrated water resource plan, which has -- there's one currently underway, and one was completed maybe back in 2014 or 2015, and that was patterned after the electric integrated resource plan as far as looking at future trends areas and really trying to identify what the -- what the long-term assets, capital investments, were going to be needed to support the community in the future.
Q Did the ten-year site plan and the IRP focus

Electronically signed by Heather Thomas (401-385-656-8432)

on water?
A No. Those were electric only.
Q So the IWRP would be a water companion of the IRP, which is on the electric side?
A Right. Right.
Q Are there any other planning documents or processes that JEA has used?
A So the finance people have got their projections that they use at the rating agencies which are not necessarily based on any of the formal planning documents.
The plans as far as projections over a five-year period are reflected in the annual disclosure report that goes out, and that goes out to the rating agencies. And that's -- well, it gets posted on EMMA, which is the essential data site for municipal financial filings.
And there had been previous strategic forecasts and investigations. I know Deloitte had done something a few years ago. I'm not as familiar with the work that they did. And before that, there had been, I'm sure, strategic consultants come in and come up with something.
MR. NUNN: Could you speak to the market potential reports that are filed with the Public

Service Commission?
THE WITNESS: Is that the FEECA filings?
MR. NUNN: Uh-huh.
THE WITNESS: So those are filed every five years, I believe. The customer group does those. I believe they get some information from the ten-year site plans from other departments. But I -- my group wasn't involved in those filings at all, so I really can't speak to the content.
There's sort of a back-and-forth relationship with -- the FEECA would pull information from ours, but then once they identified their energy efficiency targets and what they expected to hit, that would then come forward, and over the next five years that's what would be used in the ten-year site plan.
So it's not quite a circular reference, but the documents kind of reference each other.
BY MR. WEDEKIND:
Q So that I understand, the ten-year site plan and the FEECA filings would mirror each other in terms of the data it represented?
A For at least that first year of the overlap. And I say mirror each other, but by that I just mean we would get the information about energy efficiency from

the group that's preparing the FEECA. So the information they provided us in that year that they're doing the FEECA should be consistent with their FEECA filing.
But, you know, my group didn't really have any say in the FEECA filing. And the -- and I believe they would look at our overall projections for growth and for net energy per load and would use that in their information. So the groups would work together, but certainly each product was independent, you know, of the other.
Q But they would utilize information from the others. So the ten-year site plan would utilize information from the FEECA filings, and the FEECA filings would utilize information from the ten-year site plan?
A Right. And that's the distinction I'm trying to draw is that I don't know for sure that the ten-year site plan drew information from the FEECA filing but got that information from the group that prepared the FEECA filing.
Because certainly, if it's not a year that there's a FEECA filing going in, the energy efficiency or demand side management goals can change year to year within that five-year FEECA period based on what the

actuals were the year before.
Q I understand that clarification.
My point is only that there was an effort by JEA to have a consistent presentation of data between its ten-year site plan and its FEECA filings?
A I believe so. But like I said, I -- you know, I'm not as familiar with what the FEECA filing is, so I can't really say that definitively.
Q It's my understanding -- going back now, focusing on the ten-year site plan and the IRP.
It's my understanding that the purpose of those documents is to attempt to forecast demand for electric power in the future?
A So that is true for the ten-year site plan.
Q Okay. How about for the IRP?
A The IRP takes its baseline forecast from the ten-year site plan. It doesn't develop its own -- its own forecast. It then looks at scenarios of where -- that would modify or change that forecast.
So the ten-year site plan is fairly static. It looks at -- you know, it's doing a regression analysis. So you're looking at your 10 or 12 or 15 parameters historically and what was the load that year, and based on that develop your aggression equation.
And then, looking at other people's

Electronically signed by Heather Thomas (401-385-656-8432)

projections of those parameters -- so say the state has estimates for Duval County population growth. So that's one number from an external source. Moody's has estimates for, you know, what the economic -- what the interest rate is going to be, what the economy is going to be.

All those factors go in, and then you get the output like -- kind of assuming that if everything was the same as it was before and these numbers change here, here's your net energy per load in that case.

So then the IRP takes that baseline and looks at multiple different scenarios, some which impact the demand, some which don't. But it will look at good economy, poor economy, high natural gas prices, low natural gas prices, different things like that.

Because what we're trying to do with the IRP is -- because there's -- if there's a decision to be made, which is what triggers an IRP -- the decision that we're looking at for this IRP was how do we replace Northside 3. That's 500 megawatts of natural gas that is approaching retirement, and it needs to be replaced somehow; what's the best way to replace that.

And we want to make sure that replacement power is the best option across as many different scenarios as possible. So it might not be the absolute

best, but it might be the best -- it might be like second best in four out of five scenarios and best in one, and overall that makes it the most resilient solution, because the one thing we don't know is what's going to happen in the future.

So that -- so the -- that's the purpose of the IRP is to drill more down into the technology. I look at the IRP as more than a counterpoint to the planning document as the first step in the licensing process. Because once the IRP says, yeah, you need a new combined cycle, then the next step is to start working on a need for power application with the PSC. And they're going to ask why do you think you need this combined cycle. And the answer is going to be the IRP demonstrated that that was the most robust solution for our need driven by the retirement of this other unit.

Q Based on the baseline forecasts contained in the ten-year site plan?

A Right. So that's the jumping off point, but then the IRP does look at modification to that. But those aren't forecasts in and of themselves. They're sort of -- they're just what-ifs; what if the economy tanked; what if the economy was fantastic; you know, so what if demand got a lot higher; what if it got lower.

So those are kind of in there to create

bookends to create a confidence level that that solution is appropriate across the widest range of solutions.

(Discussion off the record.)

(Connected to conference call.)

MR. NUNN: May I ask a question about the scenarios? Is there a document at JEA that sets forth the scenarios that should be contained in an IRP --

THE WITNESS: No.

MR. NUNN: -- generation resource guidelines document from approximately 2012?

THE WITNESS: No. They really varied based on -- based on when we're doing it. If -- and there's scenarios and then there's sensitivities within each scenario. There generally are the variations around economy, so, you know, inflation rate, discount rate. Fuel is always a big variable, relative fuel prices.

The scenarios in the 2019-2020 IRP aren't the same as the scenarios in 2012. Really that's -- those are developed in concert with the consultants and with -- you know, with our groups. So just -- there's a cost benefit there too.

You'd like to look at every possible scenario, but that takes time and money, and the more

variations you run, the more consulting time it takes. So you really try to winnow it down to as few as possible, and it also makes the comparison at the end, you know, a little more straightforward.

The 2012 IRP, for instance, the final outcome was let's not really do anything right now. At that time the best answer was more nuclear, which I think compared to more nuclear, let's not do anything seems like a pretty good decision at this point.

So no, there's not a planning document that spells out for the IRP what the -- what those scenarios should be.

BY MR. WEDEKIND:

Q When you're looking at scenarios, you talked about a winnowing down. Are the most likely scenarios the ones that are ultimately selected for inclusion within the IRP?

A Not necessarily. The ones that kind of give the most -- the most variety. So if the two or three most likely scenarios kind of sit on top of each other as far as, you know, what the expected -- you know, where the demand or total fuel prices, whatever, come in, then they're not really -- it really doesn't help to

Electronically signed by Heather Thomas (401-385-656-8432)

have those.

You'd rather have one that's almost a caricature of a scenario that's going to be like, you know, that's crazy high or that's crazy low. So you get a wide range.

Just as an example, so we had a -- in the 2012 IRP, we had a poor economy scenario that showed flat to negative growth, and then looking back at that compared to what actually happened, reality came in below that. And that was a scenario that we thought was a bookend on the low side, and then, you know, reality was lower.

So you don't always get it -- get those bookends to actually reflect what's going to happen because, again, they're all projections.

Q But the goal, I think, as I understood it, though, is to use the best data that you have in order to determine the most resilient solution to a pending issue, which is a lack of capacity?

A Right. Right. Yes, that's a -- yeah.

Q And then, again, the baseline forecast that you begin your scenario planning with is data derived from the ten-year site plan?

A Right, as far as the growth. And then, of course, the ten-year site plan only goes for ten years. The IRP might go for 30, and it's typically just a

linear extrapolation from the end.

So -- and I should point out the other big discrepancy with the IRP and the ten-year site plan is the IRP really talks in dollars, so this solution set where we retire this unit and replace it with these two or three things and here's the cost for that over the next 30 years, and then alternatives, like what if we replace it with this other set or this other set or this other set.

There's no dollars anywhere in the ten-year site plan. You know, the PSC doesn't care how much it costs as long as it's cost-effective for your customers. But the ten-year site plan isn't the way you communicate with the PSC, here's the relative cost for something. You know, that's through the whole licensing process and -- of which the IRP is the first step.

Q Did JEA internally prepare the ten-year site plans?

A Yes.

Q And I think I understood that JEA engages an outside consultant to assist in the preparation of the IRP?

A Correct.

Q And I think it's Brad Kushner, or at least it historically has been?

A It is. Brad did the 2012 IRP when he was at Black & Veatch and most recent IRP with his new company, nFront.

Q You talked about the difference between the reports, including the financial component in the IRP. That's because it is used to justify an investment decision?

A Correct.

Q And the ten-year site plan is simply forecasting load?

A Forecasting load and reporting on addition, subtractions to the generating stack. So again -- so once the IRP identifies here's -- so, for instance, so Northside 3 is going to go away, let's say, in 2027. The IRP would then identify what is going to replace it. Then that information would then roll back into the next ten-year site plan, where our generating stack, we would show a reduction of 500 megawatts in 2027, and an addition of -- suppose we were doing a new combined cycle -- 550 megawatts in 2027.

And, you know -- or if we're going to do a smaller unit with -- maybe we had 200 megawatts earlier. So that would all be reflected in the tables showing we -- you know, because the purpose of the ten-year site plan is not necessarily -- it's not just to show what

the forecast is; it's to show the next step, which is that we have adequate generation capacity to meet that demand plus the reserve margin that's required, which is 15 percent.

Q And so like the FEECA filings with the ten-year site plan, the IRP report and the ten-year site plan also are consistent with one another? The data within them are consistent? They have different purposes, but the data within them are generally consistent?

A Yes.

Q Was the data within the ten-year site plan and the IRP that was being worked on by JEA and Mr. Kushner in 2019 utilized by McKinsey in its strategic planning process?

A So the IRP that we did started with the 2018 ten-year site plan, because that's when it started. And we didn't -- the 2019 and 2018 ten-year site plans were not drastically different, so there was no need to update the IRP for that change.

The McKinsey work was going in parallel to the IRP. They were going on at pretty much the same time, and their -- we shared with McKinsey what we had, but I don't -- you know, up to the time, but I don't think there was necessarily a concerted effort to match the

Electronically signed by Heather Thomas (401-385-656-8432)

IRP and the McKinsey reports.

They -- I think they were probably inconsistent in a few areas, particularly -- you know, McKinsey was more aggressive on solar adoption and, you know, load defection.

But, you know, I will point out the final McKinsey reports did show a new combined cycle in about the same time frame as the IRP was showing.

Q I have an email from you. I'm sure you've seen it before. I think it's from December 2019 when you state that you tapped the brakes on the IRP --

A Yeah.

Q -- in order to synthesize it or make it -- alignment, I think maybe was your word, with the McKinsey report.

A So it wasn't necessarily to align with the McKinsey report. What -- and I believe that was the one to Chris Garrett?

Q I'll find it. It's in here. But continue.

A So with the IRP as the first step of the licensing process, part of that is -- and I believe I covered this in prior depositions -- part of that is testifying that the -- this new unit -- because it's a $550 million or $530 million unit that we're -- that we're talking about that -- yeah, Jasen Hutchinson.

(Exhibit Number 1 was marked for identification.)

MR. BLEDSOE: Can you identify that for the record so we know what you're looking at?

MR. WEDEKIND: I've just handed Mr. McInall Exhibit 1, which is an email from him to Jeanie Gillespie and Jasen Hutchinson dated December 20, 2019. It's in response to a public records request.

And it says, "We don't have a draft or final. I tapped the brakes on it to try to get some alignment with the McKinsey work. Attached is an updated presentation on the study from March. Let me know if you want further materials. We're expecting to get a draft final in January."

BY MR. WEDEKIND:

Q I don't know -- what is a draft final? That sounds --

A It's.

Q -- contradictory.

A Well, it's the last draft before -- you don't expect any more changes. So you've already gone through all your edits. But until there's really a need for a submittal, you know, you don't need a final.

Q So why would you -- the question really right

now is why would you change the IRP in order to align it with the McKinsey work?

A Well -- and that's the clarification is -- so the McKinsey work was going to wrap up, and I wanted to make sure that they weren't going to be contradictory. And at this point, in December 2019, the -- so the ITN process had been going -- had been going, and once we're in the ITN process and there was potential for a sale, really our resource plan, our -- was almost going to be moot, because whatever we came up with would have reflected our system.

So clearly the answer is going to be different if we're -- if we had been bought by another utility that we could interconnect with. So if TECO or FPL or somebody had purchased us, the IRP would have been, you know, really a moot point -- moot at that point.

So the McKinsey work, they -- the earlier drafts I had seen, there was a lot of pushback on a new combined cycle. And as I stated, there was -- it's a big budget item, $530, $550 million.

McKinsey was -- earlier on was showing a lot of solar, a lot of storage. We had looked at those as -- at least in screening evaluations in the IRP, and for a -- for replacing a 500-megawatt gas unit that we would be losing, the IRP was showing a combined cycle

was the -- was the best option. And so, you know, I was championing we need the combined cycle, we need the combined cycle.

In the end, the reports from McKinsey reflected a combined cycle in more or less the same timing. So, you know, I was successful as far as getting them to -- and I don't have kind of their internal deliberations. But I was pleased to see when the -- when the later McKinsey work came out that a combined cycle was part of -- part of the future.

I remember the -- there was the meeting at UNF where McKinsey had their storyboards or plateaus or tableaus, and really people were -- were broken up into different groups kind of cross-functional, so it wasn't like all the electric people over here. People were all mixed together, and essentially just voting on what we thought we should do in the future.

And everybody was voting for solar and batteries, and nobody -- and the only people voting for combined cycle were electric people, because we understood the difference between capacity and energy and the cost between natural gas and batteries.

So -- and, you know, I think a lot of this was videotaped, so I don't know if there's footage of it. But when each of the groups reports out, I had gotten up

Electronically signed by Heather Thomas (401-385-656-8432)

and basically, you know, gave an impassioned plea for why we needed a combined cycle, and to the point of having everybody in electric who voted for the combined cycle, raise your hand, and everybody, you know -- and all the electric people did, just to demonstrate that, you know, the people that should know the best about what was needed all thought that was the way to go, even though the room as a whole were like two-thirds or three-quarters in favor of a different option.

Q So who was giving you pushback on the combined cycle that you were championing?

A Really it was -- it was just -- at the time, you know, McKinsey kept coming in with these scenarios showing, you know, what I thought were extreme levels of solar. And to the point of, you know, once you look at above the 250, that we're adding another 300, 400 megawatts, and then, you know -- you know, I had already gone through siting, trying to find locations for those first five plants.

I don't want to put more solar plants out in that same area. So I know that's pushing it more expensive real estate or further away real estate, and then you're talking about transmission. And the -- you know, so I -- I don't know what kind of interactions were going on, but I do know that in the end, it did

reflect the combined cycle.

Q Was Mr. Zahn one of the people pushing back against the combined cycle?

A I don't recall him directly pushing back. He certainly was a big proponent of solar and batteries. He wanted us to be in the solar business. And it might not be a bad idea. I just didn't think it was going to be cost-effective for us to do what somebody else could do more cheaply.

Q Do you think that Mr. Zahn understood the differences between the benefits of a combined cycle versus solar?

A I'm not sure that he did, no.

Q Why do you say that?

A I think -- I think in general, in -- on the finance side, energy is energy. So if you've got 100,000 megawatt hours from something, it didn't matter -- you know, when you look at the spreadsheet of where the energy comes from, whether or not it's firm capacity or not firm capacity or if it's dispatchable or if there are transmission limitations in bringing it in, those don't show up in the spreadsheet.

So if you're -- the system's real easy to design with a spreadsheet, because you just put in energy source A, B, C, D, and as long as you get the

total -- but then when you add in the limitations and the constraints on the system and actually try to make it an operable system, that's when it gets complicated.

Q So you don't think that Mr. Zahn had an understanding of how to run an operable electrical system?

A I -- you know, I -- I really can't say what he knew or didn't know, but I -- I don't think he appreciated all the intricacies.

Q Because his focus was on other things?

A Again, I don't want to speak to what his focus was or wasn't on.

Q How about McKinsey? Did the fact that they continued to present you with assumptions that included extreme levels of solar lead you to believe that they didn't really understand your business?

A So McKinsey's got a lot of really smart people. I think -- I think they certainly had people who understood our business. And whether or not those were the people who were always working on our project, I -- I don't think so.

I noticed as time went on, the people we were working with just got younger and younger. You know, I don't think -- you know, I think McKinsey is a great like proving ground for future executives. People go

there, you know, with their advanced degrees from Ivy League schools and, you know, go through the fire for three to five years and then go on. So there are very few like experienced people there.

It seemed like as the project went on, we became less of a priority, and, you know, the younger -- and they were willing to learn, but a lot of times it felt like we were teaching them the electric industry.

Q Did it ever seem like McKinsey was including assumptions that were designed to reach a predetermined goal?

A It's really hard to say. I think their assumptions reflected their worldview. Looking at some of the research I did in preparation for this, just looking at McKinsey, kind of global outlook for energy in 2020, and they're very bullish on solar. They're -- you know, it's the same assumptions that we saw in -- they have here as far as like grid parity of 2025.

So I think that it just -- whatever models they have -- and, of course, you know, their economic models are probably very highly protected and proprietary -- that's what they show.

So I can't say that they were working towards a predetermined conclusion as much as their process and their assumptions reflected their overall corporate

Electronically signed by Heather Thomas (401-385-656-8432)

worldview.

Q And their worldview didn't necessarily match your view of JEA's business, or the realities of JEA's business?

A Correct.

MR. NUNN: You spoke to the view of grid parity. Do you think that's consistent with what the industry believes as a whole?

THE WITNESS: I don't think it's -- I don't think it's that different. I think -- and I said before, I think it's aggressive. But if I had to pick a grid parity point, I'd be looking more in the early 2030s. And I think there's -- there's research and articles out there to support either.

I think '25 is -- '25 is on the early side. '27 with storage, again, I think it's a bit early. But, you know, we're talking a 5-year difference, and if you're looking at a 30-year plan and deciding what --

So we'll look at Greenland, the -- or the new combined cycle. So if a new combined cycle is going to start in 2027 and that's the same as the grid parity point for batteries and storage, then that should be a concern, because clearly you're not going to have the carbon load with battery --

solar and batteries. You're -- so if there's any kind of carbon tax, you know, that's going to impact your economics on your combined cycle plan.

And the worst possible outcome would be to build a $500 million plant, finish it in 2027 at the same time that batteries and storage become cheaper, and now you're -- essentially you've got a unit there that you probably do use, but you have to shut something else down because now you're busy replacing with batteries and storage.

So getting that timing right really is -- you know, it -- it's sort of fundamental to the plan or dilemma. You know, what is -- in a time of transition. You know, back in the days where you're adding capacity and having to just plan when you had a plan to make sure that you've got all the -- enough capacity to meet your demand, it was a lot easier. You're just looking at do I want a simple cycle, or a combined cycle, or a coal plant. And, you know, different set of math.

But now, where you're fundamentally changing from fossil fuel base to renewable base, you know, it's -- it's quite different. And getting that timing right is literally a half-billion-dollar decision. So it's worth taking some extra time to

make sure you get it right.

And that's the thing too with -- you know, if McKinsey had come back and said, no, we really think batteries and storage are going to be late -- you know, late '20s at the earliest, then I think we would have had to go back and take a closer look at the IRP and say do we really want to go in and is this what we want to do.

And the Public Service Commission has been pushing back on people coming in with more gas. They're concerned about the ability to get gas to the Peninsula. Jacksonville has a good location as far as multiple pipelines, not having quite that same concern, but still it's very -- we'll reach a point of we can't get -- we can't get more gas down here. I think it's already over 60 percent natural gas, and projections are going up like 85 percent natural gas. So that's -- gas interruption has become a very big concern of maintaining power supply to the state.

So, you know, with all those things, being able to say that, yes, we looked at this, it's not the best option -- and I remember at the -- at the UNF meeting, one of the -- you know, we're always compared to FPL and how much solar FPL is doing.

And I'd point out the reason they're doing that much solar is because they've already put in so much natural gas. They've got all these 15-, 1,800-megawatt combined cycle units all over the state. So they've got that baseload natural gas generation that they can ramp up and down, which lets them accommodate all the solar that they want to put in, now that solar has gotten cheap enough to warrant it.

So, you know, there's just a lot of things going on. And particularly with this tapping the brakes, I know I had spoken with Melissa, because when the decision kind of got made was when Aaron was at a Jax Chamber event, and he was talking about maybe not needing a combined cycle and doing batteries and storage instead.

And I told Melissa, look, we're not -- again, looking at the IRP as the first step in the licensing process. I said, you know, we all need to be behind this as the decision for us going forward. It's a half a billion dollars. We can't -- we can't be this is what we want to do today but maybe we're going to change our minds.

So as far as the McKinsey work kind of being reflected in what Aaron was saying and there

needing to be alignment before we went to the PSC and certainly there needing not to be a question about are we going to be our own entity or not, you know. So, you know, it didn't make sense to rush through the IRP and finish it.

Now, as soon as, I'll say the dust settled, you know, took the brakes off, IRP got wrapped up late January, early February, so the draft final is out there. It's on the internal website, you know, so I'm sure you guys have a copy of it. And, you know, it reflects a new combined cycle.

BY MR. WEDEKIND:

Q So let me unpack that just a little bit.

A Sure.

Q And I'm going to paraphrase based on my understanding of what you just said.

The utility doesn't want to be the last utility to ever build a combined cycle plant because, like you said, it's a half-billion-dollar investment?

A Correct.

Q And that's why the -- getting the IRP right is so important?

A Yes.

Q And so the scenarios that are used to inform the decision recommended by the IRP are absolutely

critical --

A Sure. Yes.

Q -- in developing --

A Yeah. Yeah.

Q -- your most resilient answer to the problem that you're facing?

A Right.

MR. NUNN: In that regard, my prior question -- I want to make sure that I give you a chance to -- make sure you understood my question.

There is a document at JEA called Generation Resource Planning Principles and Guidelines, and it's dated November 12th, 2012.

Are you familiar with that?

THE WITNESS: It was a plan -- it's a guideline document in the generation planning group, yes.

MR. NUNN: And on Page 6 of that document under the principles, it provides that for the objective to forecast the most probable future demands along with reasonable low and high growth scenarios, generation resource planning will, under B, produce a base case forecast from one of the forecasting methods that best represents JEA's most probable outlook.

Was that the baseline forecast that was in the IRP?

THE WITNESS: So the IRP used the ten-year site plan forecast, which is the most likely or really the -- yeah, so that -- you know, that's the kicking off point. And that's produced every year.

I haven't looked at that document in a long time.

BY MR. WEDEKIND:

Q So you start there and then you run your scenarios based on the base case, and then you derive from your scenario planning the most resilient solution to the capacity issue?

A Right. So the -- so the variations from the base case can impact either demand or the cost of the power to meet that demand, so if you're -- if what you're fluctuating is the fuel prices. So -- yeah.

But, you know, the base case is the taking off point and should represent the most likely scenario.

Q Was the IRP, when it was finalized, changed to reflect any of the work that McKinsey had done?

A No, it wasn't.

Q And the IRP is the document that JEA and the PSC are all going to rely on when making this $500 million investment decision?

A Correct.

Q And not the McKinsey strategic planning?

A That's my understanding.

Q I just want to go back to one thing you said about your conversation with Ms. Dykes about the comments that Mr. Zahn made at the meeting. The comments that he was making were inconsistent with the recommendation contained in the preliminary IRP --

A Right.

Q -- right?

A The drafts that we've seen -- that would have been about in the same time frame as that March 2019 update that -- that's referenced here.

Q And you're complaining to Ms. Dykes saying, look, we can't go to the PSC with recommending a combined cycle plant when our CEO is out there telling the world that we're moving into solar?

A Correct.

Q Do you know whether or not the forecasting contained in the IRP and the ten-year site plan are consistent with the work that was done by McKinsey?

A My understanding is they kicked off from the same point from that 2018 ten-year site plan forecast, but then they -- they kind of broke it down and then changed -- modified components based on their

assumption.
Q And the assumptions that were being used by McKinsey were different than the assumptions that JEA was using in the IRP?
A Yes.
Q How were they different?
A All right. So -- and again, you know, it's -- so the ten-year site plan -- it's kind of just easier to talk to because that's where the forecast came from.
There's assumptions there about -- and this is just one example of where they differ. Like I don't have enough granularity on the McKinsey forecast to know where all the differences were.
But the -- our solar adoption, for instance, is kind of based on the historical trend and then what we see in the future. So right now it's kind of -- it's a flat, slightly increasing adoption rate.
McKinsey had, I think, like a .1 percent of customers installing solar up until 2025, and then that went to -- I don't know, something like a half a percent. So it took a jump from 2025 until some other point in the future, maybe '27, '28 when batteries caught up, and then it went up to like 1, 1.2 percent.
So as a result, their -- the lost revenue and lost megawatt hours to solar increased a lot more than

our model did.
Now, you know, it's a different assumption. It's not right or wrong. And, you know, with all of these things in there, they ended up over the next ten years showing an 8 percent decrease in sales, which is actually -- you know, including FPU, is what we'd seen over the past ten years.
So it's hard to say, however it got there, that's -- you know, that's wrong, because, heck, it just happened. So it was at least plausible. You know, it could have happened.
And I don't know if this is the right time to kind of insert into it. One of my concerns with our electric demand and losing load is the increase in natural gas usage by customers. Most of the new neighborhoods are natural gas neighborhoods. There's a 30 to 50 percent decrease in per-customer sales for a natural gas home compared to an electric home.
If you layer a photovoltaic roof on top of that, a solar photovoltaic, then their consumption could be 15, 20 percent of a similarly sized all-electric home, you know, without solar on the roof. So, you know -- and that's now.
And the gas companies are starting to push natural gas heat pumps, which would take away the AC

load, which is most of what our electric sales are in the summertime. And you see natural gas generators, you know, in certain neighborhoods go in, and every fifth or sixth house -- and granted, those are in FPL territory, because their reliability up here is a little, you know -- in some of the big storms they've been slower to get reconnected.
But, you know, there is a strong potential for the ability for people to go off grid, you know, even in an urban setting. You know, I don't think that's been fully reflected in -- you know, in anybody's analysis.
Our issue is we don't know how many of our customers have natural gas. It's not a -- it's not a parameter that we keep track of. And we've tried to -- started trying to track that. So, you know, it's -- it kind of -- you know, that concern kind of gave me the flexibility to say, okay, you know, this is a little aggressive on this, on solar, but it's not really picking up all this natural gas issue. So I think there is room on that downside for this -- for this to be closer to -- closer to what might happen.
MR. NUNN: Do you recall an email that you sent in October 2018 to members of the financial planning group in which you explained that natural gas would primarily impact new customer growth as

opposed to existing customers?
THE WITNESS: I don't recall that email, but that sounds right. I mean the natural gas -- natural gas is more easily installed in new neighborhoods. It kind of dovetailed into one of the things I was trying to push us for, which was getting into the natural gas business to the point of being able to look at putting in gas lines in existing neighborhoods at the same time as we put in reclaim or put in -- or did a septic tank phaseout in that area.
Because one of the big differences between the natural gas vendor, you know, Peoples Gas and us is we have an obligation to serve. They can cherry-pick what neighborhoods they want to go to or not. So as far as, you know, ease of installation, consumption, that is typically newer neighborhoods.
Now, they have just spent a bunch of money in existing neighborhoods -- Avondale, San Marco -- upgrading their existing facilities, replacing 80-year-old lines with new lines. So, you know, they'll go where they think they can make a profit.
BY MR. WEDEKIND:
Q Is JEA legally constrained from getting into

the natural gas business?
A Well, I'm not a lawyer, and I think the answer to that question depends on who you ask or the charter, the JEA charter, says we're allowed to be in natural gas.
TECO signed a territorial agreement with FPU when they -- when TECO installed the line to go to one of the combined unit power plants, and that territorial agreement, which was filed with the PSC, gives FPU the right to Nassau County except for one or two of the combined heat and power plants, and TECO gets the right to Duval County.
And I know they've pointed to that as evidence of their unique right to be the provider in Duval County, in addition to which they've got the current franchise from the city.
So, to answer your question, yes and no.
Q It wouldn't take a charter change in order to get into -- for JEA to get into the natural gas business?
A No, it would not.
Q And the City of Jacksonville could decide to grant JEA the franchise to provide natural gas within Duval County?
A They could. I don't know what that does --

how the territorial agreement, you know, works out, since that's -- that's their -- you know, I don't know how that works out.
(Exhibit Number 2 was marked for identification.)
BY MR. WEDEKIND:
Q Okay. I'm handing you Exhibit 2. This is the preliminary IRP from March of 2019. I'm going to ask you to turn to Page 12. I kind of opened it up there for you.
These are the Scenario Matrix that this particular IRP was looking at.
Who came up with these particular scenarios?
A So these are really collaborative. So nFront was the consultant, and then they would work with our group, my generation planning group, and the finance people, and the environmental department, and, you know, what are your concerns we're looking at and get all the input, and then really come up with a table like this.
And then, you know, at this meeting we would have looked at this and kind of agreed to it, like okay, this -- these look like they're, you know, realistic, but, as I said, bounding.
You know, we weren't necessarily looking for four realistic scenarios as much as -- or four scenarios

that we thought were going to happen as much as, you know, the baseline is the most likely, but then apart from that, we're looking at like caricatures of potential futures that will give us that kind of spread so we don't just have four lines on top of each other but actually have some definition between them.
Q And so that I understand, the load erosion case, is that -- would that be considered the worst-case scenario?
A Yes.
Q And would you equate that to Status Quo 2 in the McKinsey scenario planning?
A My big takeaway from Status Quo 2 was more of the -- what happened to JEA as far as rate increases, cuts to employees and service level and, you know -- and I don't recall that Scenario 2 had -- whether it had load decrease as part of that scenario or not.
You know, certainly just looking at the numbers, so you've got 1 percent per year for ten years decline, so compounded, that's maybe an 11 percent decline over ten years. So compared to the McKinsey forecast of an 8 percent decline over the next ten years, so their forecast is a little more optimistic than this load aversion case. So their forecast would have fit within this.

Q The other three scenarios forecasted slightly increasing net energy requirements; correct?
A Yes.
Q Who was involved in the decision to pump the brakes on this particular report?
A So that was Melissa and I, and, you know, I passed it down to -- again, you know, it was going a little more slowly than we had planned to start with. So hitting the brakes on it, you know, or just slowing it down a little bit, again, you know, that was because of Aaron's comments.
And we didn't talk to him about it, but I talked to Melissa and I said, look, he's either got to stop saying that or we're going to have a problem.
And she said, he's not going to -- he's not going to stop saying that.
So I told her, well, I want to slow down on the IRP.
She said, go ahead, you know. And my hope was to bring the McKinsey report in line with where we were. And that's where we ended up. McKinsey ended up calling for the new combined cycle, which really, you know, regardless of the -- of the forecast -- and the forecast isn't the output of the IRP; it's the input and then variations around it are just there for creating

bookends.

So eventually McKinsey called for a new combined cycle, which, you know, is where we ended up, the same place we ended up with for the IRP. And then certainly once -- as I said, once the ITN was in play and there was a question about ownership or consolidation with somebody, the IRP was -- was interesting from a point of view of here's what we identify we need for our system, but if we're going to mix with somebody's system, it would not have been the time to take this to the PSC.

Q Do you remember in October 2018 a presentation made by Kerri Stewart and ICF about electrification?

A Was that at a board meeting?

Q Yes.

A Yeah, I recall that.

Q Did you assist in the preparation of the materials for that board meeting?

A I may have gotten a look at them beforehand, but, no, I did not.

Q Okay. ICF was very bullish on electrification, as you recall; is that right?

A Yes.

Q Okay. In fact, its representative, David Pickles, said that JEA's electrification flexibility

gave it an advantage over its competitors.

Do you remember that?

A Not specifically, but ...

Q Do you remember Mr. Vinyard's presentation about the limitations imposed -- or the constraints imposed on JEA from a legal perspective?

A I remember him giving that presentation. I don't recall all the details of it.

Q Do you remember him ever telling the board that JEA was constrained to pursue electrification?

A I don't remember that specifically, but I'm sure it's on the ...

Q If he had represented to the board or provided the board a chart that had electrification in a red square that said "legally constrained," would you agree that that would have been a misrepresentation?

A Yeah. You know, I don't know what his basis for that would have been.

Q On September 10th, 2018, you --

A Can I point something out on electrification?

Q (Nods head.)

A So, you know, there are some pretty bullish estimates for electrification availability. I also know that there's new LNG facilities in town that the Jacksonville Transportation Authority had made a big

investment to go into compressed natural gas buses. So there's a lot of competition, you know, for the transition from diesel or gasoline. It's not just electrification that's on the table.

And I know we had given JAXPORT a grant or a rebate or whatever for the electrification of some of their big cranes, and those cranes -- the usage on those cranes never met the required amount in order to justify the money that we had granted them, so they owed us a pretty sizable refund, almost around a million dollars, a little less, maybe.

And as a result, since JAXPORT is notoriously cash poor, they did give us a piece of property just north of the Talleyrand -- or Buckman plant out in Talleyrand. And that was the -- but the entire basis for that transfer of the property from JAXPORT to JEA was because, you know, an electrification effort had been made and the usage never matched what the projections were or what the contractual obligations were, and as a result we got a piece of property instead.

So, you know, I do think electrification projections, like most projections, need to be taken with a grain of salt.

(Exhibit Number 3 was marked for

identification.)

BY MR. WEDEKIND:

Q I'm handing you what's been marked as Exhibit Number 3. This is an email by which you sent Juli Crawford a copy of the presentation materials to ICF -- or the ICF presentation materials.

Below that, on September 10th, Vicki Nichols thanks you for your helpful feedback on the presentation. It says, "We made some key additions and it set a tone for further alignment with forecasts and financial performance."

What does that mean?

A I really don't remember. You know, Vicki probably asked me to look at it. I would have made some comments, and it would have been on the -- I'm pretty sure on the JEA section of it, not so much on the ICF section.

Q What further alignment with forecasts and financial performance was she referring to?

A Probably -- you know, I really -- let's see. This would be October -- September?

Q September 2018.

A Probably the McKinsey, but I can't be sure. You would have to ask Vicki.

Q So you take this presentation and you forward

it to Juli Crawford on September 10th, 2018?
A Yeah.
Q Your email says, "Good luck working this in with your 'gloom and doom' presentation."
Was Juli Crawford working with McKinsey in September 2018?
A She would have been involved with McKinsey. Again, I was the director then, as was -- as was she -- or she was a manager at that point.
Q What were you referring to when you're talking about the gloom and doom presentation that she was working on?
A Probably McKinsey or the slide showing the 8 percent reduction.
Q Yeah. So the Status Quo --
A Yeah.
Q -- 2 Scenario --
A Right.
Q -- was --
MR. NUNN: Just to correct that. I think it's the status quo scenario.
THE WITNESS: Status quo --
BY MR. WEDEKIND:
Q Status quo, yeah.
So at least as of September 2018, at the

director level it was already understood that the status quo presentation was intended to be a doom and gloom scenario?
A Well, whether it was intended to be or that's what the numbers were showing, I certainly -- I fancy myself as a bit of a whit, so I can't say that, you know, that was necessarily what -- you know, certainly not what -- it's how the numbers were looking, not so much what the -- what the intent of them was to be.
And I think my intent here was to say this certainly -- as you noted, electrification tells a different story and the potential for electrification tells a different story.
Q So the import, I think, of what you're saying, "good luck working this into your 'gloom and doom' presentation," is that this ICF presentation is inconsistent with the status quo scenario that McKinsey was working on?
A Yeah, that --
Q And it would have been hard for Ms. Crawford to reconcile those two?
A Yeah.
(Discussion off the record.)
(Recess taken from 10:45 a.m. to 10:50 a.m.)

BY MR. WEDEKIND:
Q We were talking about the McKinsey strategic planning process.
The first document I want to show you is dated December 17th, 2018. I'm going to jump a little bit chronologically. But this is a document entitled Building a Strategic Framework for JEA: Work Plan. This is prepared by McKinsey, and it walks through what McKinsey's proposing to do.
On Page 3 of that document it talks about aligning on base case financial forecast. First question is, because the ten-year site plan and the IRP already are aligned on the base case financial forecast, why is there a need for McKinsey to deviate from that?
A So neither the ten-year site plan nor the IRP are financial forecasts.
Q It's just a load forecast?
A Just a load forecast.
Q Got it. Okay.
And then so what they've -- the way that they plan to do that is by, under their bullet points, "Pressure test and validate JEA forecast with an internal model." And apparently their internal model is called powerIQ + TETRIS.
Are you familiar with the powerIQ and TETRIS

modeling?
A No. The only TETRIS I know is that little block-shaped thing.
Q And then under -- to the right of that it says, "Deliverables. Fully vetted financial forecasts for base case/business as usual and extreme but plausible alternative scenarios."
What kind of extreme but plausible alternative scenarios was McKinsey going to be developing?
A Do you know where that -- when that presentation was --
Q It's dated December 17th, 2018.
A Yeah.
Q (Indicates.)
A Can I see a copy of it or --
Q (Tenders.)
A Thanks.
MR. WEDEKIND: Just for the record, we'll go ahead and mark that as Exhibit 4.
(Exhibit Number 4 was marked for identification.)
MR. BLEDSOE: And, Lee, everything you're showing him is in my stack of material?
MR. WEDEKIND: Except for that document.
MR. BLEDSOE: Okay. Can I just get a set from

the court reporter after we're finished, because you're going out of order here, so I can't keep up.

MR. WEDEKIND: Yes.

THE WITNESS: You know, this presentation doesn't look familiar to me. This looks more like a McKinsey planning document, and at this point, I would have still been a director. If I was in a meeting that covered this, I was on my phone and wasn't paying attention.

But this -- you know, this kind of breakdown -- most of the McKinsey meetings I was in were more technical, talking about more the details. Certainly some of these figures, like this one showing the screening going down, these were -- I've seen certain of these slides, maybe, but not this presentation.

So I don't really know what the -- what their -- what they considered their extreme scenario.

BY MR. WEDEKIND:

Q Okay.

A Sorry.

Q That's okay.

As part of the meetings that you were involved in with McKinsey, did you talk about the assumptions

that they were relying on in developing their opinions?

A So most of our meetings with McKinsey, at least, you know, early on and certainly, I think, up through December, they were gathering data from us. So we would meet with them, and they would just ask us questions and ask us questions about the system, about our assets, about different things.

And would have different meetings with -- they'd meet with the generation planning group. They'd meet with the transmission planning group, which at that time I wasn't a part of. They'd meet with finance. They'd meet with everybody individually and gather information and then went away and melded it all together.

And then it was later where they would come back and start trying to fine-tune things that -- you know, that they shared a little bit about what they -- what their assumptions were. But it really wasn't until -- until there were a lot of questions being asked about why -- you know, what are the underlying assumptions behind this McKinsey forecast that I got any detail about how they had gotten there.

In general, it was understood that they were -- had more aggressive assumptions about -- about solar -- about electrification too, about EV adoption.

So it wasn't just negative stuff; they also had higher EV adoption than most of our projections had.

(Exhibit Number 5 was marked for identification.)

BY MR. WEDEKIND:

Q So I'm handing you Exhibit Number 5. This is an email from Melinda Fischer to Juli Crawford and Vicki Nichols. Its subject is JEA Status Quo, and it attaches some assumptions.

And it says, "Juli, I apologize for the delay. Here is the assumptions we had put together. Please let me know if you have any questions regarding this."

So if you look at the assumptions that were put together, in rooftop solar PV in note Number 3, it says, "High and extreme forecasts based on 25 percent and 40 percent growth rate used in the 2025 solar PV impact study."

What do you think about those assumptions?

A I think those are pretty -- those are pretty high.

Q Do you know of anybody who's in the industry that is using those type of assumptions for its planning?

A Not that I know of, but that's not -- you know, I haven't really done a lot of study on what other

people's rooftop assumptions are. The --

Q In your opinion, those -- the percentages forecasted 25 percent and 40 percent growth rate rooftop solar are high?

A I mean, you know, until pretty recently, rooftop solar was doubling almost every year, so that's about 100 percent growth rate. As that number gets larger, the -- you know, the percentage increase slows down. And certainly our policy change back in 2018, slow -- kind of moderated -- you know, I'll say flattened the curve a little bit.

Q Is that the net metering policy?

A The distributed generation and battery incentive program changed. Those changes. So there's still an increase every year, but it's not -- it's not that same doubling every year.

You know, I do think those are on the high side, but this -- you know, this didn't come out of my group, and I don't -- it doesn't even look like it went to me, so ...

Q Those are from the finance group?

A Melinda was in the customer solutions group. This is Vicki Nichols' group.

Q Okay.

A Going to Juli in the finance group.

Q That's what I mean. They're being provided to the finance group.
A Right.
Q For Juli -- because this happened the day after you sent the earlier emails. So clearly Juli Crawford was working on her doom and gloom presentation?
A And this is -- right. So she had the electrification piece of it, which was --
Q Right.
A -- that, and now she's trying to work in all the components to come up with the presentation.
Q Right. And for the status quo?
A For the status quo.
MR. WEDEKIND: All right. So that is September 2018. I'm going to move forward slightly to October 2018.
Let's go off for just a second.
(Discussion off the record.)
(Exhibit Number 6 was marked for identification.)
BY MR. WEDEKIND:
Q I'm handing you Exhibit 6, which is a draft of what's titled, Disruptive Innovation Analysis, prepared by JEA.
My first question is what do you know about

this document?
A May I?
Q Yes. (Tenders.)
A I don't recall seeing this document before.
Q Okay. So you weren't involved in the preparation of this particular document?
A Not as I recall.
Q Okay.
A There are elements of it that are familiar from being in other presentations, such as this slide. They're not numbered, but, you know, this one shows up a lot.
I was probably involved in some earlier iteration of at least this slide, because this upper curve here, this is the extrapolation of the previous growth curve, and one of the points of how we've lost sales is where we were expected to be based on extrapolation from, you know, year 2005-2006 time frame up to the present, and it's about a 30 percent drop as to where we are compared to where earlier projections showed that we would have been.
You know, this whole step thing, you know, these are the --
MR. BLEDSOE: Excuse me. When you refer to something like this --

THE WITNESS: I'm sorry.
MR. BLEDSOE: -- can you refer to it more specifically so the record will --
THE WITNESS: Right. This positive electric market influences for JEA with step charts, those are -- those are finance -- finance metrics that are just -- that format is usually start with the base, add, add, add, here's your total, or add, subtract, subtract, subtract, here's your total. So ...
BY MR. WEDEKIND:
Q So let's look at Tab 1.
A This one?
Q Yes, the first tab.
It says -- well, it's predicting a .8 percent compound annual growth rate -- or compound annual growth increase in customers, but an overall 11.6 percent decline in megawatt hour sales. And that's on Tab 2.
Do you see that?
A Right. So Tab 1 looks like it's stepping up to the 13,652 gigawatt hours as where growth would be based on these assumptions.
And then -- and then Tab 2 looks like it's an alternate, where growth is slower, rooftop PV cuts into the market, so does energy efficiency and codes, getting

to a smaller number. So these are essentially bookends. Like here's -- Tab 1 is growth and Tab 2 is with disruption.
Q This is -- Tab 2 shows, I think, the beginning of what will be a series of slides that discuss this --
A Okay.
Q -- same process.
And so what we're going to do is watch how the numbers evolve from October 2018 to the final board presentation in 2019. So that's the first one.
(Exhibit Number 7 was marked for identification.)
BY MR. WEDEKIND:
Q The second is Exhibit Number 7, which is actually the document that we had previously looked at. This version is in color, so it's a little bit easier to read.
But this is -- well, another document generated by McKinsey. It's December 19 instead of December 17, so it's slightly different. But it's titled, JEA Demand Forecasting: Follow-up Discussion.
And so Exhibit 7 -- have you ever seen Exhibit 7 before?
A I don't believe so. It's marked as a preliminary working draft, and I don't remember ever

seeing a McKinsey presentation marked like that.
Q Okay. So if you look at the fourth page of that document, it has a comparison between JEA's assumptions and the assumptions that its proprietary powerIQ analysis have generated on the same page. It's a side-by-side comparison.
And if you look under the powerIQ analysis, it's projecting a 1.78 percent compound annual growth rate in customers as opposed to the prior document, which JEA prepared, showing a .8 percent.
So McKinsey's powerIQ is more aggressive in terms of the projected customer growth?
A I see that.
Q Okay. And then on -- if you go to the second tab, it talks about McKinsey's next steps, and it says that they're going to take the TETRIS model and apply it. The TETRIS model hasn't happened yet. And it gives you a breakdown of what the TETRIS modeling is and what it isn't.
Did you ever have any involvement with McKinsey in its TETRIS modeling? I think you said no before.
A So they asked questions and I gave answers, and what they did with it, you know, if it went into powerIQ or TETRIS, I don't know.

Q So you were an information provider to McKinsey?
A Correct.
Q Did it ever go the other way? Did they ever ask for your feedback on the results of the inputs that you were providing?
A Once the results were more final --
Q Okay.
A -- they did come back and there was more of a feedback loop. But even then, it was -- you know, there was still a black box element to what they were doing, from my perspective.
Q I understand.
Just so that we're clear, the black box is you put inputs in and the black box spits out an output, and you don't know how it converts the input to the output?
A Right. And then even when we give a tweak, they would just take that and go away and come back with a different number out of the black box.
Q You never saw how the sausage was made?
A No. No.
(Exhibit Number 8 was marked for identification.)
BY MR. WEDEKIND:
Q Exhibit 8 is a draft Status Quo Baseline,

described as The First Step in the Process. This is a draft. It says that in big, red, bold font on the front. And it says -- I'm going to hand this to you in just a second.
But on the front it says, "Overall theme needs to be similar to a pitch book."
What's a pitch book?
A So, you know, that's not utility parlance; that's -- that's sales parlance. You know, so they're -- sounds like they're saying it needs to be formatted more for making a sales pitch.
Q We're trying to sell the audience on a story contained within the book?
A That's what it sounds like.
Q All right. I've already flipped to Page 15 of this particular Exhibit Number 8.
By the way, did you ever see that document before as it was being developed by JEA?
A So they all look similar, because every presentation has got this lightbulb on it. It was a personal peeve of mine.
I don't think I ever saw this document. This color on the -- on these note pages, this like rusty red, is fairly striking, and it doesn't look familiar.
That being said, certainly, again, some of the

elements of it are common. I can see where -- you know, where the inputs would have come from, where they -- like a lot of presentations, nothing starts from scratch. They borrow from previous presentations.
So I think that's -- I have seen either the -- some of the inputs that got, you know, borrowed from to create this and then also the later -- later iterations of this when it was just status quo baseline and, you know, everything was more -- was more settled.
I mean, this -- I'm looking at Page 10. This is an iconic chart of consumptive use permit and water planning. So this has been used many places.
Q And the goal of these exhibits is to show the evolution of the data within the charts and the presentations over a period of time, specifically from October 2018 to --
A Sure.
Q -- ultimately the board's presentation.
So what I really want to focus on in this Exhibit 8 is this data on Page 15. And you can look at the assumptions in this chart and how it compares to the previous assumptions from the October 2018 JEA work product that came from the disruptive innovation analysis.
So what was originally the disruptive

innovation analysis has now become the status quo baseline?
A Uh-huh.
Q Do you see that?
A Yeah. Yep.
Q So the assumptions in this chart, though, are now different, and you have a 2.5 percent increase in customers, but an overall 7 percent decline because of energy loss -- or energy efficiency and rooftop solar.
Do you see that?
A Yeah, I see that.
Q And the assumptions, though, for each of those are different than the assumptions that were utilized in the disruptive innovation analysis in October 2018.
A Yeah. Okay.
Q So the first question is who is adjusting all of these assumptions as these reports evolve over time?
A I don't know. You know, like I said, I haven't seen this, at least this version. This is from -- it's not dated.
But this is -- based on the timeline you've got going, I think this is prior to my being on the senior leadership. So I don't know who was looking at this.
Q Okay. I think that the date is January 10th,

2019.
When did you say you came on to the SLT?
A I said January 2019. So this could have been just before.
Q Yeah. Okay.
(Exhibit Number 9 was marked for identification.)
BY MR. WEDEKIND:
Q The next exhibit, Number 9 are -- you can keep that, because I want to compare them.
This is the same basic graph, but from a few days later, and the assumptions have changed again. Do you see how the model is changing?
This updated model shows a 4 percent decline due to a .4 terawatt increase in customer growth.
Do you see that?
A Yeah. I don't see how it's adding up to a different number, because all the numbers in between are the same. Well, I guess they've got this TBD here, non-solar DG.
Q And you're pointing at the TBD in Exhibit Number 9?
A Exhibit Number 9.
Q So they just -- they're changing their assumptions --

A Yeah.
Q -- all along the way?
A Right.
Q And one assumption, they don't even know what they're going to assume next, so it's just inserted as TBD?
A Well, there's a category; it's non-solar DG. And it looks like it's supposed to be a negative, but the number at the far right here is higher than the number on the previous exhibit, Exhibit 8. So -- and all the other numbers are the same.
Q So you go from a potential 7 percent drop in sales if you look at the titles --
A To a --
Q -- to a potential 4 percent drop --
A Sure. Yeah.
Q -- in sales?
A I see that.
(Exhibit Number 10 was marked for identification.)
BY MR. WEDEKIND:
Q Then hand you Exhibit Number 10, which is a draft. It says in the bottom right-hand corner it's dated February 21st, 2019. And the assumptions in the model have changed again. The language of -- the title

of the slide keeps changing, and now it -- the title says that the forecast shows energy efficiency and solar will drive down JEA sales by 8 percent.
Do you see that?
A I see that.
Q Okay. And this is all the same data -- or excuse me. It's all the same chart, the same presentation of data, but all the data keeps -- within the chart keeps changing over time; right?
A Right.
Q Okay. If you go to the next page, Page 2 --
A On Exhibit 16?
Q Yes, sir -- well, excuse me. Exhibit 10. It should be a 10. I'm sorry.
A It's a 10. Sorry.
Q If you go to the next page, you'll see the title is that, "JEA sales are expected to fall by 8 percent plus through 2030 despite a growing customer base."
Right? Do you see that?
A I see that.
Q Okay.
A Looks like it's the same numbers, just a different headline.
Q The headline's changed; right? And so if you

go to Page 4, this is a -- well, if you look at Page 3, you'll see the --

A The frog in the frying pan.

Q It's the frog presentation; right? So this is an excerpt from the frog presentation, Page 4 of Exhibit 10.

And if you look at that, this is the board presentation that was actually given in May of 2019. I'm assuming that you remember that; correct?

A Yeah, yeah. We all saw the frog presentation multiple times.

Q Yeah. So it's familiar to you.

So then if you look, it says, Status Quo Energy Sales Projection. So all of this from October 2018 to the frog presentation, you can watch the data as it's evolved over time. This is the final product that's presented to the board.

A And this is when -- this is the data that I saw.

Q This is the data -- on the last page of Exhibit 10 is the data that you saw.

A Well, which is the same as all this data. This -- the final Exhibit 10, the data in there is --

Q And so -- but the model here is adjusted to decrease the impact of customer growth but increase the

loss due to rooftop solar, right, which results in an 8 percent decline? That's what all of Exhibit 10 shows --

A Right.

Q -- right?

And that is the status quo scenario that's presented to the board?

A Right.

Q Interestingly, if you look at the frog presentation, they soften the language in Exhibit 10. It says, "Energy efficiency and solar will drive down JEA's sales."

But when you get to the frog presentation, it says, "By 2030 JEA's customers may likely increase 16 percent and energy sales may likely fall by 8 percent."

What do the words "may likely" mean? Is that a terminology that you use?

A It's not a terminology -- you know, it's not a terminology I would use, and it doesn't have any real scientific basis. The determination as to likeliness is going to be based on the probability of the inputs. So, you know, I really can't speak to the likelihood of that.

Q Okay.

A You know, I will say that in general, the trend didn't seem -- seem possible to me. It's, you know, certainly -- you know, we've seen sales decline over the past ten years. Another decline over the next ten with all the challenges, with PV, with gas, with energy efficiency, it's -- whether it's likely or not, I don't know, but it's certainly not -- it's not improbable.

Q Is that what you want your board making permanent decisions on is information that's theoretically possible, or do you want it to be the most likely scenario?

A Ideally they should -- the board should understand a baseline and then, you know, some sensitivities around that; so here's what we think is going to happen, here's the worst that could happen, here's the best that could happen. And then what they make their decisions on is up to them.

Q Do you feel like that all of that was adequately explained to the board as part of the frog presentation?

A I would say that the frog presentation was reflective of a worldview, and whether that was -- where that was originated from, I don't know. You know, we were kind of led to believe that, you know, this is what

McKinsey says.

And like I said, McKinsey's got a lot of smart people. I am open-minded enough to accept that -- I don't know everything, and somebody else can have a better idea.

And certainly, looking back at prior projections for growth and how reality worked out, the one thing all the projections have in common is that reality came in much lower. There's almost no instances where the ten-year site plan projected lower usage than actually happened. You know, it's always well above actual.

And that's why in 2014, the finance people stopped using ten-year site plan as the basis for their financial projections, just went with 12 million megawatt hours flat, because they said they were tired of explaining to the rating agencies why they missed their projections.

Q I remember your testimony about that in front of the Special Investigation Committee.

A Yeah. So ...

Q Was the ten-year site plan ever modified as a result of the modeling that was produced as part of the status quo presentation to the board?

A No.

Q Why not?
A So I looked at the ten-year site plan as, you know, kind of tried and true technology. It's simpler than -- than all of this. It's got very few buckets. Like I said, it takes that regression analysis, looks at a bunch of parameters to see how they relate to each other in the past. The implicit assumption is that relationship will continue in the future.
McKinsey is more sophisticated. They're looking at not -- that relationship changing over time. So in X number of years there's going to be a technology change and this is going to happen, and that -- so they've got all that modeled in.
So it is more sophisticated, but their number's going to necessarily probably be lower. So my number was conservative for planning purposes. If my goal is to ensure that JEA has adequate resources to meet all of its demand, then I'm going to use the higher forecast.
Q I don't understand that.
A Okay. So the ten-year site plan is to -- is to make sure that over the next ten years, JEA is going to have enough generation capacity to meet all of its demand.
Q Plus 15 percent?

A Plus 15 percent.
So if there are two forecasts and one says X and the other one says 10 percent less than X, you know, and this is based on the technology -- the methodology we've used for years, I'm going to stick with X, because, you know, I don't want to -- I don't want, you know, use a new methodology that shows a lower capacity or -- and capacity is really the primary focus of the ten-year site plan.
It's not -- you know, it's not the total sales or the total net energy for load. From an engineering point of view, it's conservative to use the higher base number because that way I'll make sure that I've got the generation capacity that I need.
Q I understand everything that you just said.
(Exhibit Number 11 was marked for identification.)
BY MR. WEDEKIND:
Q So my question -- I'm going to hand you Exhibit 11. This is from the ten-year site plan.
And if you look at those numbers, the ten-year site plan is based on assumptions of 1.3 percent compound annual growth. The McKinsey status quo reports include an assumption of 2.5 percent compound annual growth. So McKinsey was assuming a more rapid increase

in your customers than the ten-year site plan.
If what you said about the ten-year site planning being conservative was true, why didn't you adopt the higher numbers from the McKinsey report, unless you just felt like they were unreliable?
A So the McKinsey increase -- they're showing a 2 and a half percent increase in megawatt hours -- or per gigawatts. This is actually in number of customers. This, you know -- you know, 1.4 percent, whatever.
So I think these two columns, the 2 and a half -- the reduction in per capita energy use and the CAGR, in the ten-year site plan world, these are -- these are together.
So really, we're showing -- the annual average growth rate in like 2019 was, I think, .6 percent. So we're showing at that point a .6 percent increase in net energy for load. And if you add these together, they're actually showing a slight reduction.
So, again -- because one of the things they did is break -- break apart and show, okay, here's growth as it would be if all these -- if energy efficiency wasn't already mixed into that. Ten-year site plan doesn't separate those.
Q Why did they not follow the same formula as the ten-year site plan?

A Because -- and I'll let -- you know, not to speculate, but there -- they broke it up into more pieces so they can show the impact of each component. I think they were trying to be able to show the impact of energy efficiency in particular.
And if you look at the ten-year site plan, we project a separate energy efficiency going forward, but there's nothing in the history, because we can't really tell from usage if it was -- if it was just down, was it, you know -- or was it down due to energy efficiency.
Q I'm sorry. Go ahead.
A Yeah, it's -- it's hard to separate out. We just don't have the granularity on the data for that.
Q So what assumptions were made about energy efficiency in connection with the ten-year site plan?
A We get a separate forecast from the Customer Solutions Group, and I don't recall what they are, but it's the -- there's an energy efficiency and DSM -- and we only take credit for energy efficiency that we stimulate, so via rebate programs, things like that. That's -- you know, that's kind of following the FEECA format.
This is taking credit for organic energy efficiency as well. So building codes change and homes get more energy efficient; that's reflected in here.

Q And when you say "here," you mean the McKinsey --
A In the McKinsey report.
We don't show them as energy efficiency in the ten-year site plan because we're not driving it.
Q And so by not including it, it results in a more conservative approach, because you know it exists?
A Right. And because it's -- the projections are driven by history, it's implicitly included in the history. It's the reason that the per capita consumption goes down 20 percent from earlier -- you know, for like 2010 through 2019.
That's reflecting not just energy efficiency, but natural gas homes, you know, solar that's already been installed. So all of those things.
You know, PV on somebody's roof doesn't look like generation to us; it just looks like less usage except for whatever they send back. So we only could really track a portion of their generation. It just looks like they're not using any energy during the daytime as far as the utility is concerned.
Q All right. You mentioned John Coarsey earlier. He was a direct report of yours?
A Yes.
Q And you worked with him for a long time;

correct?
A Right.
Q Okay. He has some fairly unflattering things to say about the McKinsey report. Do you remember the email to that effect?
A I don't remember the email, but I remember John's opinion about McKinsey.
(Exhibit Number 12 was marked for identification.)
BY MR. WEDEKIND:
Q Okay. Why don't you describe what you remember about John's opinion of McKinsey.
A So John is a transmission distribution guy, and the McKinsey people were a lot of things, but they were not transmission distribution people. So as far as how the -- how the grid operates, they didn't really have an appreciation for that.
And -- and then certainly when higher and higher levels of solar are coming in, John's concern is how does -- how do they balance that; how do -- you know, how does the system still function with all that solar on it. So this in particular, this email --
Q When you talk about "this," I just want to clarify. I just handed you Exhibit 12.
It's an email at the top from you to Andrew

Grass, and it's forwarding comments made by other folks at JEA. And if you turn to the bottom of the second page, you see Mr. Coarsey's comments about it --
A Yes.
Q -- which was sent to you on December 2nd, 2019.
A Yes.
Q So Mr. Coarsey says, "This entire PDF" -- and it attaches the McKinsey Strategic Plan-Complete Doc. Right? So he's talking about the McKinsey plan?
A Yeah. Yeah.
Q "This entire PDF, having been for the most part crafted with no input from my team seems to be the work of inexperienced consultants and financial people. This entire report seems to be more of a wish list put together by people who have little or no understanding of the critical technical hurdles most of this involves. The logic or lack thereof of comparing of JEA with other utilities that are completely different, and then drawing comparisons that by their nature are not completely accurate seems to be a recurring theme in this report. Comments below. I am forwarding to Matt and Russ to see if I am missing something."
Do you disagree with any of Mr. Coarsey's comments there?

A I do not.
Q So you share all of his opinions about the McKinsey report?
A And that's why I forwarded it to McKinsey unedited.
Q So if you look down at the very bottom, it looks to me like -- and I'm inferring here, so help me -- that you provided your own opinions which are highlighted on Page 4; is that right?
Because it says, "Steve McInall, Energy and Water Planning. And then it provides a breakout of the page numbers of the McKinsey report, and then the comments to the right of each of those that are highlighted, I presumed from that that these are your comments?
A So this wasn't an email from me. I think this -- so this would have been -- looks like somebody else's notes on -- from talking to me --
Q So let me help. If you go to Page 3, it's an email from Shawn Eads to the SLT, copying the McKinsey folks.
A Right.
Q And it says, "SLT, McKinsey has finished their strategic plan. Here it is. Tell me what you think."
And then it's got a list of people under it,

all the SLT members.

And then the next email up the chain is from you to John Coarsey, Jordan Pope, and Bob Zammatoro, who are your direct --

A My direct reports.

Q -- reports; right?

"FYI. Hope you had a great holiday."

And so I inferred from that that these are your comments, but maybe not. Or maybe the comments that you made in connection with your -- the very first email in the chain on December 4th to Andrew Grass, because your comment on Pages 140 through 147 are "same as above," and I wonder if that meant same as above meaning same as John Coarsey's comments.

A Yeah, I really don't recall -- you know, I'd have to look at the full document to see this. I recall that they were making -- and by "they," I mean McKinsey -- comparisons between us and other utilities, as John pointed out. And to the level of this other utility spends this much money per mile on maintenance and everything and JEA spends this much and they're different.

It's like -- and it is really hard to compare. I mean, there's differences in -- you know, even differences in the kinds of trees around. So when we

get hit by a hurricane, we've got pine trees and live oaks coming down on lines. If somebody in the South gets hit by a hurricane, they get palm trees. It's much less of an impact. It doesn't have the same kind of height to start with.

So, you know, kind of doing these things, there was a -- I remember on the water side there was a particular issue, and I -- where comparing our miles of -- our cost per mile of pipe to other utilities.

And we're very a large water utility, and on the sewer side in particular, there's a lot of lift stations, a lot of pumping, so a lot more equipment that needs to be used and a lot more people to maintain that.

So the comparison metrics don't always look attractive just, you know, A to B. You have to kind of break it down to not just mile of pipe, but per lift station or per some other metric that kind of separates out the fact that we just have to have more lift stations because our territory is so flat.

If we were in the mountains, we'd put the sewer plant at the bottom and it would all just run downhill. You know, that's -- we don't -- you know, we don't have any hills to kind of utilize that way. So --

Q Well, let me do this. And I appreciate everything you just said. I understand that.

I want to walk through these comments and just see -- just kind of line by line and see if you agree.

A Sure.

Q "Electric planning had virtually zero input into this," meaning the McKinsey report.

Do you agree with that?

A With this, yes. There were -- there were, you know -- and especially with regard to the -- talking about the transmission distribution line and things, the -- McKinsey just came in with these.

And in this time frame, I believe what they were doing was looking for -- because this is within the ITN process. This in November-December 2019, so the ITN is well underway.

These were feeding into the management presentation, and what they were trying to do is identify to the bidders, essentially -- so this is really no longer even for an internal audience. This is for -- this is identifying projects that bidders can do. And this is how it was explained to me.

So -- because the IOUs -- investor-owned utilities -- looking for projects that were justifiable so they could do the work, earn a rate of return, and, you know, make a profit. So just this one is captured on the page here, it's conversion of -- you know, it's

overhead to underground conversion. That's been a topic of conversation for decades.

Q And it's 4 million bucks a mile, give or take, and they estimated like 1 and a half or 2?

A Right.

Q Laughably wrong; right?

My whole point in all of this is to say that the McKinsey report was used by members of the SLT to justify a sale. Now we're in the sale process. We're talking to bidders, and all of a sudden, the McKinsey report is being picked apart for a different presentation to a different audience. JEA's SLT is no longer talking to the board to get -- to convince them that we need to go sell ourselves. Now we're talking to our actual potential purchasers, and we're going to tell them the truth about what we think of the McKinsey report. That's what I read from all of this.

Do you disagree with any of that?

A Tell who the truth about the McKinsey report?

Q The bidders in Atlanta when you're talking to them.

A I don't think -- you know, because this is all still coming from McKinsey. So they're -- as I recall, there was no departure from the projection of, you know, overall sales when talking to the bidders from what was

told to the board.

This is -- this is looking at specific projects that McKinsey felt would add value to a bidder -- you know, if a bidder felt there was a project they could do that was going to cost X and make them 10 percent of X, because that's their rate of return that the PSC was to have, then that is value to the bidder that would be factored into -- into their price; like that they would know we're going to pay X, we're going to get so much of it back in -- you know, in a rate of return. So, you know --

Q So what was their response to this? So you tell McKinsey all of our electric people think that you're inexperienced, you don't know what you're doing, and this is laughable. What was the response from McKinsey?

A I honestly don't recall what their response was. But the management presentation was pretty well -- you know, I think the presentation in Atlanta were the next week from this. They may have backed off of some of this, taken some of these out. I'd have to look at the management presentation.

The -- and again, the management presentation was -- there was a lot of -- a lot of it was based on, you know, just like anything, old presentations and --

but a lot of it was developed and kind of presented to most of the SLT at the same time. You know, we were kind of given pieces that were applicable, and then I think this is -- this is when we finally were allowed to share it with the directors, so that's why -- you know, that's why John's expressing there wasn't any input from --

Q From the director level?

A -- from the director level up until that point.

Q And we're in December of 2019?

A December 2019. On this first station. They had input into the McKinsey planning documents prior to that.

Q When did JEA stop using operations-based metrics and switch to financial-based metrics to guide its long-term planning?

A So as far as the rating agencies, they switched in 2014.

Q What about with the board?

A Those are the same numbers that were shown to the board. Now, the ten-year site plan typically went to the board --

Q Typically --

A -- as well.

Q -- but it didn't in '19, did it?

A It did not.

Q Why not?

A There was a lot going on, and the -- Aaron made the call -- or Aaron or Melissa, I forget which. But I -- if you go through emails, you'll find a draft presentation for the 2019 ten-year site plan that had been forwarded around and was -- the decision was made above me not to take it to the board.

Q It was ready -- the ten-year site plan in 2019 was ready to be presented --

A Yes.

Q -- to the JEA board?

A Yes.

Q But Aaron Zahn made the decision not to have it presented to the board?

A Based on, you know, whatever else was on the agenda. Yeah.

Q And instead something called a management case was presented?

A Sounds about right.

Q That's the first time that something called a management case had ever been presented to the JEA board; correct?

A In my recollection.

Q I meant to ask you this earlier, but I want to talk just for a minute about your January interview.

You said that you had gone back and read the transcript as you were preparing for today.

A Yeah.

Q Do you remember reading anything in your transcript or when you re-watched your presentation to the Special Investigation Committee that was either incomplete or needs supplementation or correction in any way?

A Nothing substantial. There were maybe a couple typos where it showed up as "resilient" and I think I said -- would have said either, you know, "robust" or -- you know, just more of the -- you know, reflective of a different scenario approach; that they were looking for something that was -- was going to be able to withstand, you know, what actually happened and kind of fit the reality. We're kind of in the middle there somewhere. I don't recall anything -- any substantial corrections that need to be made.

Q Even -- and with the benefit of hindsight now, you've had the opportunity to learn probably more than you knew at the time that you --

A Yes.

Q -- testified.

Did anything, based on information that you have since learned, warrant a correction or a revision of any of your prior comments?

A I didn't look at it from the point of view of what I know now as much as what I knew then. Certainly, you know, not having been privy to the genesis of these, you know, I can't say it overly alarms me. The presentations always change a lot.

Whether or not there was a -- you know, whether there was already a goal in mind to kind of foresee, I can't say. You know, I wasn't in those meetings, so I don't know what the discussion was. Yeah.

MR. WEDEKIND: Let's take a quick break.

(Recess taken from 11:54 a.m. to 12:02 p.m.)

BY MR. WEDEKIND:

Q In preparation for your testimony before the Special Investigation Committee, who did you talk with?

A Let's see. That was early March. I would have talked with Melissa, who was my supervisor at the time, and I'm sure I consulted with my attorneys and probably talked with my direct reports a little bit. But really mostly Melissa.

Q What attorneys?

A These guys.

Q Okay. Mr. Bledsoe?

A Yes, Mr. Bledsoe.

Q Okay. I'm not going to ask about the content.

MR. BLEDSOE: Yeah. Actually, we had Ken Wright and Sam Jacobson involved too. I was out of town right before so --

BY MR. WEDEKIND:

Q Same law firm, though?

A Yeah.

Q Okay. Not OGC is my point.

MR. BLEDSOE: Okay.

A There were some discussions with OGC with -- I think it was with Kyle Gavin at that time.

Q About the substance of your testimony?

A Yes. Yes. Just prep and things.

Q Okay. I know from your testimony that Ms. Dykes was not a fan of our work, because you had testified to that.

A I did.

Q What did -- what did she tell you? Did she give you any talking points?

A There was a letter that she had prepared for the board. I don't know if you got that --

Q I saw it.

A All right. It was pretty much that. The

chart in there showing the different projections and the -- compared to actuals, and then the financial projections, that was produced by myself and Juli Crawford. I had the electric planning projection part and she had the financial projection part.

So, you know, really a lot of the discussion was around FPU and looking at the -- what had happened with FPU. And really it's sort of a difference of opinion there where I know you guys thought as a wholesale contract, it's -- just exclude the whole thing.

But the decline in the FPU load -- and re-watching your testimony, you even mention that at the end, pointed out that the FPU load had declined substantially over time, I think, from 468,000 or so megawatt hours in like '05 to like 152,000 in 2017, in the final year. So -- and that was driven by the cogen plants on the island by decreased load.

And looking at their -- at FPU's profile was -- in the early days, they were a really good, solid customer as far as high demand factor. With all the cogen, they -- their demand off peak was dropping to zero, so, you know, they weren't really the same -- the same high load factor type customer that they used to be.

But earlier in '05, '06, FPU represented like 3 and a half percent of our sales, and in '17 it was down to 1 percent, a little over 1 percent. So there had already been a big drop there driven essentially by distribute generation.

So I think there's a fundamental -- you know, we had thought that was part of the story of if you're talking about losing sales to distribute generation, whether it's, you know, at the home level or at the, you know, commercial industrial level, it was part of the story.

That, and the 2014 transition away from the using ten-year site plan to using a forecast that finance came up with, which was 10 million megawatt hours flat.

And, you know, honestly, it was probably, for their purposes, a better forecast, because -- for financial purposes -- just like with a public company, you want to kind of say what you think you're going to make and then make a little more than that. Then you beat expectations. If you say I'm going to make a higher number and don't, you've missed expectations, and there's an unfavorable reaction to it.

So it's -- you know, that departure happened in 2014 when Paul was the CEO -- that's Paul McElroy --

and Melissa was the CFO.

And, you know, so then it really goes down to was there or wasn't there an 8 percent drop over the past ten years. So, you know, based on what the FPU load was in the final year, I'd say there was either, you know, a 7 or 8 percent drop over that time period.

And then McKinsey projecting a similar drop over the next ten, it doesn't -- you know, it's not -- it's like it hasn't just happened. So, you know -- and, of course, obviously nobody anticipated COVID, but there's a -- you know, there's been a pretty sharp economic drop-off because of -- because of that.

So that's almost like the -- you know, that theoretical unknown unknown. You don't know what you don't know and what's going to happen, but something's going to happen. You know, the last ten years it was the economic recession in -- from '08 to '10. There probably will be one, you know, in the next ten-year period too.

So it's -- you hope that a reasonable annual growth rate -- you know, because the one reason now is based on -- you know, includes effects of the last recession, so -- and that's why it's down around half a percent per year. It's -- it's barely above flat.

And looking at the numbers -- so if we're at

12 million megawatt hours a year, a half percent, which is the growth, is 60,000 megawatt hours. That's not much. You take -- we've got -- 4.8 million megawatt hours of that 12 is -- is residential. So a 1 percent decrease in residential load is 48,000 megawatt hours. That almost wipes out all your gain for the year.

So the point being that half a percent per year is so close to flat that it doesn't take much to make it negative.

Q So the issue, I think, that we brought up -- one of the issues we brought up, is the quality of information being provided to the board. I'm not here to argue our position --

A Okay.

Q -- versus your position, because we could go back and forth, and ultimately the truth is that we might both be right. But --

A Yeah.

Q -- the issue really isn't so much who's right and who's wrong, but did the board have all that information when it was weighing the decisions that the board had to make. That's the real issue.

So one of the issues that we raised -- I'm going to hand you Exhibit 13, which is a series of emails.

(Exhibit Number 13 was marked for identification.)

BY MR. WEDEKIND:

Q One of the issues that we identified was -- that you just talked about was the ten-year site plan and its use as a -- for long-term strategic planning. And here in the series of emails that's identified as Exhibit 13, there's back-and-forth.

In the first email you say, "Sarah" -- Sarah Brody at McKinsey -- "I am trying to come with a comparison of the ten-year site plan and McKinsey forecasts. Did you start with our forecast? If so, the answer is whatever tweaks McKinsey made."

And then her response is on the next page. "Hi, Steve. We started with the sales forecast from JEA. I assume this is the same as what's in the ten-year site plan. Then we made modifications -- based on joint McKinsey/JEA assumptions. EV growth, for example, was based partly on projected vehicle sales in the territory, from the planning team."

So why is it that you and Sarah Brody are going back and forth about comparing the McKinsey report to the ten-year site plan in September of 2019?

A Because we were getting questions about exactly this, about the difference between the McKinsey

report and the ten-year site plan.

Q Okay. And those questions weren't just coming from us. In fact, they weren't coming from us at all at that point. I think the civic council had raised issues. Do you recall that?

A I do, yeah.

Q Do you remember rating agencies had also asked the same or similar question?

A I don't recall that the rating agencies did, but, you know --

Q Would it surprise you if you found out that the rating agencies did ask the same question?

A It wouldn't surprise me, no.

Q And you, as part of the ITN process, were tasked at least in part in responding to questions from bidders; right?

A Once that opened up, yeah.

Q And then some of the bidders actually asked the same question: Why is there a deviation from the ten-year site plan in the McKinsey materials that the bidders were provided. Right?

A Right.

Q So it's not just us.

A No, no.

Q The civic council, everybody -- and rating

agencies, these are the people whose sole job is to follow the utility industry are asking the same questions; right? So it's a good question to ask.

A Right.

Q And in September of 2019, it seems like you didn't know the answer to the question and worked with McKinsey to craft the answer to the question. And there's all this back-and-forth between you and Sarah Brody at McKinsey and others in which drafts are exchanged to explain these discrepancies.

A Yep, I recall this.

Q Yeah. Who tasked you with doing this?

A Melissa.

Q Why?

A Well, she wanted to know, too, just why -- you know, why they were different --

Q So in September of 2019, she didn't know the answer to the question?

A Not in the level of detail that was needed to, you know, properly answer the question. Because, again, there was -- you know, I don't know if anybody had transparency into McKinsey's black box. So I know how our forecast was developed.

Q "Ours" meaning the ten-year site plan?

A Ten-year site plan. And was satisfied with

the result of the ten-year site plan because it was conservative for the purpose that it was intended for, you know, showing that we have adequate generation to cover the expected demand.

McKinsey, you know -- and again, not being privy prior to all of the back-and-forth apparently when they came up with the forecast and all those tweaks, you know, so I needed information from Sarah to kind of break it down piece by piece as far as what the -- you know, where those differences were coming from.

Q Who is Mary Guyton-Baker?

A She was the manager of generation planning.

Q Who did she report to?

A She reported to John Coarsey.

Q Who reported to you?

A Who reported to me.

Q Okay. I've got some undated text messages here --

MR. NUNN: They're from September 23rd. I'm sorry.

MR. WEDEKIND: Of 2019?

MR. NUNN: Yes.

BY MR. WEDEKIND:

Q Okay. September 23rd, 2019.

A Okay.

Q So same day that you're working with Sarah Brody on this. They're short, and they're between you and Ms. Baker.

It says, "Stephanie said she sent the Moody's data to McKinsey in January."

That must be January 2019. Do you know what that is, the Moody's data?

A The Moody's data is the base economic dec that we purchase every year to construct the ten-year site plan.

Q And she, Ms. Baker, replies, "Do you want us to do more? Do you want that email forwarded to you?"

And you reply, "Yes, thanks. Looking at justifying the McKinsey numbers." And emoji. It doesn't have what the emoji is.

A Probably an exasperated face.

Q She says, "Enjoy. McKinsey can do that much easier."

And your reply is, "I know. Going to get what we have and get with them."

Right. So your job was to justify the McKinsey numbers?

A So justify or explain. You know, really the job was to, you know, demonstrate how they got from our ten-year site -- or, you know, from the -- because we

start -- you know, because we start at the same place, essentially, you know, actual sales in 2018.

So I know how we got to where we got, and the question was how did McKinsey get exactly to where they were. And it probably would have been easier to figure out with these presentations.

But, you know -- and so McKinsey, I think, was -- they didn't want to just open up the model and say, you know, here's the equations. So they would just, you know, give me bits of information until I was either exhausted or satisfied.

Q Did you ever become satisfied?

A I think we got pretty close. The biggest difference seemed to be the -- their solar assumptions. That explained most of it.

Q Which were much more aggressive?

A Which were much more aggressive.

Q And that you disagreed with?

A Yes.

Q Because I think that you've said that the grid parity date that was being used was 2024, and your opinion is that date should be at least in the early --

A Early '30s.

Q -- 2030s?

A Yeah.

Q Okay. That would make from -- a 30-year long-term strategic planning --
A Would not make much difference.
Q But it would make a huge difference if you were using it to extrapolate data to try to justify a sale? Do you agree with that?
A Would make a bigger difference, yes.
Q How much bigger?
A I can't say. I don't know. I've got a lot of numbers in my head; that's not one of them.
Q Were you in meetings with the SLT in which Mr. Zahn utilized a whiteboard?
A Yes.
Q Was that frequent?
A It was fairly common, yeah.
Q Did anybody record the data that was on Mr. Zahn's whiteboards that was being discussed by the SLT?
A It depends. I think sometimes there were people who would take a picture of it.
Q What was Mr. Zahn's reaction to people who would take a picture of his whiteboard?
A I never saw him have a reaction to it. I think in a lot of cases he was proud of his artwork and was happy they were taking a picture of it.

Q Did you ever see any whiteboards in which the PUP was drawn out?
A I don't recall. If there was, it was just the overall sketch of the long-term incentive plan, you know, just what went to the board.
Q Did you ever see a whiteboard with an overall sketch of the long-term incentive plan?
A I don't recall, but that's as much detail as I ever really kind of saw on the PUPs.
Q Did you ever see a whiteboard with any type of calculations with respect to the PUP?
A No.
Q Or allocation of performance units?
A No.
Q Did you ever tell anybody above you, so either Ms. Dykes or Mr. Zahn, about your concerns with the aggressive approach taken by McKinsey?
A I believe I did have conversations with -- and possibly just in group conversations where Melissa or Aaron were present just expressing skepticism. I certainly wasn't bashful about either my opinion about the combined cycle plan or how aggressive the solar was.
You know -- and, the grid parity was one thing, but then the -- their -- McKinsey's projections for how much solar to add to the grid was yet another,

and I thought those also were overly aggressive.
Q Because of the reasons you had talked about earlier?
A Right, the grid stability, the space, the -- you know, being able to spread things out; transmission constraints. Just that whole difference between capacity and energy, and, you know -- and storage is the holy grail there that resolves a lot of the issues, but that pushes that parity point out quite a bit.
And I think by the end, McKinsey had pushed out the parity on batteries and had decreased the amount of solar they were recommending as part of the strategic plan. So my fussing did bear some fruit.
Q You sat through the board meetings at which the McKinsey presentations were provided; correct?
A If I didn't, I was -- I watched them on closed circuit.
Q Did anybody ever say or fail to say anything to the board that you would consider to be misleading?
A Either say or failed to say?
Q Yes.
A You know, not -- not that I -- not that I specifically recall. You know, the -- I know we focused a lot on the projections and the McKinsey forecast. I think it may have been more balanced to present a wider

range of options.
But, you know, I know -- you know, I didn't know the board as well, so I didn't know what the board, you know, was looking for. I'm reminded of Eisenhower's quote about ranges are for cattle; give me a number.
So, you know, the conduit to the board was the CEO, and he's the one who had the relationship with the board and decided how things were going to be presented to the board. And the content.
Q So Mr. Zahn had total authority to determine what information was going to be provided to the board and who was going to be presenting it?
A Right. And, you know -- and case in point, the non-presentation of the ten-year site plan in 2019, you know, which was a document that -- had prepared and the ten-year site plan still went to the PSC, obviously.
Q And the board had historically received a report from management about the ten-year site plan?
A Right. There was no requirement to present it to them, but historically they had received that. Now, in 2018 it had been late. It was in June. But that's because there were a lot of things going on in April and May of 2018. So that kind of interrupted the normal flow where it usually went to the board either in March or April.

Q If the ten-year site plan had been presented, it would have provided additional information to the board from which it could ultimately make a decision about all of the different McKinsey scenarios that were being presented to it; correct?

A Correct. Correct. I would have been answering those McKinsey versus ten-year site plan questions a few months earlier.

Q And I believe earlier you testified that the first few scenarios by McKinsey were designed to drive a board decision to select Scenario 3, to consider nontraditional alternatives?

A Right. Right. So status quo obviously wasn't -- you know, wasn't attractive. Status Quo 2 was Draconian. So I think that -- yes --

Q So Scenario -- sorry. Go ahead.

A The intent was Scenario 3, whichever way that ended up, to at least have that conversation outed. You know, at that point, you know, certainly I had no idea what any -- what the outcome of any of the bid process was going to be, so they could have come back around to Scenario 2.

Q Did you ever talk to anybody about the co-op alternative?

A No. No, I didn't.

Q Did you consider that to be a viable alternative?

A I've certainly read information, including from yourself, that indicates that that was not a viable alternative. I'm not as familiar with the co-op model. You know, it doesn't surprise me that it's not --

Q Viable?

A Not viable, yeah.

Q What about the IPO alternative?

A Again, you know, that's -- I think the bankers were working on that. I don't know if anybody internally was working on the IPO alternative.

Interestingly, one of the bidders started as a -- started as a muni up in Canada and had gone through an IPO process. So I didn't know that until they mentioned it in the presentation. So that was -- that was interesting.

So, again, I think it depends on -- you know, there's a lot of variables there that I'm not just the expert on.

Q You said earlier that you attended the Special Investigation Committee where Mr. Brost testified?

A It was at the same one.

Q Yeah. So you heard his testimony?

A Yeah.

Q What did you think about his testimony? Did you hear anything that he testified to that you disagreed with?

A Well, I didn't review Mike's testimony in preparation for this, so it's been a while. As I recall, the genesis or the upshot of Mike's argument was that JEA had been a great utility for the 35 years he worked there and there's no reason why it was going to change.

And, you know -- you know, I worked for Mike for five years or six years, I guess. So, you know, Mike's a smart guy. I appreciate Mike.

I think in general the utility industry is facing challenges now that they haven't been for the past 35 years, and I don't think what he said kind of acknowledged the fact that there are changes coming. There is -- you know, there is an increased ability for people to not use the utility.

And, you know, I know he put a lot of weight on being able to grow the demand rate, and that solves a lot of the problems.

You know, just as a complete aside, the big problem with the electric industry, you know, is the rate structure. So for residential, about 5 percent of the rate is fixed and 95 percent is variable, and on the

cost side, 70 percent of the costs are fixed and 30 percent is variable. So if somebody does something to reduce their usage, they impact that 95 percent piece, and then the costs just go up for everybody else, you know, as that happens. And then as costs go up more, people decide they want to go over.

So, you know, I think, you know, everything Mike said about how the utility's been and everything is -- you know, was absolutely true. I think going forward as far as the planning aspect, that was -- that is what he hit me for.

Q What about the concept of decoupling rates?

A As far as going to a demand rate?

Q Yes.

A I think it's absolutely necessary. I think that there's been a group working on it for a couple of years. There's a -- there's actually a beta test, you know, out in the field, a couple thousand people, you know, customers.

And it's -- there's a couple hard things with it; you know, communication, getting people to understand how it works, and having it not adversely impact low-income customers, the 30 percent -- 30, 40 percent of the customers that we have that are ALICE, the asset-limited income-constrained employed.

So there's just a big chunk of people that are -- that their monthly JEA bill could be their largest single monthly bill. And devising a rate that fairly compensates the utility for what's provided while not adversely impacting a very vulnerable class of customers is really difficult. I'm glad it wasn't my job.

Q What did Mr. Zahn think about demand pricing?

A I never did discuss it with him, because that wasn't something that my group was working on.

Q So a group was working on it, just not your group?

A Right. Right. It was the finance -- finance and customer solutions, I think together, were working on that.

Q Okay. Let's talk about EDF just for a second.

A Sure.

Q You were involved, as you mentioned earlier, in the deal?

A Right.

Q And I think that you testified during your last interview that Mr. Zahn came in and inserted a few extra demands as part of the deal, including buyout options?

A Right.

Q Why did he do that?

A He didn't say why he wanted it. He just thought it would add value. Certainly, you know, I can't think of any reason why we, as JEA, would want to buy it out.

Q Right. But if an IOU were to acquire JEA, it could exercise those buyout options in order to increase its rate base, couldn't it?

A It could.

Q And so that would be a really good reason for Mr. Zahn to want to insert those buyout options into the EDF deal, wouldn't it?

A Yes, it would.

Q Did he ever suggest that to you?

A No. No.

Q Did you infer that on your own before I just mentioned that to you?

A Yeah. Yeah. You know, not -- you know, I hadn't really thought about it, you know, while it was going on, but certainly once the ITN came up, it's like, well, I guess, you know, that -- that kind of fit then, because certainly that was well prior to any discussions about a sale.

Q Right. So when did the EDF transaction happen?

A The contract was signed in February 2019.

Q Okay. So --

A I think it went to the board in December 2018.

Q Okay. So at least in December 2018, Mr. Zahn was structuring deals that would make no sense for JEA but would make a lot of sense if JEA were to be sold to an IOU?

A I think that's fair.

Q I want to talk about Plant Vogtle for just a second. Are you familiar with Plant Vogtle?

A Yes, I am.

Just as an aside, Alvin Vogtle, who it was named after, was the Southern Company CEO, and he was the inspiration for the Steve McQueen character in The Great Escape.

Q I did not know that. That's your --

A That's my tidbit for the day.

Q Your Jeopardy answer for the day.

A Yeah.

Q None of us would have gotten it except for you.

Was the Vogtle PPA a reason to sell JEA?

A No.

Q Why not?

A Well, for one thing, the Vogtle PPA was

structured such that it could only be held by another municipal. The loans, the --

Q The bond covenants?

A Yeah, the bond covenants. The -- I think the -- was it the BABs, the build America bonds, required that -- all the counter parties to be munis.

So the -- how Vogtle would fall in any sort of transaction was definitely something that, you know, I never heard a satisfactory answer to.

Q Would a sale have had any impact on the ratepayers in terms of the Vogtle PPA?

A Depending on how they found to structure it. I don't know. You know, there's --

Q So if the PPA were restructured in such a way that JEA purchased a percentage increase in the megawatt hours before a sale?

A Say that again.

Q So if JEA purchased a percentage interest in Vogtle equivalent to the 206 --

A All right. So it converted to ownership?

Q (Indicates.)

A If they converted it to ownership?

Q Correct. And prior to a sale, and then JEA was sold to an IOU, wouldn't that also, like the EDP deal, have --

A EDF?
Q -- sorry -- EDF deal potentially have impacted the purchaser's rate base?
A I mean, in that scenario, yeah. You know, I can't imagine that Southern Company was going to agree to any sort of a sale like that, nor -- nor MEAG, because the whole structure of the deal was we get the power for 20 years and then it goes back to MEAG as their -- you know, as their community's growing to the point where they need the power. So that -- that would make the ITN process look easy.
Q But there would be a potential benefit to a purchaser if JEA restructured the deal so that it had an ownership interest in Vogtle?
A Yeah, if that purchaser could show that purchase was prudent, which given the cost overruns at Vogtle might be a bit of a stretch.
Q And that would have to be done before the PSC?
A As would anything with an IOU, yeah.
(Exhibit Number 14 was marked for identification.)
BY MR. WEDEKIND:
Q I'm handing you Exhibit 14. This is an email from Ryan Wannemacher to you dated August 15th, 2019, and it's got, it looks like, billing codes for a bunch

of different people, including Number 1 at the very bottom there, Holland & Knight, for strategic planning.
Why was Holland & Knight being paid under the project for strategic planning? Do you know?
A I don't. You know, Holland & Knight was the Vogtle attorney, so I don't know if they were providing input on the whole Vogtle legal side. The -- yeah.
I think the facilities we used in Atlanta for the presentations were at the Holland & Knight office, so --
Q The ITN presentation?
A The ITN presentation, the management presentation. I don't think they would have had a separate code just for like, you know, letting us use their building -- or their conference room.
But no, I don't know why Holland & Knight would have been used other than a Vogtle-related ...
(Exhibit Number 15 was marked for identification.)
BY MR. WEDEKIND:
Q Exhibit 15 is an email from you to Randy Van Aartsen --
A Aartsen.
Q -- Aartsen -- from March 2019.
A Okay.

Q It relates to SQ2. If you go down and look at Julio Romero's email to you. And you ask Randy -- you forwarded Julio's email, and you asked Randy to look at the attached with respect to natural gas sales. "Don't send me anything. This is a what-if exercise."
What were you asking Randy to do here?
A So this whole effort that Julio was doing was -- it was the whole new business line aspect. And they were really trying to develop what revenue -- revenue estimates for new business lines.
I had started, and then Randy was working on developing a pro forma -- and the finance people were involved too -- for a new -- for a JEA natural gas business. So if we took over the franchise from TECO. And this was asking Randy to -- what kind of revenue or entire business model would we see; you know, what are the numbers looking like for that.
Q What did he come back to you with?
A We've got a -- there's a full pro forma. I think it's, you know -- and again, it all depends on assumptions, so -- and the big thing we don't have is the knowledge of how many natural gas customers TECO has in our territory. We don't know that number.
So made some estimates, you know, pretty much backing up from TECO's payment to the City for the

franchise fee, which represents X percent of their sales. Okay, therefore their sales were this. Make some more assumptions about how much is from commercial industrial and how much is residential, and came up with like a 30,000-type number.
And then, all right, so if we had 30,000 residential customers and X number of commercial industrial customers, and I think we worked it out -- it was on the order of 5 to $10 million a year, in that range, and then growth assumptions on top of that.
So by the end of 10 or 15 years, you know -- because we were looking at being able to capture both the new developments and also doing some backfitting that TECO historically hasn't done in conjunction with water projects.
There's other utilities that have water and sewer and gas, and the gas is kind of in there with the water and sewer because it's all pipes and it's all underground.
So there are some synchronies that you can get by having both of those -- both of those groups, so, you know ... And we looked at other munis that have gas, like GRU and City Utilities in Missouri, and then just kind of sketched out here's how many people we need to run it and how to -- pretty much a paper organization of

here's what it takes, here's what it would cost, and ran that through.

And, you know, between the finance group and the fuels group, you know, all that information was -- this was just trying to come up with a one-page sanitized -- because, as you can imagine, all the details about our plans for how to become a natural gas utility weren't something that we necessarily wanted TECO to have. So that's -- you know, because it kind of makes it easier to figure out what we're doing.

Q I understand from your testimony that you're a proponent of getting into the natural gas business?

A I am. I am.

Q Did Mr. Zahn ever take any interest in that?

A He was very interested in it. You know, he was -- he was for it. He never -- never got into the details on it. We never had a meeting to kind of go over where we were. I was -- I had started that when I was a director and I had the fuels department, and I was still interested in it as part of planning, but Randy didn't -- you know, didn't report to me anymore at this point. He was one of my reports as a director.

So I kind of worked Caren in, and, you know, she kind of gave her blessing to, you know, go ahead and use the fuels group and chase this. But really, it's

all -- it's all just plans on paper right now.

Pretty much it.

MR. NUNN: Mr. McInall, you participated in the management presentations in Atlanta; is that correct?

THE WITNESS: That's correct.

MR. NUNN: And the management presentations were made on the basis of a prepared script; is that correct?

THE WITNESS: That is correct.

MR. NUNN: Did you prepare your portion of the script or was it -- or did others provide input into it?

THE WITNESS: I prepared it.

MR. NUNN: Okay. There is a statement that you make in the script, "Generally with flat" -- "with fairly flat growth, around a half a percent annual average growth rate, new generation is not needed in the near future."

Why would you mention a half percent growth rate when you were projecting an 8 percent decline in growth for 2030?

THE WITNESS: Because that was my ten-year site plan number, and as far as any new generation, that would come from the site planning, not the

strategic planning.

MR. NUNN: You mention that you read the 2019 review of the ten-year site plans. Did you happen -- have you read the Florida Power & Light's 2019 ten-year site plan?

THE WITNESS: I have not read the whole thing, no. I would have looked at --

MR. NUNN: Let me just read a short portion of it and get your reaction.

"The energy efficiency variable is included to capture the impacts from major energy efficient codes and standards, including those associated with the 2005 National Energy Policy Act, the 2007 Independence and Security Act, and savings resulting from the use of compact fluorescent bulbs and LEDs.

The estimated impact from these codes and standards includes engineering estimates and any resulting behavioral changes. The impact of these savings began in 2005, and cumulative impact on net energy for loads is expected to reach 11,752 gigawatts by 2028. This represents an approximately 8.4 percent reduction in what the forecasted net energy per load for 2028 would have been absent these codes and standards."

Do you have a reaction to that statement and that forecast versus the McKinsey forecast?

THE WITNESS: So I'd probably need a little longer to digest that and compare. You know, as far as energy efficiency, I know empirically what we've seen is with all the energy efficiency, you know, and growth, they're pretty much offsetting each other. So that's why we have a half a percent per year growth rate.

I think FPL also has a higher annual average growth rate than we do. You know, I have no reason to question FPL's numbers.

MR. NUNN: Fair enough.

You mentioned the economic recession. Do you recall the year that had the highest energy demand for JEA?

THE WITNESS: I want to say '05, '06, kind of back then --

MR. NUNN: I believe it was 2010.

THE WITNESS: 2010, yeah.

MR. NUNN: Do you know why that was?

THE WITNESS: Why it was the highest?

MR. NUNN: Yes. What was unusual about that year?

THE WITNESS: Probably very cold or very hot.

MR. NUNN: Yes. It was the polar vortex year --
THE WITNESS: Yes.
MR. NUNN: -- in which we had a high number of degree days.
And weather is the biggest variable from year to year in variations between megawatt hour sales demand; is that correct?
THE WITNESS: Well, yes. It causes a lot of variation, and that's why our forecasts are done on a normalized -- a rather normal basis.
MR. NUNN: Sure.
So do you -- to your knowledge, did McKinsey incorporate any assumptions about the increase of degree days caused by climate change into its forecast?
THE WITNESS: I don't know. I don't think they did.
MR. NUNN: Okay. So I've finished with my questions. If you want to wrap up.
MR. WEDEKIND: I don't have any further questions, but I know that you have a statement that you want to provide, so I want to give you the opportunity to do that now.
THE WITNESS: All right. It won't take long.

And thank you for the opportunity.
I have worked in various capacities at JEA for the past nine years. It has been my greatest professional pleasure to lead the groups that I have -- generation planning, fuels, byproducts, energy planning, water planning, and real estate and economic development.
The people that I worked with at JEA are among the finest that I've ever known. I am proud of all that my teams have accomplished over the years:
Implemented solar plans that added 27 megawatts of utility scale solar and another 250 megawatts of solar currently being developed.
Led negotiations with FPL for the closure of Scherer Unit 4, and replacement with a power purchase agreement, saving JEA approximately $200 million NPV over 20 years and cutting CO2 emissions by a half a million tons annually.
Part of the team that negotiated the closure of the St. Johns River Power Park. Identified and secured alternative power sources via power purchase agreement. Closure saved JEA customers $450 million NPV.
Reduced carbon dioxide emissions by over 40 percent.

Launched the company-wide innovation forum, "Watts Up" to share initiatives across business lines.
Investigated the integration of battery virtual power plants, reciprocating internal combustion engines, and utility-scale battery storage as methods to aid the increase in solar energy on the grid.
Started the redevelopment planning of the former St. Johns River Power Park so that JEA and the City can benefit from this valuable resource.
Planned for large-scale purified water system on JEA's south grid to offset future consumptive use permit challenges.
Prepared fuel-hedging strategies to reduce fuel cost risk as part of a $400 million annual fuel budget.
And developed and implemented distributed generation and battery incentive programs.
Through all of this, I have always acted ethically, impartially, fairly, and honestly. My greatest accomplishment at JEA was assembling the highly qualified team of individuals who worked for me and without whom I could not have accomplished anything. I wish them and all my former colleagues

all the best in the future.
Do you want a copy of that?
MR. WEDEKIND: It's in the record.
THE WITNESS: Okay.
MR. BLEDSOE: Do you want to make it an exhibit?
MR. WEDEKIND: If you'd like, yes. That will be Exhibit Number 16.
(Exhibit Number 16 was marked for identification.)
THE WITNESS: Thank you.
MR. WEDEKIND: No further questions. Thank you very much for your time.
(Sworn statement concluded at 12:57 p.m.)

CERTIFICATE OF OATH

STATE OF FLORIDA)
COUNTY OF DUVAL)

I, the undersigned authority, certify that STEVEN MCINALL personally appeared before me and was duly sworn.

WITNESS my hand and official seal this 17th day of July, 2020.

_____
Heather M. Thomas
Court Reporter
Notary Public-State of Florida
My Commission No. GG 281865
My Commission Expires 2/1/2023

CERTIFICATE OF REPORTER

STATE OF FLORIDA
COUNTY OF DUVAL

I, HEATHER M. THOMAS, Court Reporter and Notary Public, State of Florida, was authorized to and did stenographically report the foregoing proceedings; and that the transcript, pages 4 through 139, is a true and accurate record of my stenographic notes.

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

DATED this 17th day of July, 2020.

_____
Heather M. Thomas
Court Reporter

ERRATA SHEET

DO NOT WRITE ON TRANSCRIPT-ENTER CHANGES HERE

IN RE: STEVEN MCINALL-TERMINATION OF EMPLOYMENT AGREEMENT WITH JEA

PAGE NUMBER	LINE NUMBER	CHANGE	REASON
------	----------	----------	
------	----------	----------	
------	----------	----------	
------	----------	----------	
------	----------	----------	
------	----------	----------	
------	----------	----------	
------	----------	----------	
------	----------	----------	
------	----------	----------	
------	----------	----------	
------	----------	----------	

Under penalties of perjury, I declare that I have read my deposition and that it is true and correct subject to any changes in form or substance entered here.

_____ _____
DATE NAME

From: McInall, Steven G. - VP & Chief Energy & Water Planning
Sent: Friday, December 20, 2019 10:08 AM
To: Gillespie, Jeanie M.
Cc: Hutchinson, Jasen C. - Mgr Corporate Records Compliance
Subject: RE: JEA IRP
Attachments: DRAFT JEA IRP Update_03212019_REV5.pptx

We don't have a draft or a final – I tapped the brakes on it to try to get some alignment with the McKinsey work.

Attached is an update presentation on the study from March.

Let me know if you want further materials. We are expecting to get a draft final in January.

Steve McInall. P.E.
Vice President, Energy and Water Planning
Direct: (904) 665-4309
Mobile: (904) 312-0739

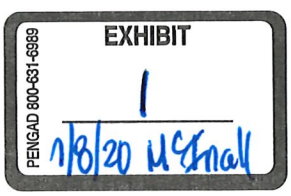
From: Gillespie, Jeanie M.
Sent: Friday, December 20, 2019 9:06 AM
To: McInall, Steven G. - VP & Chief Energy & Water Planning
Cc: Hutchinson, Jasen C. - Mgr Corporate Records Compliance
Subject: FW: JEA IRP
Importance: High

Good morning Steve,

Can you please send me the new IRP as requested by OGC below. Last we discussed, you advised it is not complete, but they would like the draft if still not complete. Thanks so much!

Jeanie Gillespie
Public Records Compliance Specialist
Direct: (904) 665-7309

From: Hutchinson, Jasen C. - Mgr Corporate Records Compliance <hutcjc@jea.com>
Sent: Friday, December 20, 2019 9:02 AM
To: Gillespie, Jeanie M. <gilljm2@jea.com>



Subject: FW: JEA IRP
Importance: High

Can you help with this one? Thanks!

Jasen

From: Powell, Stephen <SPowell@coj.net>
Sent: Friday, December 20, 2019 8:53 AM
To: Hutchinson, Jasen C. - Mgr Corporate Records Compliance <hutcjc@jea.com>
Cc: Granat, Sean <SGranat@coj.net>; Garrett, Christopher <GarrettC@coj.net>; Teodorescu, Adina <Teodores@coj.net>; Phillips, Jon <JPhillips@coj.net>; Harrell, Sonya <SonyaH@coj.net>
Subject: JEA IRP
Importance: High

Jasen,

We have been made aware of the existence of a document in progress since 2018 called an "Integrated Resource Plan." We're informed that it should have reached, at least, draft form by the summer of 2019. I believe this is a 40-year plan, but not sure.

Can you assist us in locating this document in its current form (including all prior drafts)?

Thank you,
Steve

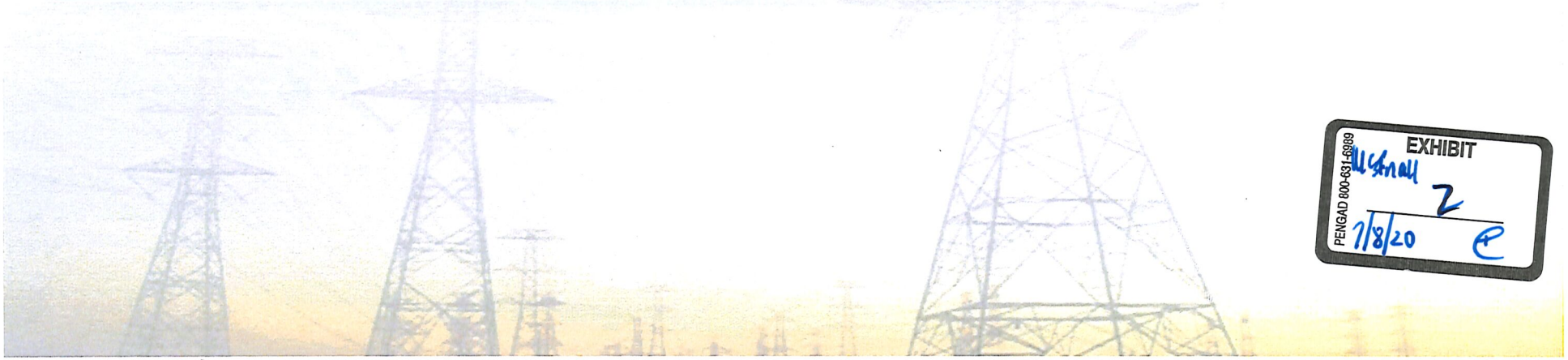
Stephen J. Powell
Chief, Tort & Employment Litigation
Office of General Counsel
City of Jacksonville
117 West Duval Street, Suite 480
Jacksonville, FL 32202
904-255-5071
904-255-5120 (facsimile)
SPowell@coj.net

Preliminary Results – Subject to Change

nFRONT CONSULTING LLC
Power Industry Planners • Analysts • Advisors

JEA Electric System Integrated Resource Plan (IRP)

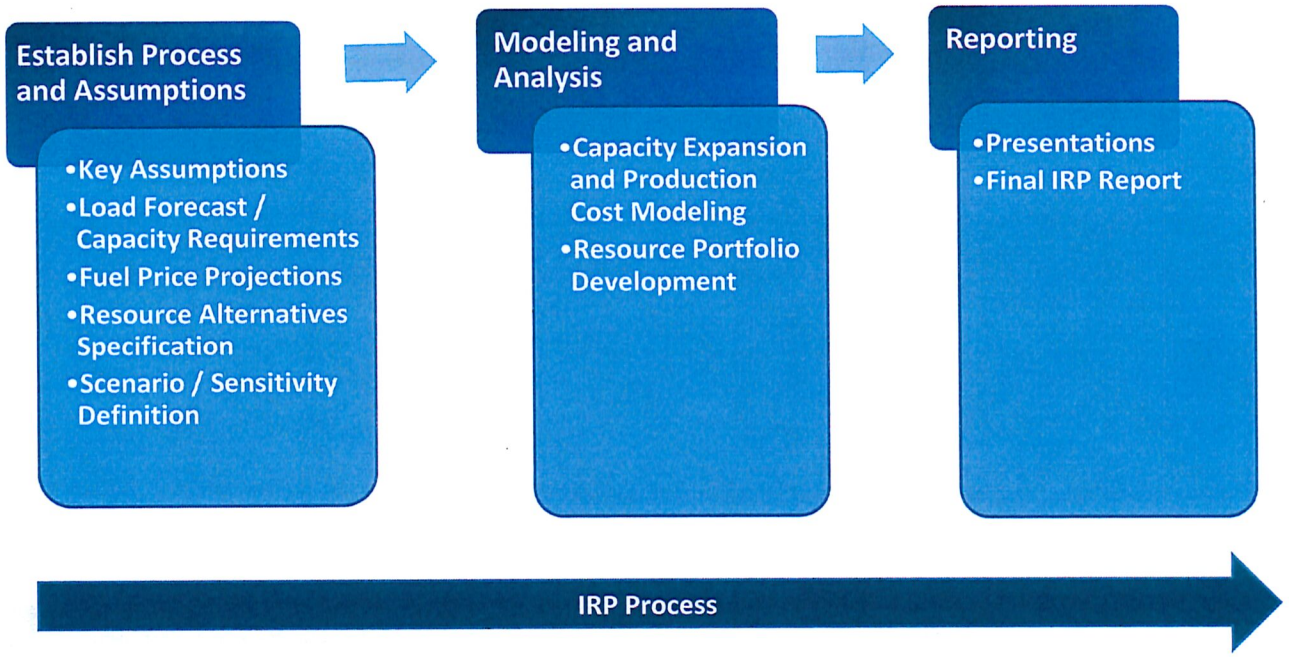
March 21, 2019



Introduction

- Brad Kushner, Executive Consultant, nFront Consulting LLC
  - Prior to nFront, Director of Electric System Resource Planning Services offering for Black & Veatch Management Consulting
  - Provided electric system resource planning services to JEA while with Black & Veatch since early 2000s, including:
    - 2011-2012 JEA Integrated Resource Plan
    - 2004, 2009, 2014, and current Florida Energy Efficiency Conservation Act ("FEECA")

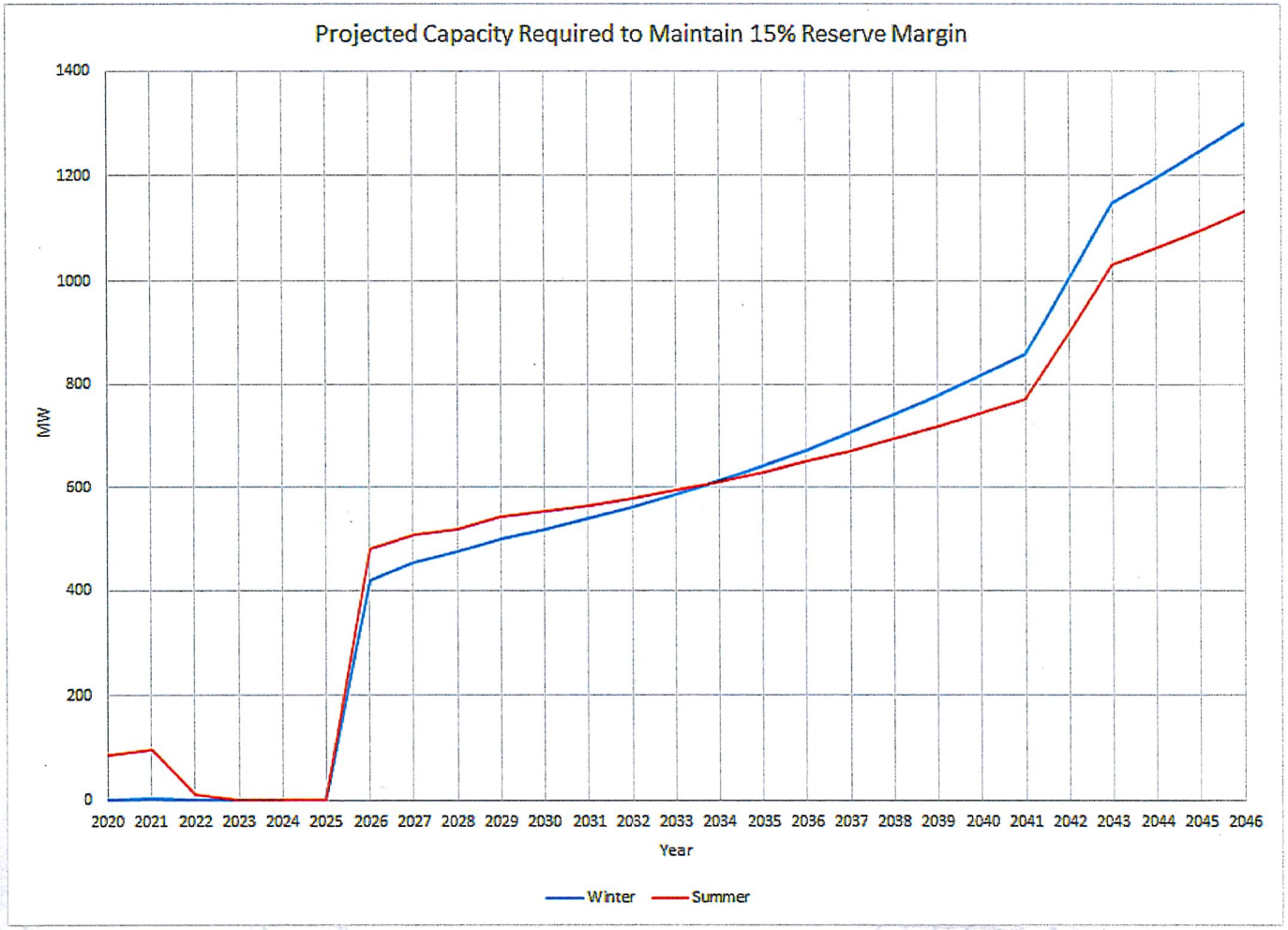
IRP Process



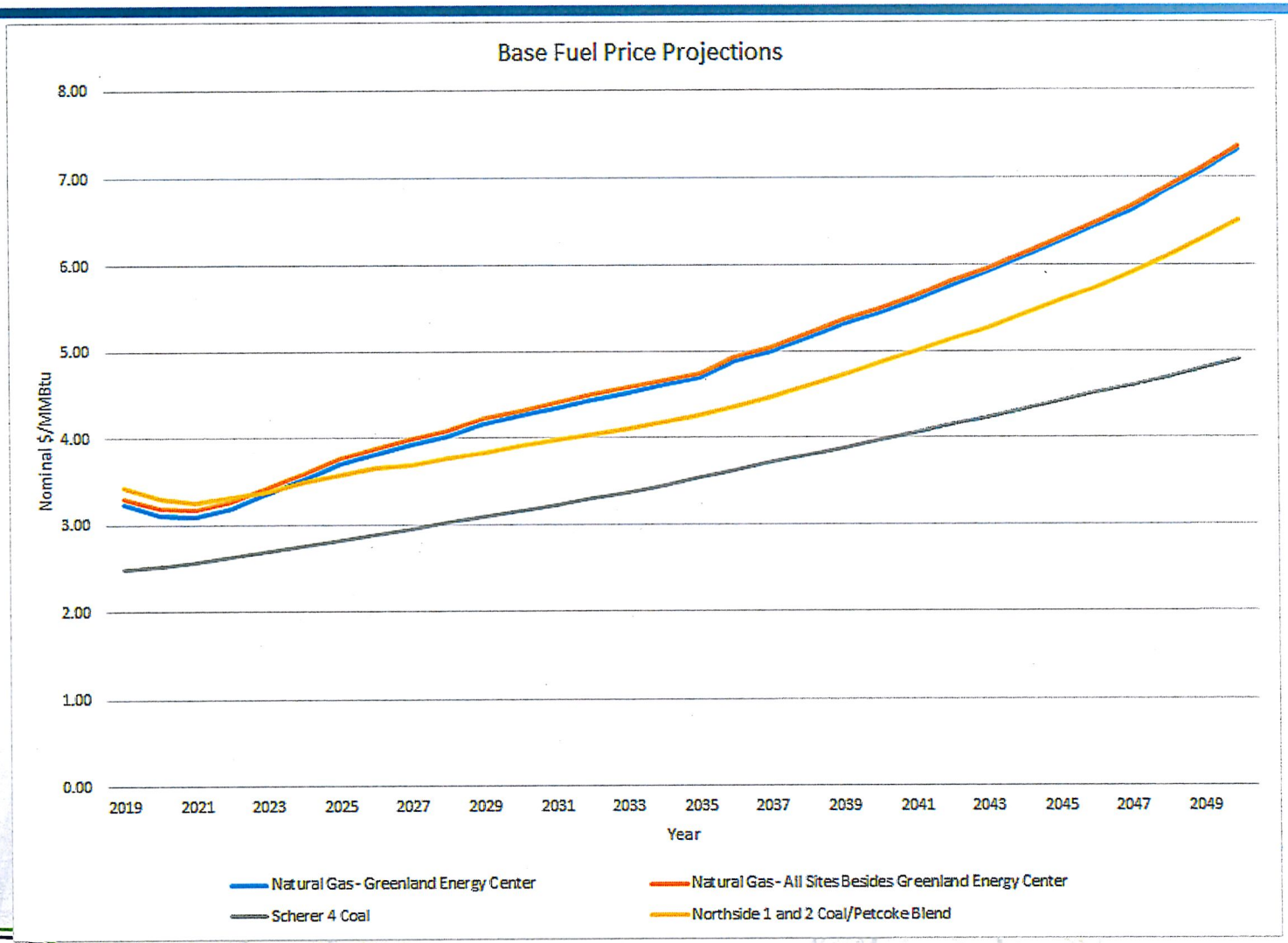
- Development of IRP is a complex process
- Intend to use base IRP expansion plan in current FEECA process
  - FEECA is undertaken every 5 years, and establishes JEA's numeric conservation goals that are approved by the Florida Public Service Commission

Baseline Assumptions

Projected Capacity Requirements



Fuel Price Projections



Supply-Side Options (following LCOE Screening – see subsequent slides)

	Utility Scale Solar PV		Combined Cycles				Reciprocating Engines	Simple Cycle Combustion Turbines		
	Solar PV w/o Storage (Note 1)	Solar PV w/ 4 Hours Storage (Notes 1, 2)	GE 7HA.02 1x1	GE 7FA.05 1x1	Greenland Energy Center 1x1 CC Conversion (Note 3)	Greenland Energy Center 2x1 CC Conversion (Note 3)	Jenbacher 5xJ920	GE LMS100	GE 7FA.05 SCCT	GE 7HA.02 SCCT
Installed Cost ($/kW based on full load average ambient output shown below)										
Capital Cost per kW (2018 $)	723	1,503	893	1,183	1,781	1,594	1,434	1,068	476	485
Average Day Ratings										
Capacity (MW)	75	75	545	350	310	622	45	109	223	342
Heat Rate (HHV, Btu/kWh)	N/A	N/A	6,519	6,843	6,935	6,905	7,962	8,581	9,675	9,079
Summer Ratings										
Capacity (MW)	75	75	508	325	290	582	45	90	207	314
Heat Rate (HHV, Btu/kWh)	N/A	N/A	6,535	6,832	7,021	6,990	7,967	8,897	9,774	9,206
Winter Ratings										
Capacity (MW)	0 (at Winter Peak)	75	559	349	321	644	45	113	232	352
Heat Rate (HHV, Btu/kWh)	N/A	N/A	6,592	6,938	6,977	6,947	7,962	8,472	9,489	8,934
Variable O&M (2018 $/MWh)	0	0	2.26	2.67	2.72	2.64	9.59	4.16	14.92	17.41
Fixed O&M (2018 $/kW-year)	12.00	20.48	6.95	9.90	10.94	6.58	42.11	12.27	8.00	5.64

Notes:

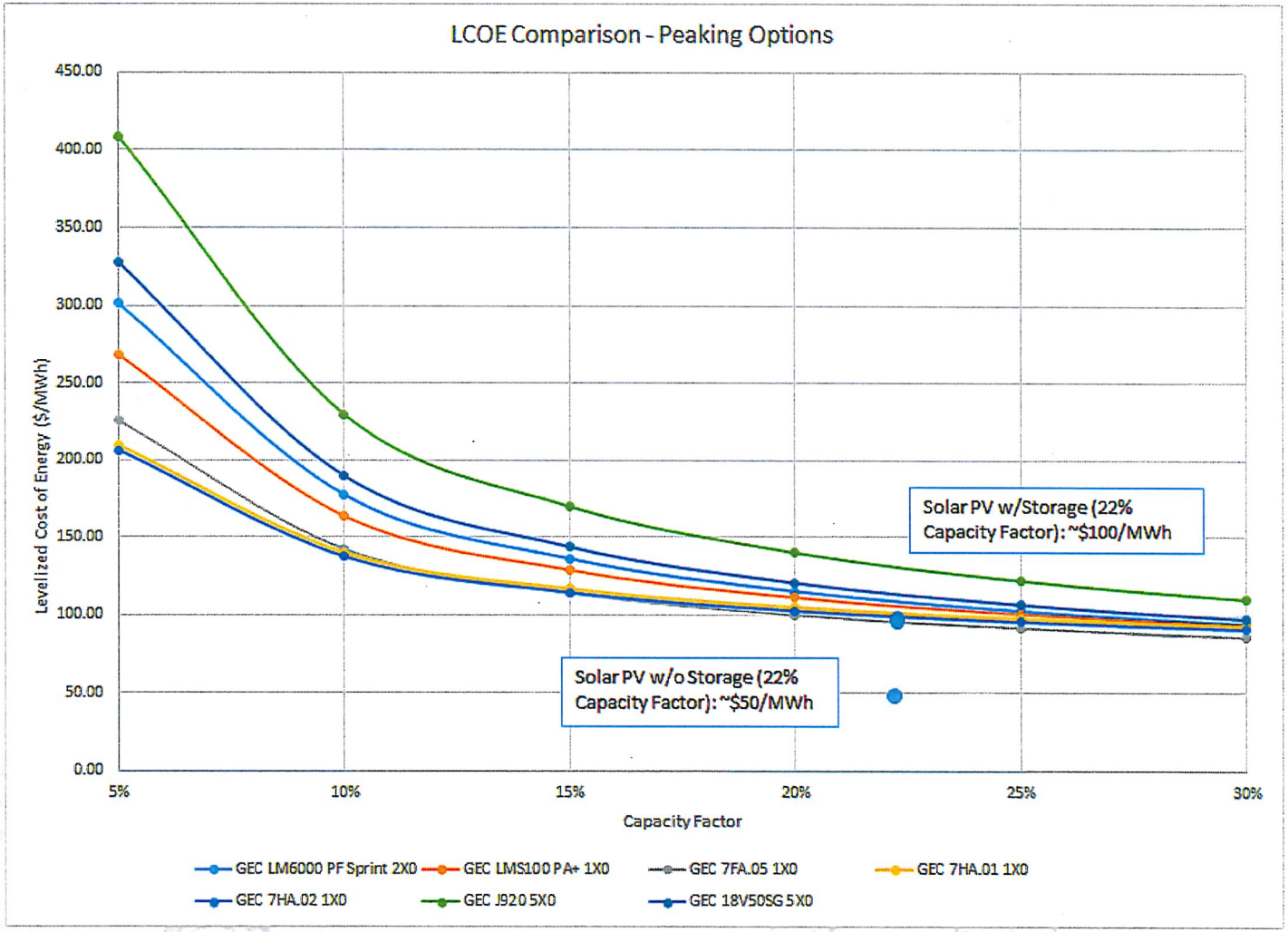
(1). Capital Cost per kW for Solar PV w/o Storage and Solar PV with Storage do not reflect projected decline in costs; assumed to be 6% annually for 5 years. 30% Investment Tax Credit is not reflected but is accounted for in economic analyses.

(2). Solar PV w/Storage does not include costs for battery capacity refreshes, which may be required over time to maintain storage capability.

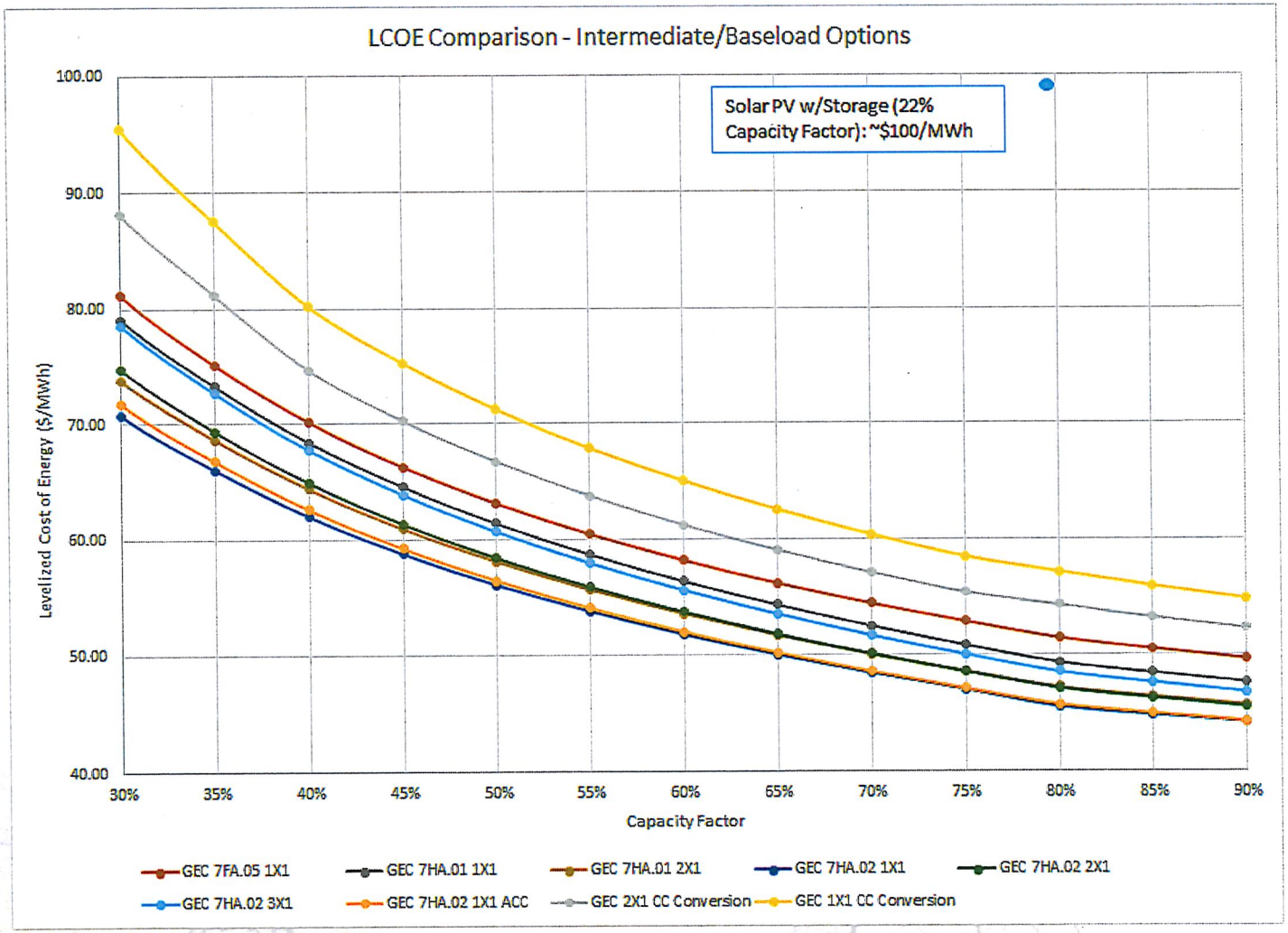
(3). Capital Cost per kW for Greenland Energy Center Combined Cycle Conversions reflect incremental capacity associated with conversions; Capacity and O&M shown reflect entire capacity of converted GEC Combined Cycles

Levelized Cost of Energy and Expansion Planning/Production Cost Modeling

LCOE – Peaking Options



LCOE – Intermediate/Baseload Options



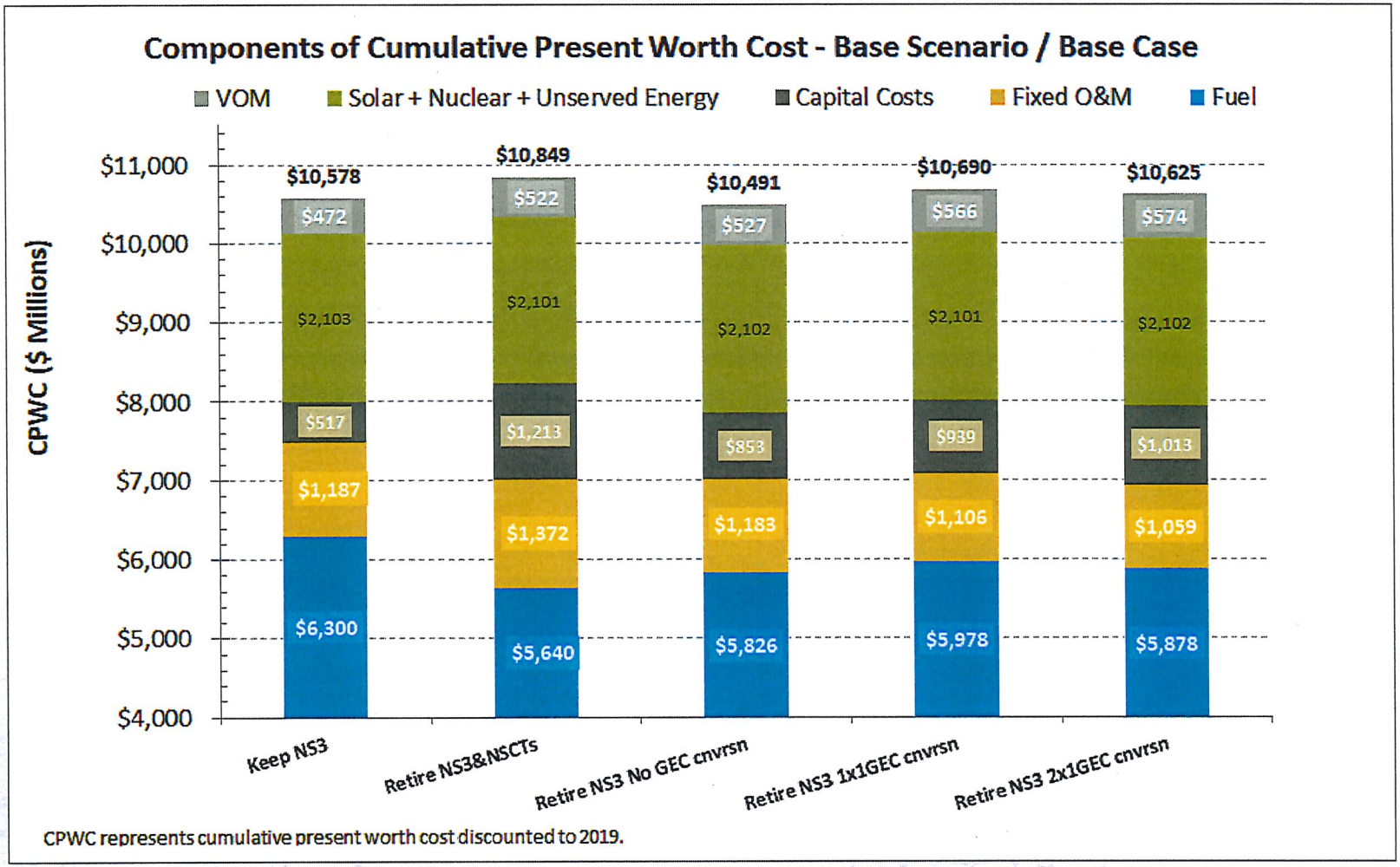
Scenarios and Sensitivities

Scenario Matrix

Area	Metric	Baseline	Load Erosion	Increased Electrfication	Green Economy
Financial	Interest During Construction & Discount Rate	4.50%	6%	4.50%	4.50%
	Escalation Rate	2.00%	3.00%	2.00%	2.00%
Demand	Total Net Energy Requirements Forecast	AAGR: 0.87%	Energy requirements decline by 1.0% /year for 10 years; then no growth	Energy requirements increase at 2.0%/year until achieve +20% over Baseline forecast; then Baseline AAGR of 0.87% thereafter {See Comment}	AAGR: 0.89%
	Net Firm Peak Demand Forecast	AAGR Winter: 0.86% AAGR Summer: 0.70%	Winter and Summer net firm peak demand declines at 1.0% for 10 years; then no growth	Winter and Summer net firm peak demand increase at 2.0%/year until achieve +20% over Baseline forecast; Baseline Winter and Summer AAGR thereafter	AAGR Winter: 1.6% AAGR Summer: 1.6%
	EE/Conservation	Current Portfolio	Embedded in Energy Forecast	Embedded in Energy Forecast	Embedded in Energy Forecast
	Direct Load Control	None	None	None	None
	Interruptible Load	Current Portfolio	Embedded in Peak Demand Forecast	Embedded in Peak Demand Forecast	Embedded in Peak Demand Forecast
	PEV	0.5% by 2027 3.6% by 2046	Embedded in Energy and Peak Demand Forecasts	Embedded in Energy and Peak Demand Forecasts	Embedded in Energy and Peak Demand Forecasts
	Net Metering	Current Portfolio	Embedded in Energy and Peak Demand Forecasts	Embedded in Energy and Peak Demand Forecasts	Embedded in Energy and Peak Demand Forecasts
Environmental Regulations	Carbon Tax Rate	None	None	None	~ $11.50/ton in 2020, increasing at 5% annually
	Clean Energy Standard (CES)	None	None	None	Reflect 30% carbon neutral by 2030
Supply	Fuel Cost & Availability	Gas supply remains adequate with moderate pricing	Gas supply remains adequate with moderate pricing	Gas supply remains adequate with moderate pricing	Gas supply inadequate with high pricing
	Construction Cost	Costs increase at inflation	Costs increase at inflation	Costs increase at inflation	Costs increase at inflation through 2020, inflation + 1% thereafter
	Unit Retirements	Northside 3: 2025; Solid Fuel: none expected	Northside 3: 2025; Solid Fuel: none expected	Northside 3: 2025; Solid Fuel: none expected	Northside 3: 2025; Solid Fuel: 2030

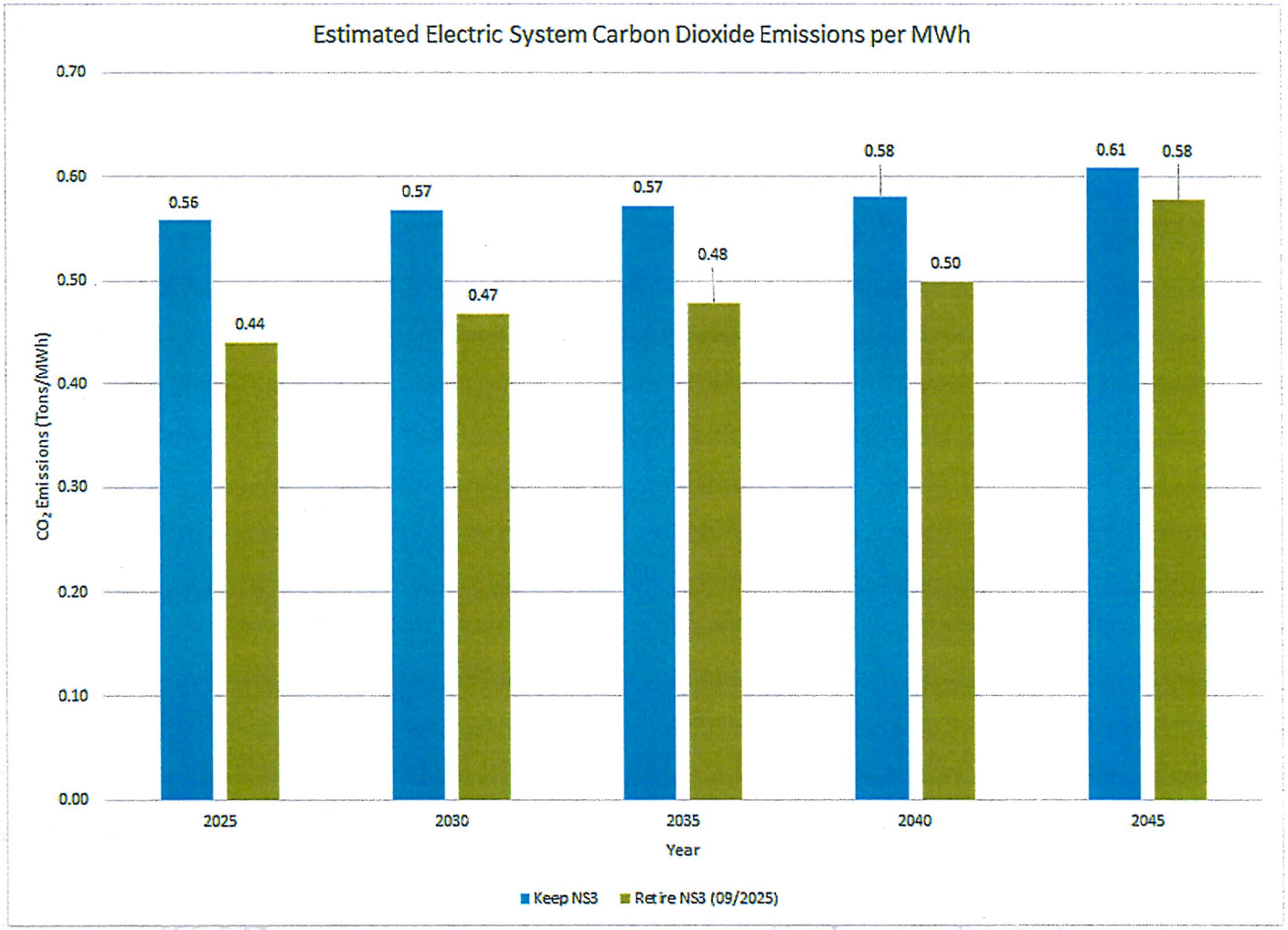
Analysis – Baseline Scenario

CPWC Components – Baseline Analysis



CPWC represents cumulative present worth cost discounted to 2019.

Estimated Carbon Dioxide Emissions per MWh – Baseline Analysis

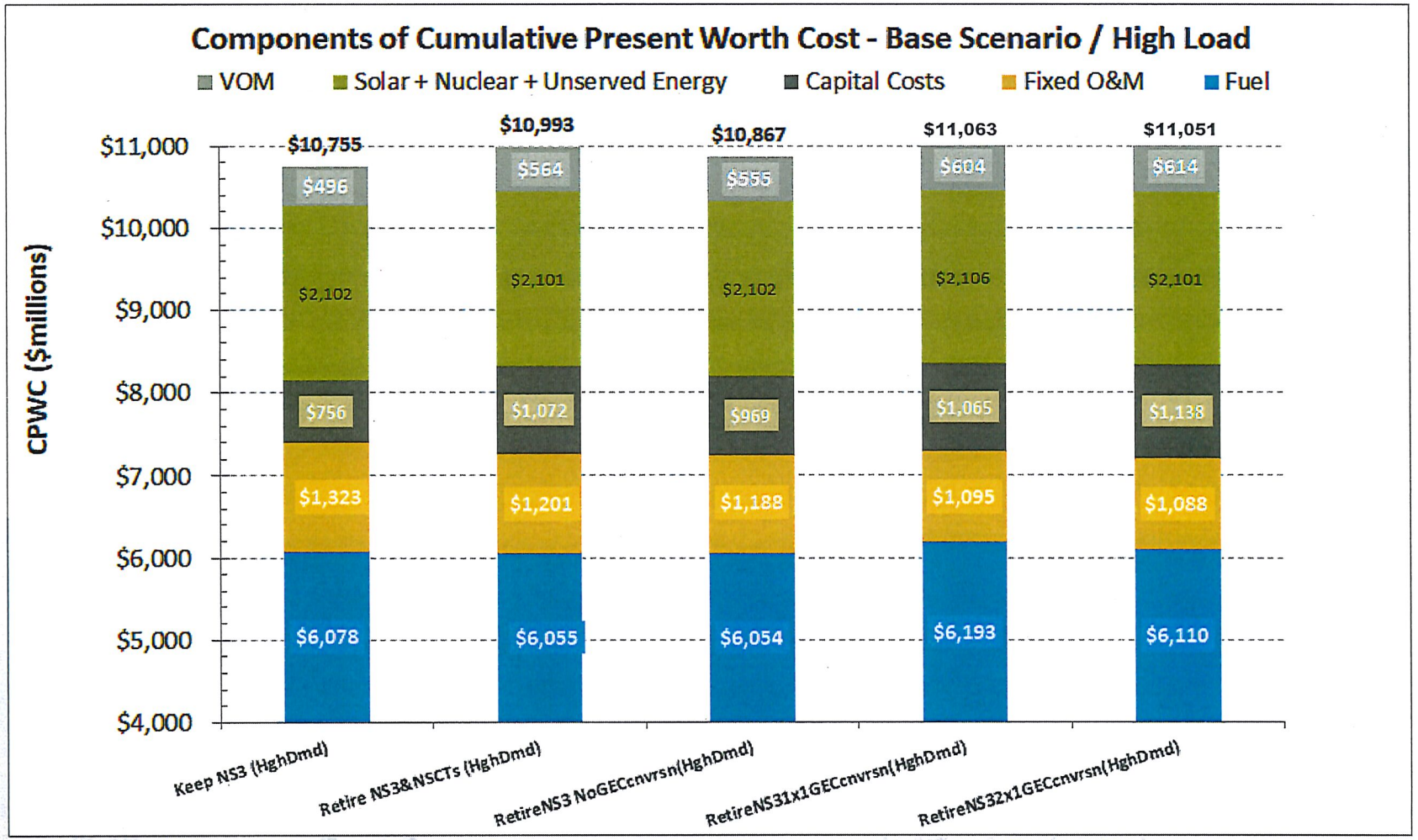


Observations from Expansion Planning and Production Cost Modeling – Baseline Analysis

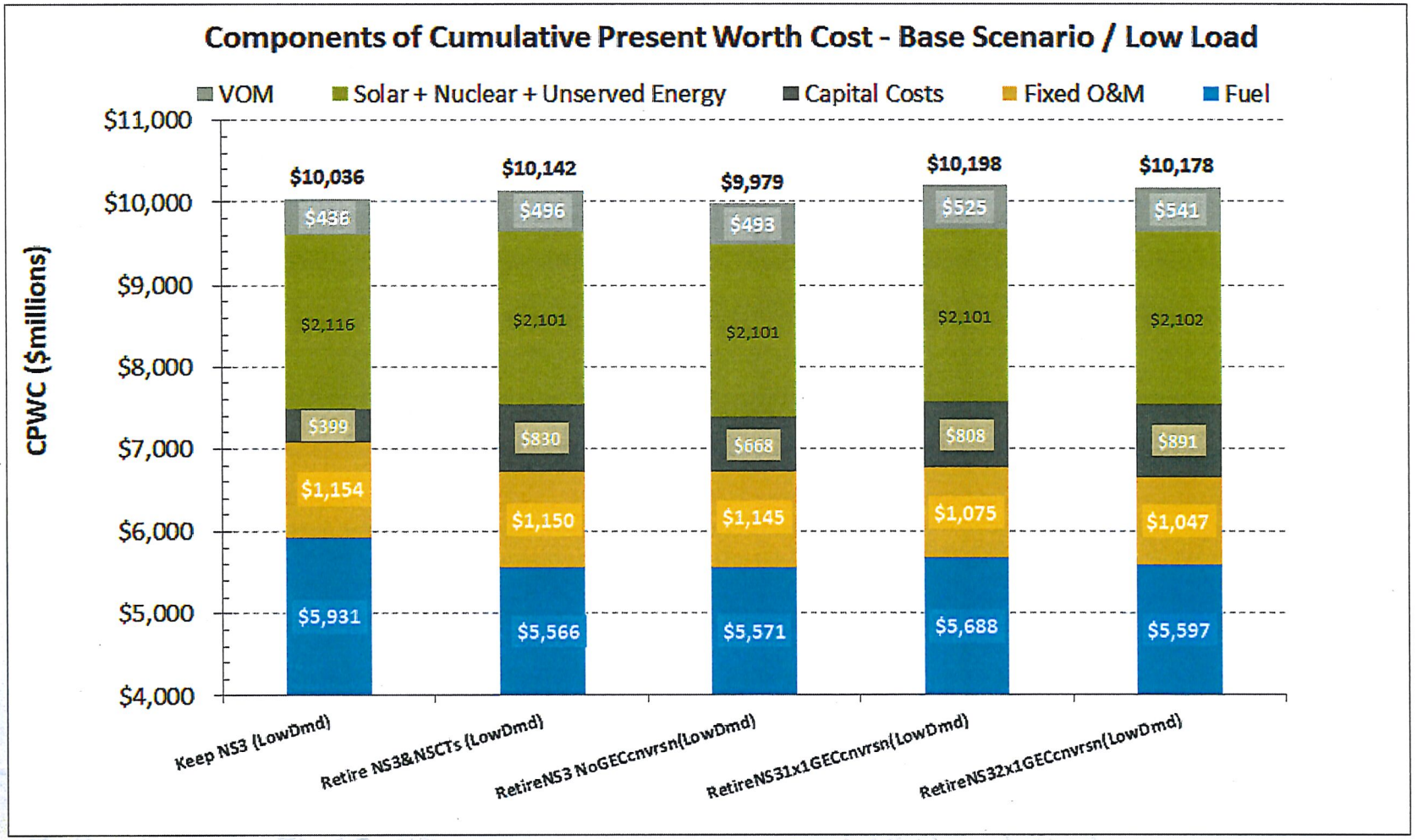
- Preliminary Results of Base Case/Baseline Scenario:
  - CPWC of case that includes retirement of Northside 3 (9/2025) and new 1x1 7HA.02 combined cycle in 2025 is least cost, but other cases are very close
    - CPWC of case with continued operation of Northside 3 (9/2025) is within 1% of CPWC of least cost case
    - CPWC of case with conversion of the existing simple cycle combustion turbines at Greenland Energy Center to combined cycle ("2x1 GEC CC Conversion") in 2025 is ~1.3% higher than least cost case
    - CPWC of case with conversion of one of the existing simple cycle combustion turbines at Greenland Energy Center to combined cycle ("1x1 GEC CC Conversion") in 2025 is ~1.9% higher than least cost case
    - CPWC of case with retirement of Northside 3 and Northside simple cycle CTs is ~3.4% higher than least cost case

Analysis - Sensitivities and Scenarios

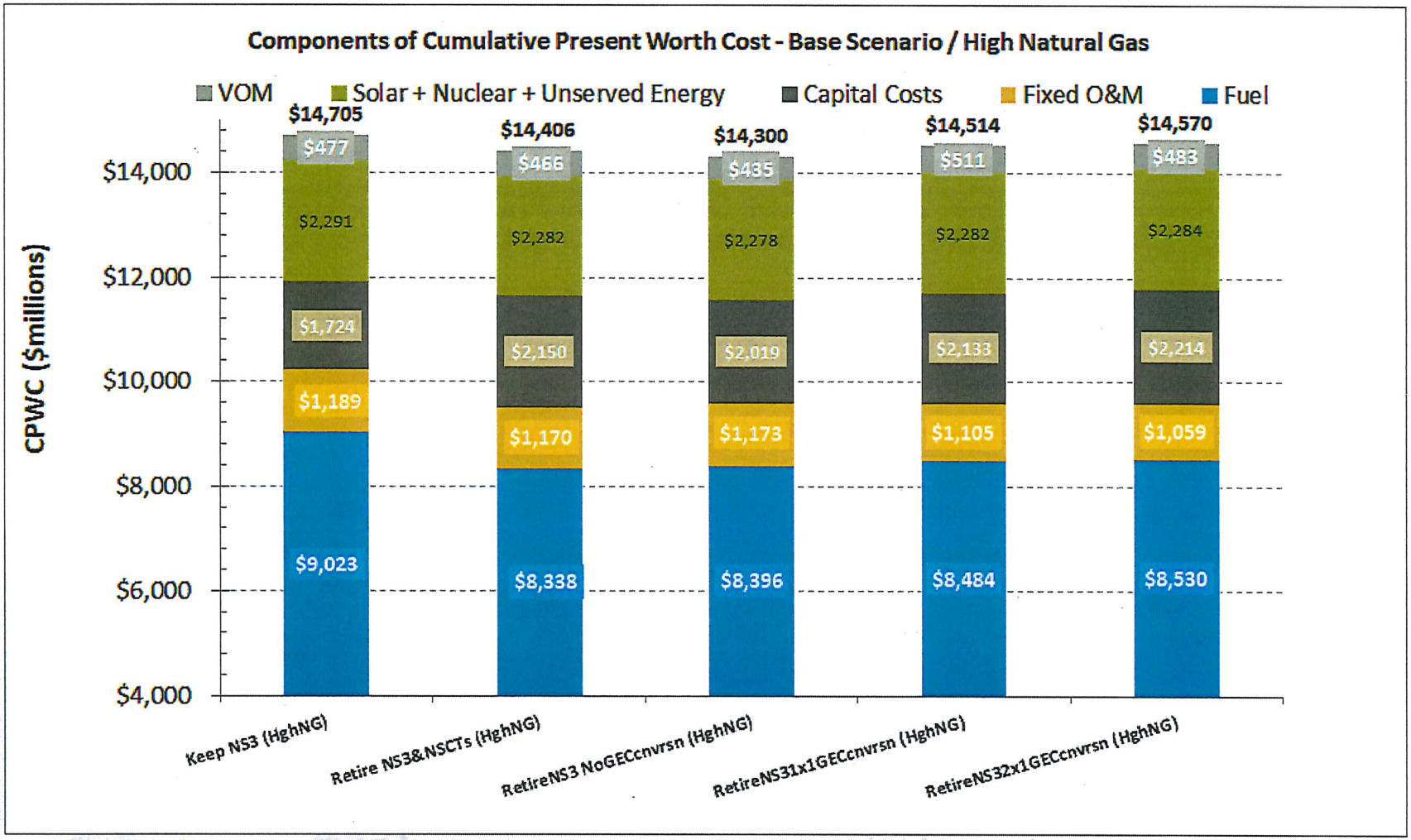
Results of Expansion Planning and Production Cost Modeling – Baseline Scenario/High Load Sensitivity



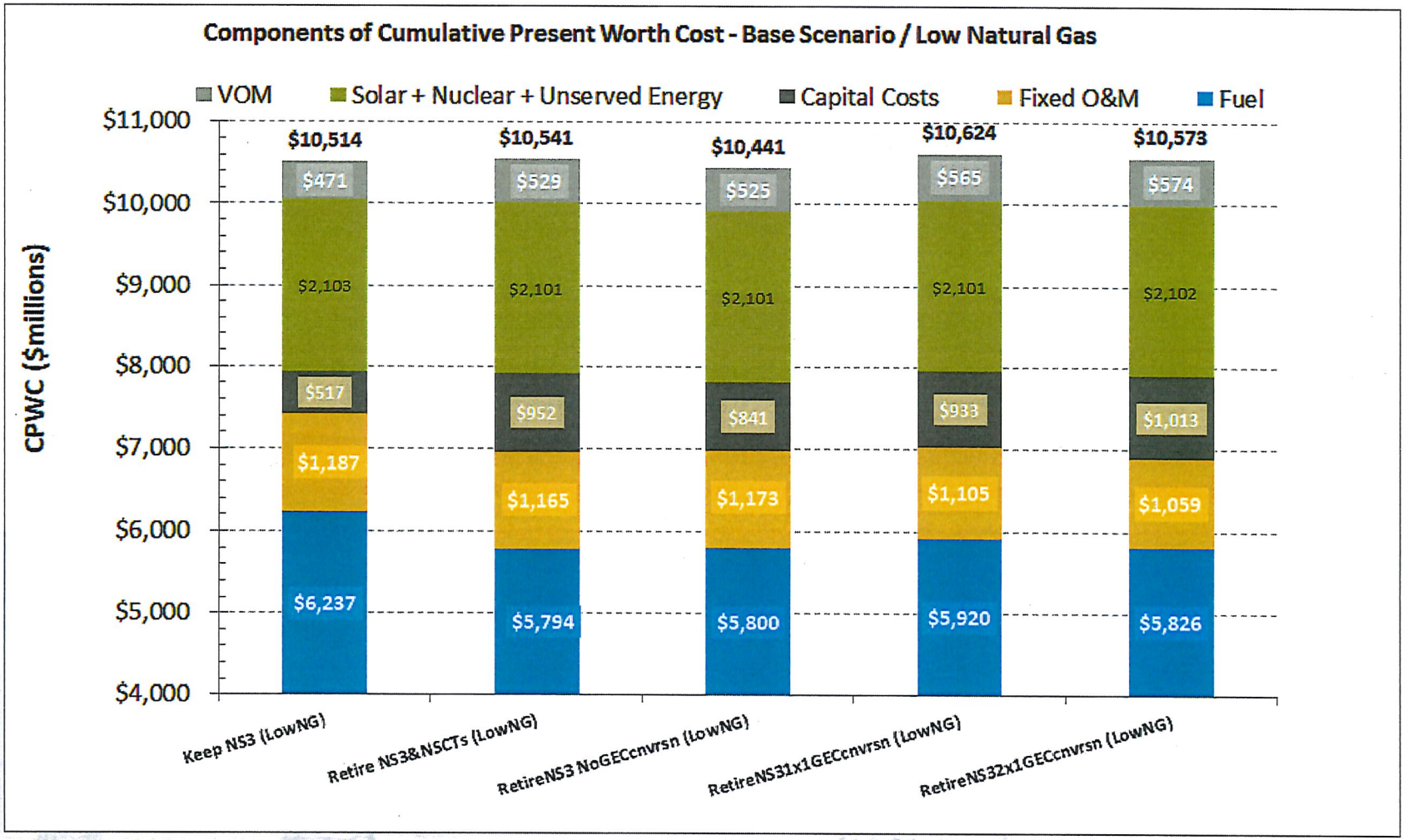
Results of Expansion Planning and Production Cost Modeling – Baseline Scenario/Low Load Sensitivity



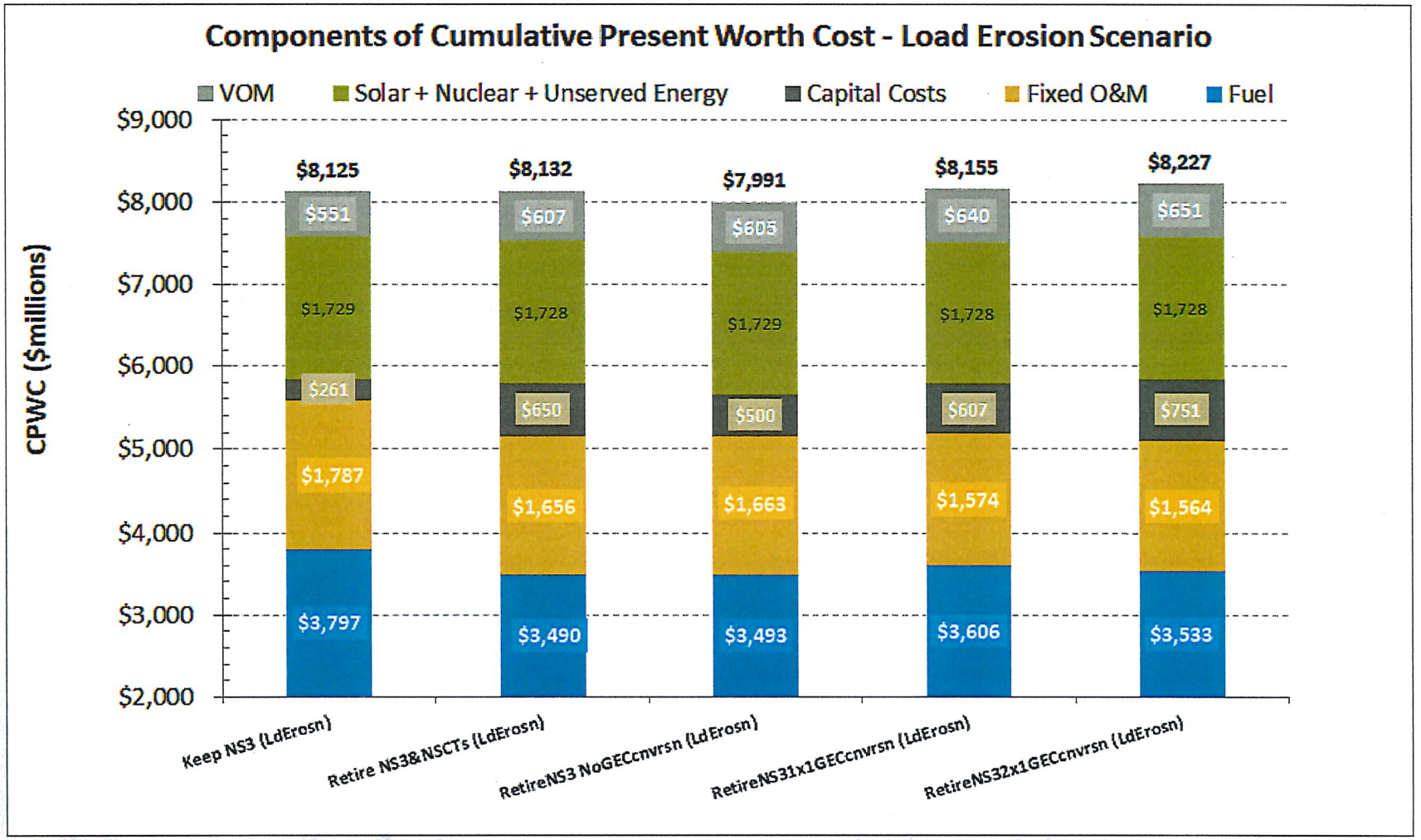
Results of Expansion Planning and Production Cost Modeling – Baseline Scenario/High Natural Gas Sensitivity



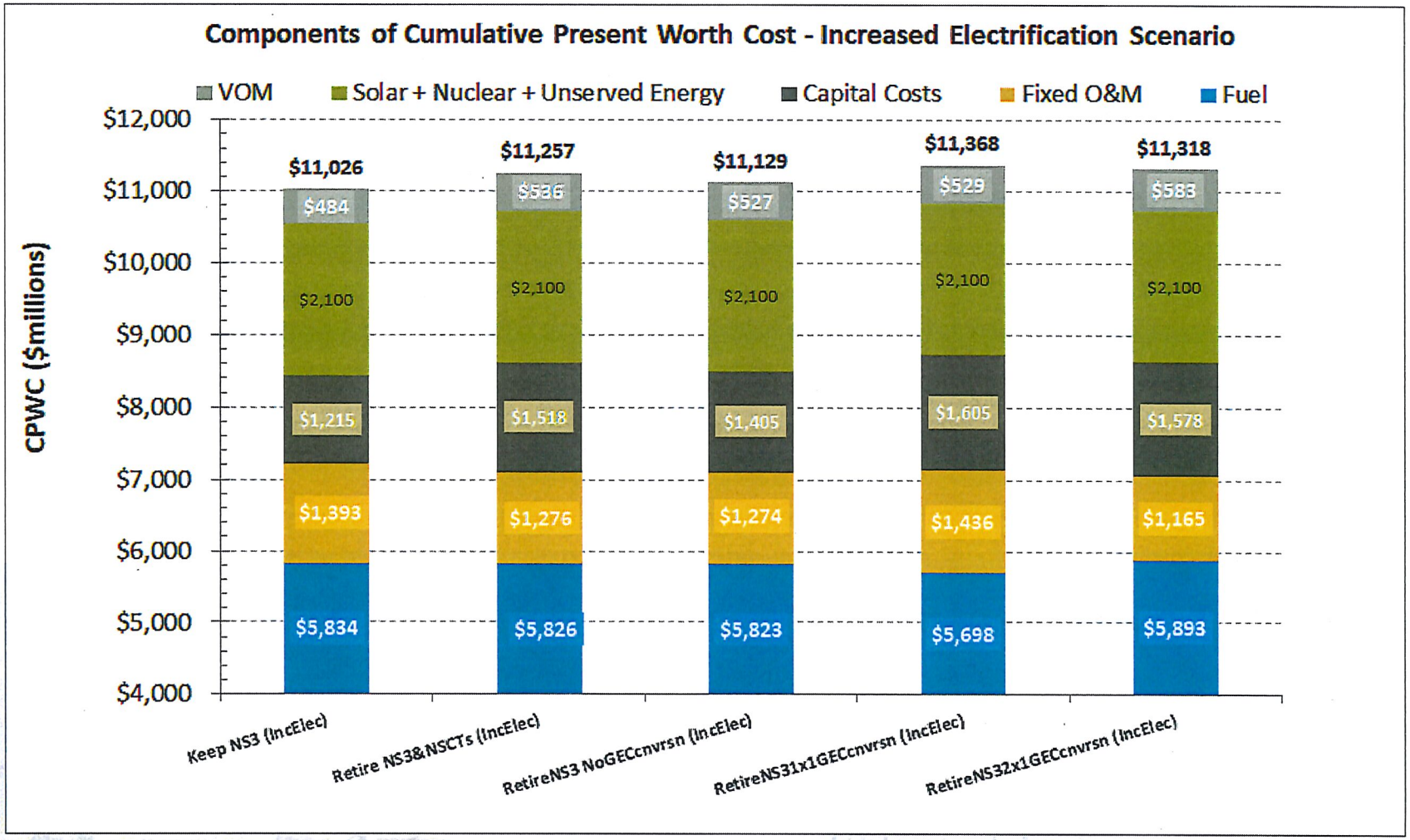
Results of Expansion Planning and Production Cost Modeling – Baseline Scenario/Low Natural Gas Sensitivity



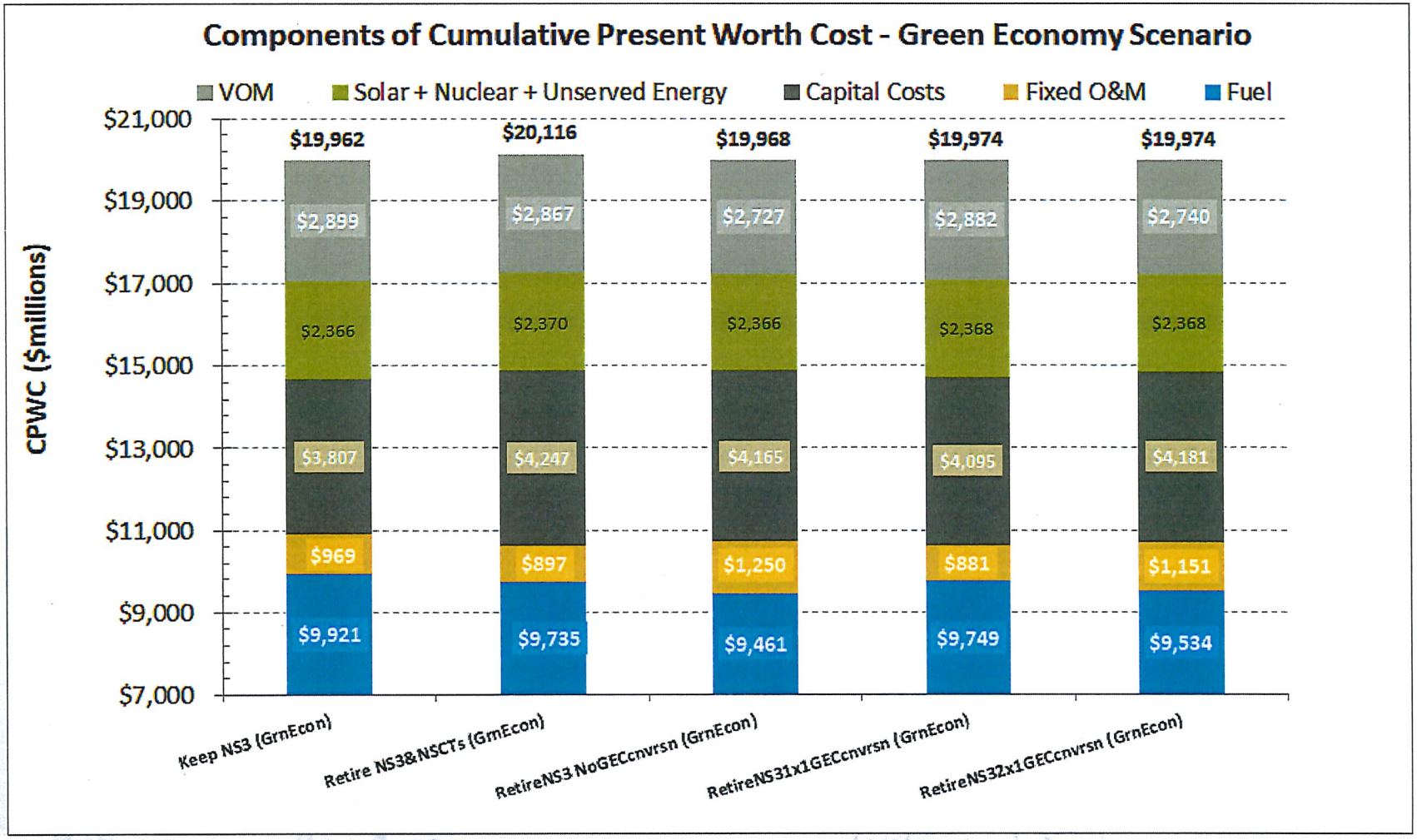
Results of Expansion Planning and Production Cost Modeling – Load Erosion Scenario



Results of Expansion Planning and Production Cost Modeling – Increased Electrification Scenario



Results of Expansion Planning and Production Cost Modeling – Green Economy Scenario



Observations and Next Steps

Overall Observations from Expansion Planning and Production Cost Modeling

- In general, CPWCs of expansion plans are close to one another
  - When comparing plans including continued operation of Northside 3, retirement of Northside 3 (9/2025), and GEC combined cycle conversion:
    - Comparison of CPWCs within each scenario/sensitivity are within ~ 1% to 3% of one another
    - CPWCs are often less than 1% different between expansion plans
    - Plans with retirement of Northside 3 (9/2025) and new combined cycle in 2025 are generally lowest in CPWC; differentials in CPWC are small
- Other considerations beyond CPWC related to Northside 3 retirement and construction of new combined cycle:
  - Condition Assessment
  - Regulations beyond 316(b)
  - Reliability
  - Safety
  - Capital Investment
  - Efficiency
  - Operational Flexibility

Next Steps

- Finalize IRP
- Northside 3 retirement decision
- If move forward with combined cycle (i.e. GEC 1x1 combined cycle or 2x1 combined cycle conversion or new combined cycle):
  - Consider issuing Request for Proposals (RFP) to compare to selected alternative (i.e. GEC CC conversion or new 1x1 combined cycle)
  - New or expansion of existing power plant with 75 MW or more of steam capacity falls under PPSA (see next slide)
  - Other environmental permitting required

PPSA Considerations

- Statutory Criteria and Relevant Considerations:
  - Need for electric system reliability and integrity
    - How does addition of proposed unit help to improve reliability and integrity – for example, can transmission system benefits be quantified
  - Need for adequate electricity at a reasonable cost
    - Is there a "need" for the proposed unit – for example, to maintain reserve margin
  - Need for fuel diversity and supply reliability
    - Would need to demonstrate reliable supply of fuel for proposed unit
  - Whether the proposed plant is the most cost-effective alternative available
    - Consider power supply request for proposals (RFP) to demonstrate cost-effectiveness
  - Whether renewable energy sources and technologies, as well as conservation measures, are utilized to the extent reasonably available
  - Consideration of the conservation measures taken by or reasonably available to the applicant or its members which might mitigate the need for the proposed plant

Reference Material

Levelized Cost of Energy and Expansion Planning/Production Cost Modeling

Levelized Cost of Energy (LCOE)

- The LCOE analysis was developed based on the estimated cost and performance characteristics for the various alternatives
- LCOE provides a single, levelized cost per MWh (or kWh) lifecycle operating cost estimate for each of the supply-side options
- The LCOE analysis was performed at various assumed levels of annual operation (i.e. capacity factor, or amount of energy generated each year) for each supply-side option
- The LCOE analysis considered (as appropriate for each supply-side option) capital costs, operating costs, and fuel costs and expressed the total annual cost and corresponding energy generation on a nominal (current year) and present value basis

Levelized Cost of Energy (LCOE)

- The cumulative present value costs were then divided by the sum of the annual present worth factors to calculate the lifecycle levelized cost of energy for each option
- Such an approach is widely used in comparing the relative economics of various supply-side options to determine if one (or more) option may be consistently more costly than the others across a range of possible capacity factors, allowing an initial list of supply-side options to be reduced to a smaller number to be considered in subsequent evaluations

Expansion Planning and Production Cost Modeling

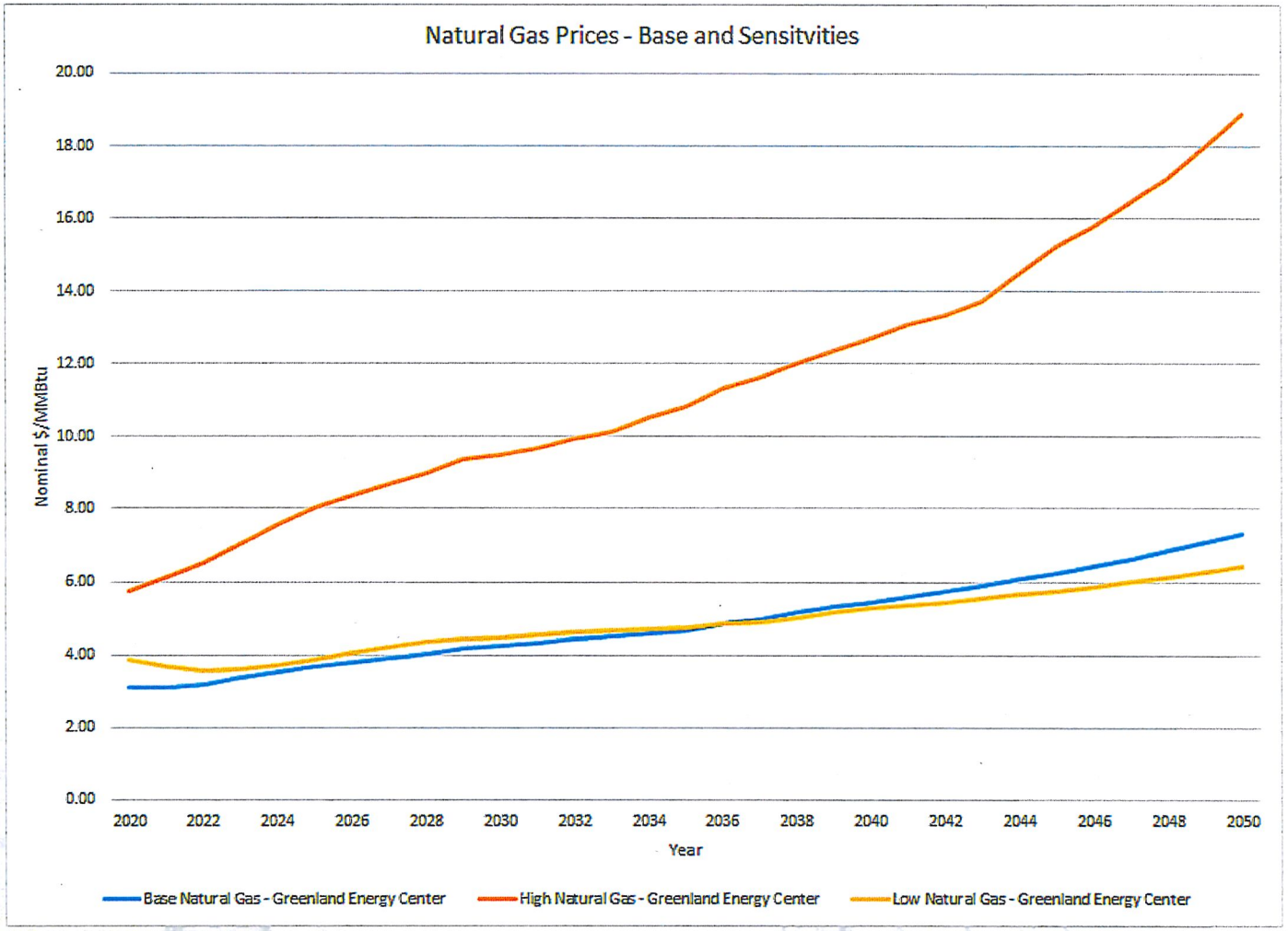
- Expansion planning and production cost modeling was performed to evaluate various resource plans under numerous sensitivities/scenarios
- Used Strategist™ and ProMod™, industry-accepted expansion planning and production cost models licensed by ABB (formerly Ventyx)
- Analyzed cumulative present worth costs (CPWCs), which represent the present value of JEA's system costs over the study period, including variable and fixed O&M costs, capital costs for new unit additions, costs for nuclear and solar purchases, fuel costs, and CO2 emissions costs (for evaluations in which emissions of CO2 are assumed to be regulated)
- Results are presented in subsequent slides

Scenarios and Sensitivities

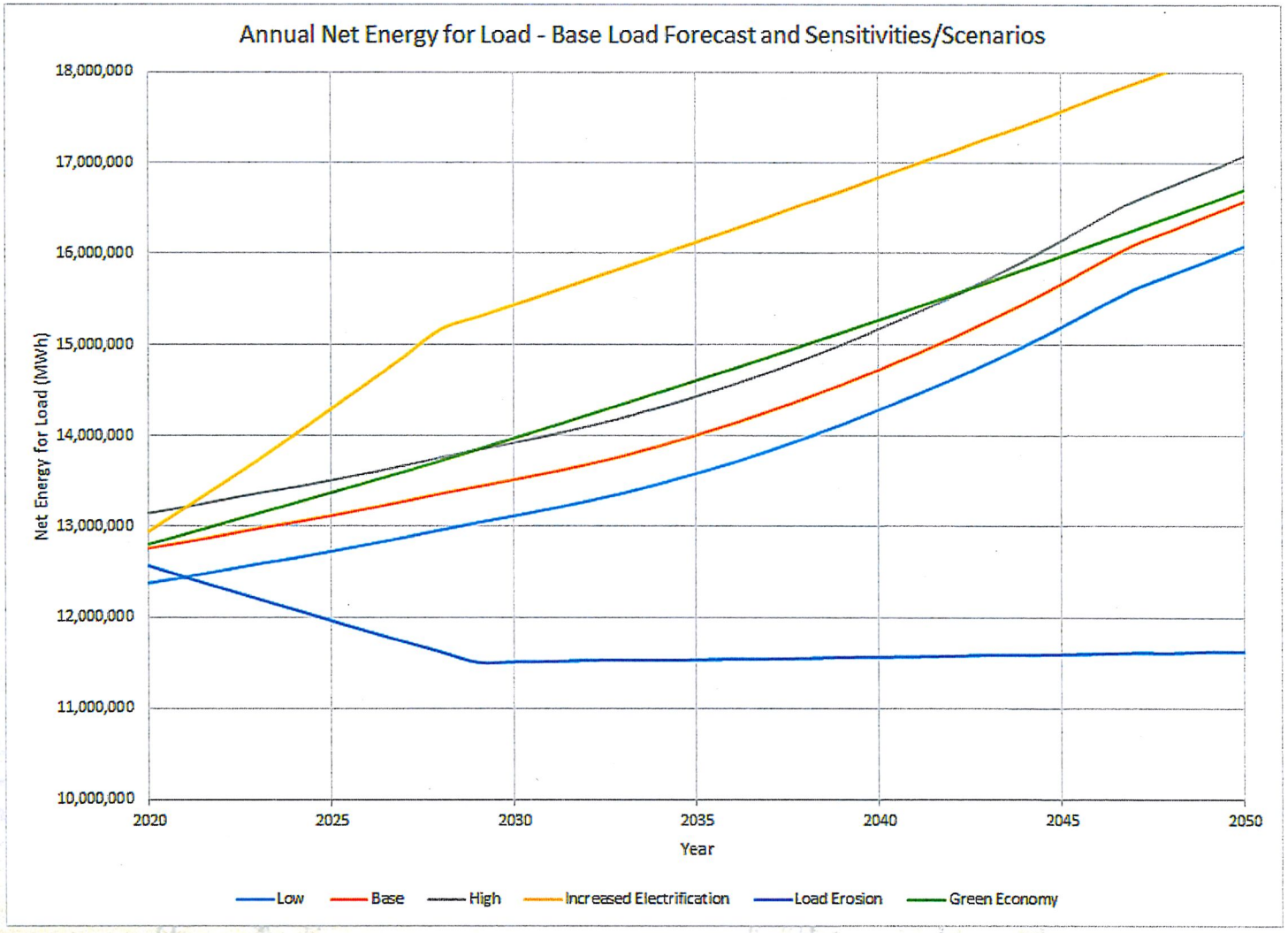
Scenarios and Sensitivities

- Baseline Scenario:
  - Retirement of Northside 3 in 9/2025
  - No carbon dioxide emissions regulations
  - No clean energy/renewable energy standards
  - Baseline load forecast, fuel price projections, capital costs for new construction
- Considerations and Sensitivities under Baseline Scenario:
  - No Northside 3 retirement (analyzed for all sensitivities)
  - Retirement of Northside simple cycles (analyzed for all sensitivities)
  - High and low load sensitivities
  - Natural gas price sensitivities
- Additional Scenarios:
  - Load Erosion
  - Increased Electrification
  - Green Economy

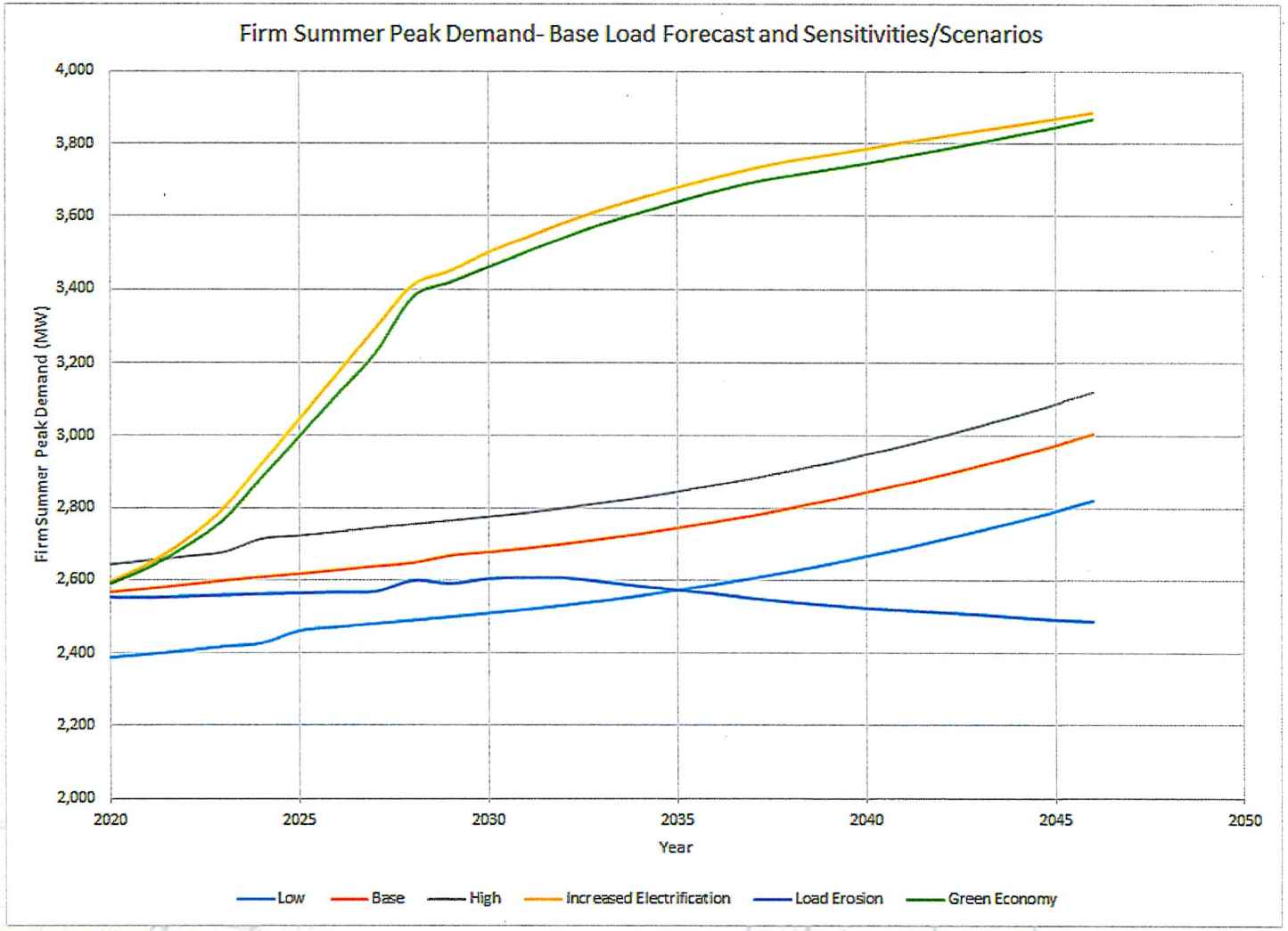
Natural Gas Price Sensitivities



Load Sensitivities and Scenarios



Load Sensitivities and Scenarios



Observations and Next Steps

Observations from Expansion Planning and Production Cost Modeling – Sensitivity and Scenario Analyses

- High Load Sensitivity
  - Least cost plan includes continued operation of Northside 3 and new 1x1 7HA.02 combined cycle in 2025
  - Plan with retirement of Northside 3 (9/2025) includes new 1x1 7HA.02 combined cycle in 2025; ~ 1% higher in CPWC than least cost plan
  - Plans with retirement of Northside 3 (9/2025) and either 1x1 GEC CC Conversion or 2x1 GEC CC Conversion are ~ 2.7% to 2.8% higher in CPWC than least cost plan
- Low Load Sensitivity
  - Least cost plan includes retirement of Northside 3 (9/2025) and new 1x1 7HA.02 combined cycle in 2025
  - Plan with continued operation of Northside 3 is ~ 0.6% higher in CPWC than least cost plan
  - Plans with retirement of Northside 3 (9/2025) and either 1x1 GEC CC Conversion or 2x1 GEC CC Conversion are ~ 2.0% to 2.2% higher in CPWC than least cost plan

Observations from Expansion Planning and Production Cost Modeling – Sensitivity and Scenario Analyses

- High Natural Gas Sensitivity
  - Least cost plan includes retirement of Northside 3 (9/2025) and new 1x1 7HA.02 combined cycle in 2025
  - Plan with continued operation of Northside 3 is ~ 2.8% higher in CPWC than least cost plan
  - Plans with retirement of Northside 3 (9/2025) and either 1x1 GEC CC Conversion or 2x1 GEC CC Conversion are ~ 1.5% to 1.9% higher in CPWC than least cost plan
- Low Natural Gas Sensitivity
  - Least cost plan includes retirement of Northside 3 (9/2025) and new 1x1 7HA.02 combined cycle in 2025
  - Plan with continued operation of Northside 3 is ~ 0.7% higher in CPWC than least cost plan
  - Plans with retirement of Northside 3 (9/2025) and either 1x1 GEC CC Conversion or 2x1 GEC CC Conversion are ~ 1.3% to 1.8% higher in CPWC than least cost plan

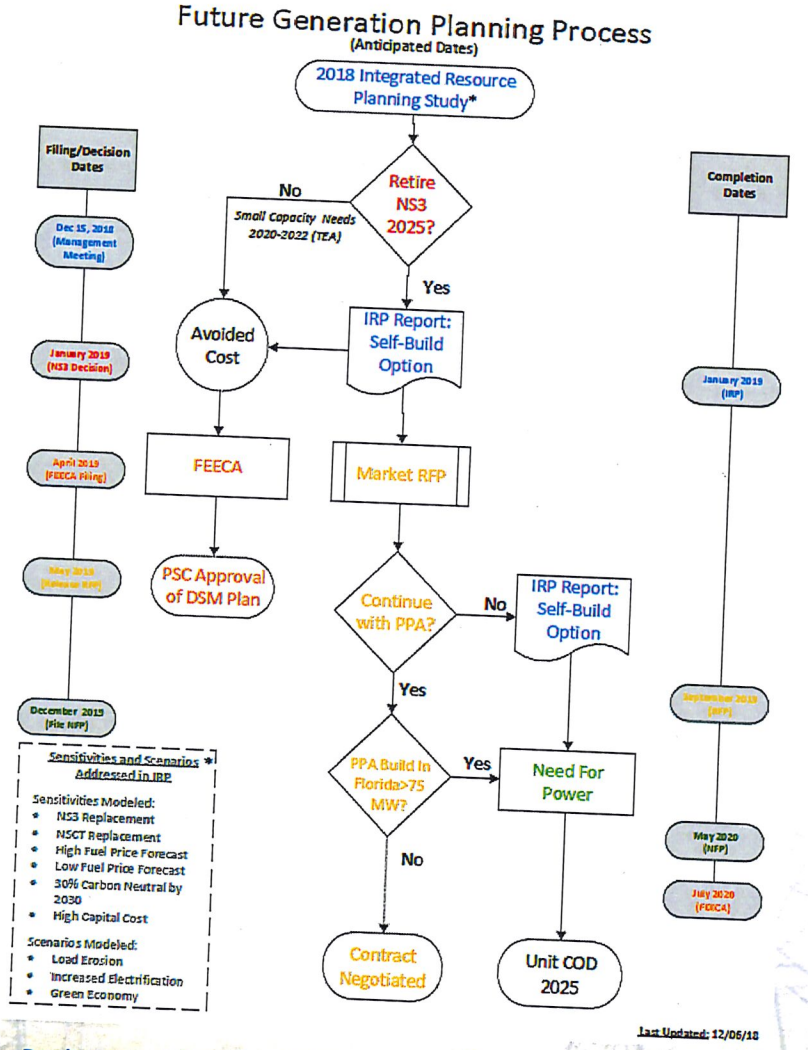
Observations from Expansion Planning and Production Cost Modeling – Sensitivity and Scenario Analyses

- Load Erosion Scenario
  - Least cost plan includes retirement of Northside 3 (9/2025) and new 1x1 7HA.02 combined cycle in 2026
  - Plan with continued operation of Northside 3 is ~ 1.7% higher in CPWC than least cost plan
  - Plans with retirement of Northside 3 (9/2025) and either 1x1 GEC CC Conversion or 2x1 GEC CC Conversion are ~ 2.1% to 3% higher in CPWC than least cost plan
- Increased Electrification Scenario
  - Least cost plan includes continued operation of Northside 3 and new 1x1 7HA.02 combined cycle in 2025
  - Plan with retirement of Northside 3 (9/2025) includes new 1x1 7HA.02 combined cycle in 2025; ~ 1% higher in CPWC than least cost plan
  - Plans with retirement of Northside 3 (9/2025) and either 1x1 GEC CC Conversion or 2x1 GEC CC Conversion are ~ 2.7% to 3.1% higher in CPWC than least cost plan

Observations from Expansion Planning and Production Cost Modeling – Sensitivity and Scenario Analyses

- Green Economy Scenario
  - Least cost plan includes continued operation of Northside 3 and GEC 1x1 combined cycle conversion in 2025
  - Plan with retirement of Northside 3 (9/2025) includes new 1x1 7HA.02 combined cycle in 2025; CPWC is essentially a "break-even" with least cost plan
  - Plans with retirement of Northside 3 (9/2025) and either 1x1 GEC CC Conversion or 2x1 GEC CC Conversion essentially "break-even" with least cost plan

Generation Planning Flow Chart



From: McInall, Steven G. - Dir, Electric Production Resource Planning <mcinsg@jea.com>
Sent: Monday, September 10, 2018 10:03 AM
To: Crawford, Juli E. - Manager - Financial Planning & Rates
Subject: FW: Electrification Presentation
Attachments: JEA-ICF Presentation to JEA Board - CSMD 9-10-2018.pptx

FYI. Good luck working this in with your "gloom and doom" presentation.

Steve McInall. P.E.
Director, Electric Production Resource Planning
Direct: (904) 665-4309
Mobile: (904) 312-0739

From: Nichols, Vicki D. - Dir Customer Solutions & Market Development
Sent: Monday, September 10, 2018 9:54 AM
To: McInall, Steven G. - Dir, Electric Production Resource Planning <mcinsg@jea.com>
Subject: Electrification Presentation

Steve,
I appreciate your helpful feedback on our EV presentation. We made some key additions and it set a tone for further alignment with forecasts and financial performance. Here is a copy of the final just finished Friday. Really appreciate your teamwork.

Vicki D. Nichols
Director, Customer Solutions & Market Development
JEA

21 West Church Street, T-12
Jacksonville, FL 32202-3139
(904) 665-5008
nichvd@jea.com
www.jea.com
JEA is a not-for-profit, community owned utility

BOARD MEMBER of
A·E·S·P
ASSOCIATION OF ENERGY SERVICES PROFESSIONALS

Exhibit 4 - Being Reviewed

From: McInall, Steven G. - Dir, Electric Production Resource Planning <mcinsg@jea.com>
Sent: Monday, September 10, 2018 10:03 AM
To: Crawford, Juli E. - Manager - Financial Planning & Rates
Subject: FW: Electrification Presentation
Attachments: JEA-ICF Presentation to JEA Board - CSMD 9-10-2018.pptx

FYI. Good luck working this in with your "gloom and doom" presentation.

Steve McInall. P.E.
Director, Electric Production Resource Planning
Direct: (904) 665-4309
Mobile: (904) 312-0739

From: Nichols, Vicki D. - Dir Customer Solutions & Market Development
Sent: Monday, September 10, 2018 9:54 AM
To: McInall, Steven G. - Dir, Electric Production Resource Planning <mcinsg@jea.com>
Subject: Electrification Presentation

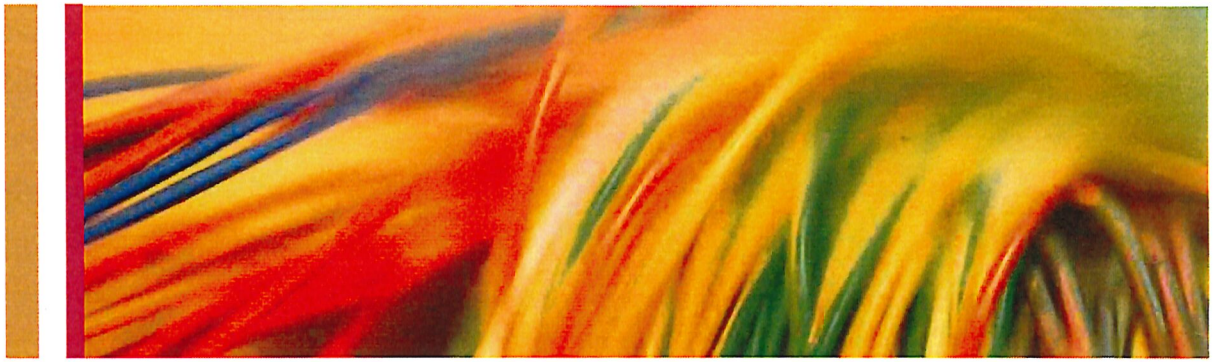
Steve,
I appreciate your helpful feedback on our EV presentation. We made some key additions and it set a tone for further alignment with forecasts and financial performance. Here is a copy of the final just finished Friday. Really appreciate your teamwork.

Vicki D. Nichols
Director, Customer Solutions & Market Development
JEA

21 West Church Street, T-12
Jacksonville, FL 32202-3139
(904) 665-5008
nichvd@jea.com
www.jea.com
JEA is a not-for-profit, community owned utility

BOARD MEMBER of
A.E.S.P
ASSOCIATION OF ENERGY SERVICES PROFESSIONALS

EXHIBIT
3
7/8/20 P McInall
PENGAD 800-631-6989



Electrification

An Emerging Market

Kerri Stewart
Chief Customer Officer

9/18/2018

Agenda

- JEA Electrification 101
- JEA Strategy To Date
- JEA's Bold Electrification Future
- Introduction to ICF
- Business Drivers for Electrification
- Approaches to Electrification
- Program Examples
- Considerations with Electrification
- A Strategic Path Forward for JEA

Electrification 101: What is Electrification?

Electrification describes the adoption of electric end-use technologies.

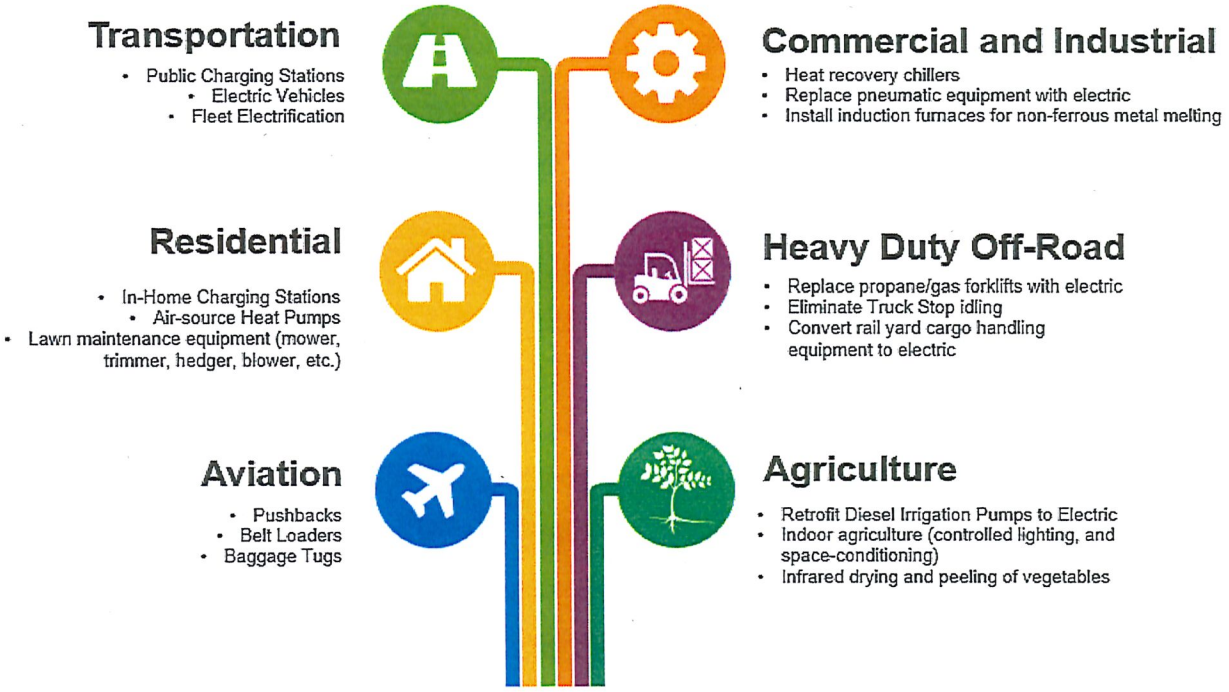
- *Electric Power Research Institute*

Electrification is the shift from any non-electric source of energy to electricity at the point of final consumption.

- *National Renewable Energy Lab*

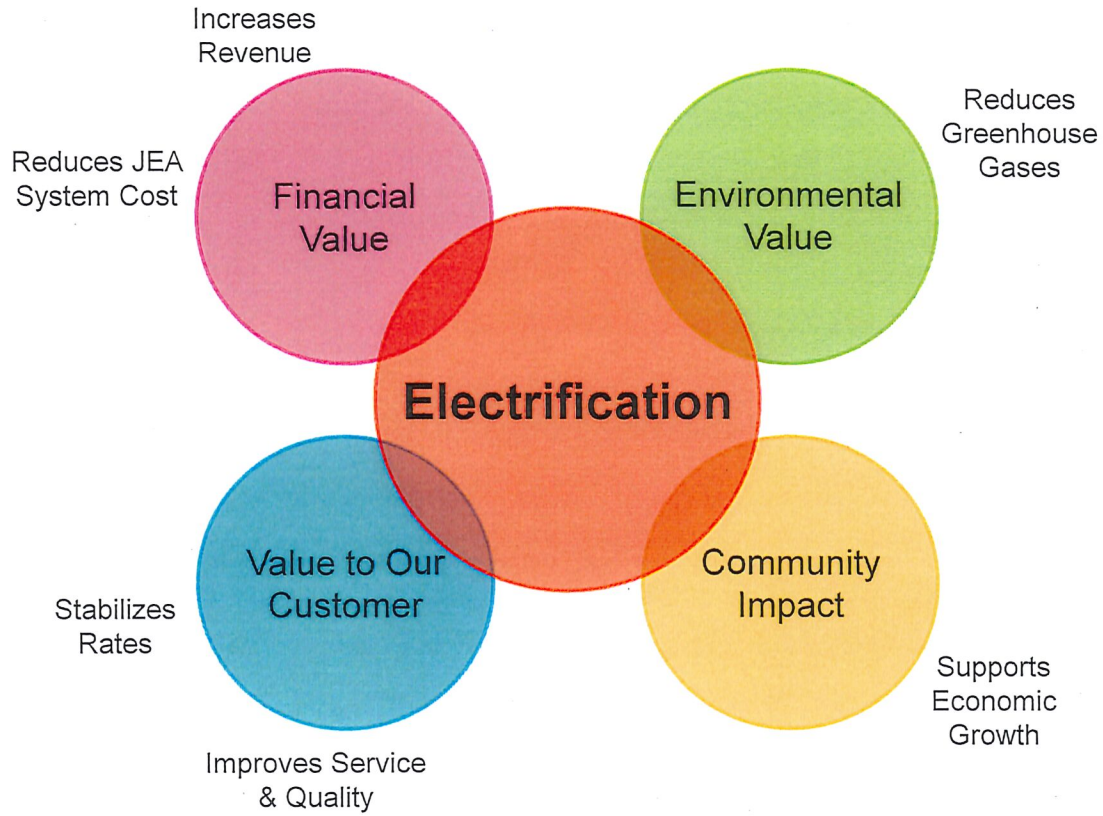
Beneficial Electrification requires that it be cost-effective for JEA, good for all customers (whether they participate in the program or not), and good or neutral for the environment.

- ICF



Source: Nexant, Electrification and the Utility of the Future, http://www.nexant.com/resources/electrification-and-utility-future

Why Electrification is so Important for JEA?



Supports All JEA's Core Values

JEA Strategy to Date

Leader Since 2014

On-Road Electrification Program

- Incentives on new Electric Vehicles
- Strategic partnership with Transportation Planning Organization (TPO) and Drive Electric Florida

Off-Road Program

- Conversion of commercial and industrial diesel/propane equipment to electric
- Direct business to business customer analysis and sales

On-Road Program Summary

Components

- EV Educational Forums
- Charging Infrastructures Support
- Trusted Advisor
- Promotional Outreach

Incentives

New Electric Vehicle	JEA Incentive
Battery size less than 15kWh	$500
Battery size of 15kWh or higher	$1,500

Results

- ✓1,032 EVs in Jacksonville
- ✓~$400k revenue
- ✓Program ROI (171 qualified participants) = 135%
- ✓High market growth projected

Non-Road Electro-technology (NRE) Program Summary

Components

- Marketing
- Vendor Training
- Consultation with JEA Customers
- Technical Support
- Financial analysis
- QA/QC inspections
- Incentive Payment

Incentives

Electrotechnology	JEA Incentive
Forklifts	$300
Airport Ground Support Equipment	$100 – $600
Truck Refrigeration Units	$200
Heavy-Duty Truck Stop Electrification	$200
Cranes	$15,000 – $75,000
Golf Carts	$50
Welders	$500

Results

- ✓ $8.8M revenue
- ✓ 67% of new sales off-peak
- ✓ Annual Budget ~$900k
- ✓ Program ROI = +1200%
- ✓ 267 participants
- ✓ 100% customer satisfaction

Strong Non-Road Participation and Customer Satisfaction

Sample Feedback

"The program is exactly as advertised and works very well, [the program] has been excellent to work with and always keeps us abreast of opportunities that we may not have thought of."

J. Peacock Southeastern Toyota/JM Family Enterprises

"We could not be happier with the program and with JEA. JEA treats us very well and we do appreciate that."

Jack McDuffie, Sysco Foods

"When we first entertained the idea of going to electric from diesel with our cranes we were skeptical. The program works very well for us, we have reduced our annual costs, electric versus diesel, and are looking forward soon to more conversions to electric.

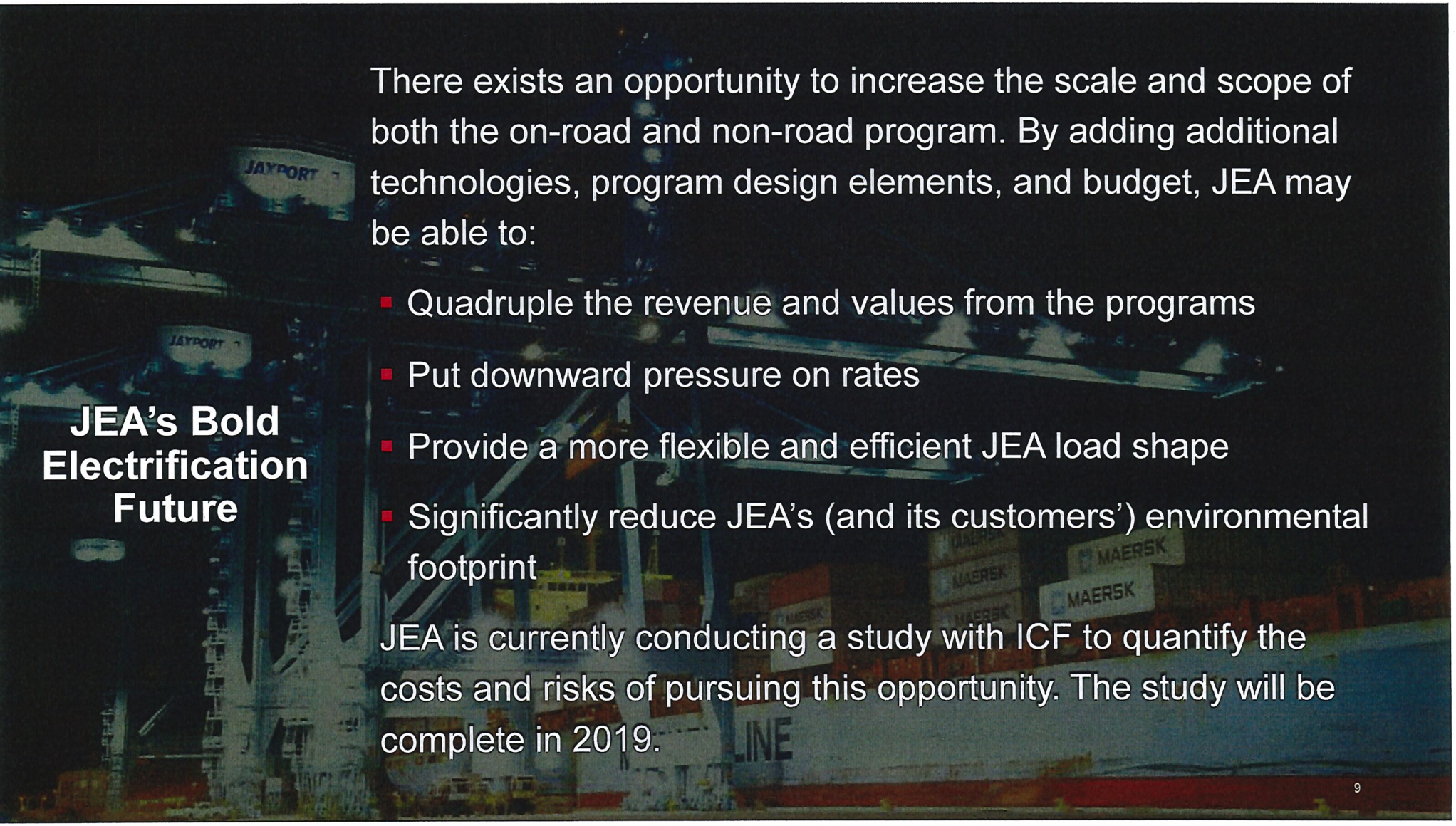
Lynn Westbrook, Jacksonville Port Authority

"BMW is very happy with the program...We are very grateful to JEA."

Christopher McMurray, BMW Distribution Center

Notable Participants

JAXPORT Jacksonville Port Authority
Malnove Packaging & Packaging Solutions
America's Navy Forged by the Sea
Kraft
GE
United States Postal Service
amazon
FedEx
Volvo
Heinz
Toyota
Mercedes-Benz
Publix.
BMW
Good things come from Sysco
Medtronic
Winn-Dixie
Hans-Mill Corporation
Crowley
GE Oil & Gas
JM Family Enterprises, Inc.
Pilot
Unilever
Office of Sheriff Jacksonville Police



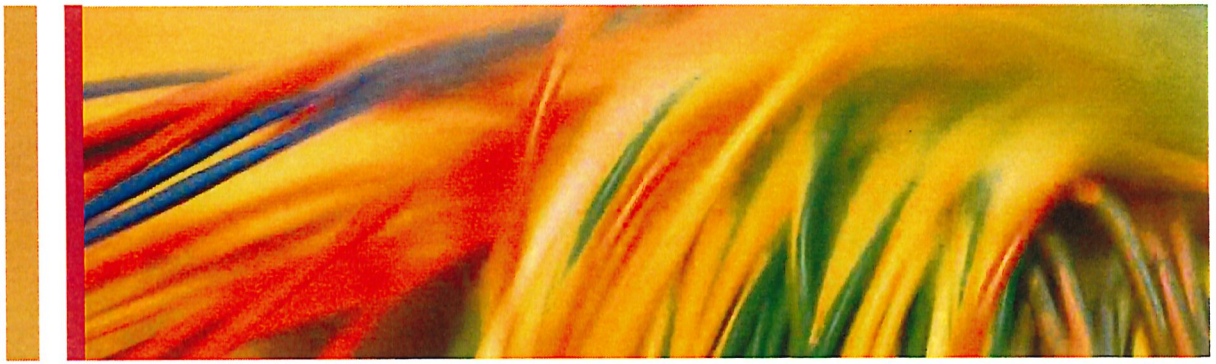
JEA's Bold Electrification Future

There exists an opportunity to increase the scale and scope of both the on-road and non-road program. By adding additional technologies, program design elements, and budget, JEA may be able to:

- Quadruple the revenue and values from the programs
- Put downward pressure on rates
- Provide a more flexible and efficient JEA load shape
- Significantly reduce JEA's (and its customers') environmental footprint

JEA is currently conducting a study with ICF to quantify the costs and risks of pursuing this opportunity. The study will be complete in 2019.

icf.com



David Pickles

Senior Vice President – Commercial Energy

Introduction to ICF

More than **5,000** People

55% Female Leaders and Gender Pay Equity

$1.2B In annual revenue

1 Providing More Electrification Services to Utilities than any other Consultancy

9 **Global Sectors**

Energy, Transportation, Government, Environment, Health, Education, Retail, Consumer, and Hospitality Sectors

Electrification Services

- Strategic Planning
- Technology Screening
- Market Assessment
- System/Locational Impact Analysis
- Environmental Impact Analysis
- Cost-Effectiveness Evaluation
- Program Design
- Marketing & Outreach
- Program Delivery
- Program Evaluation

Electrification Clients

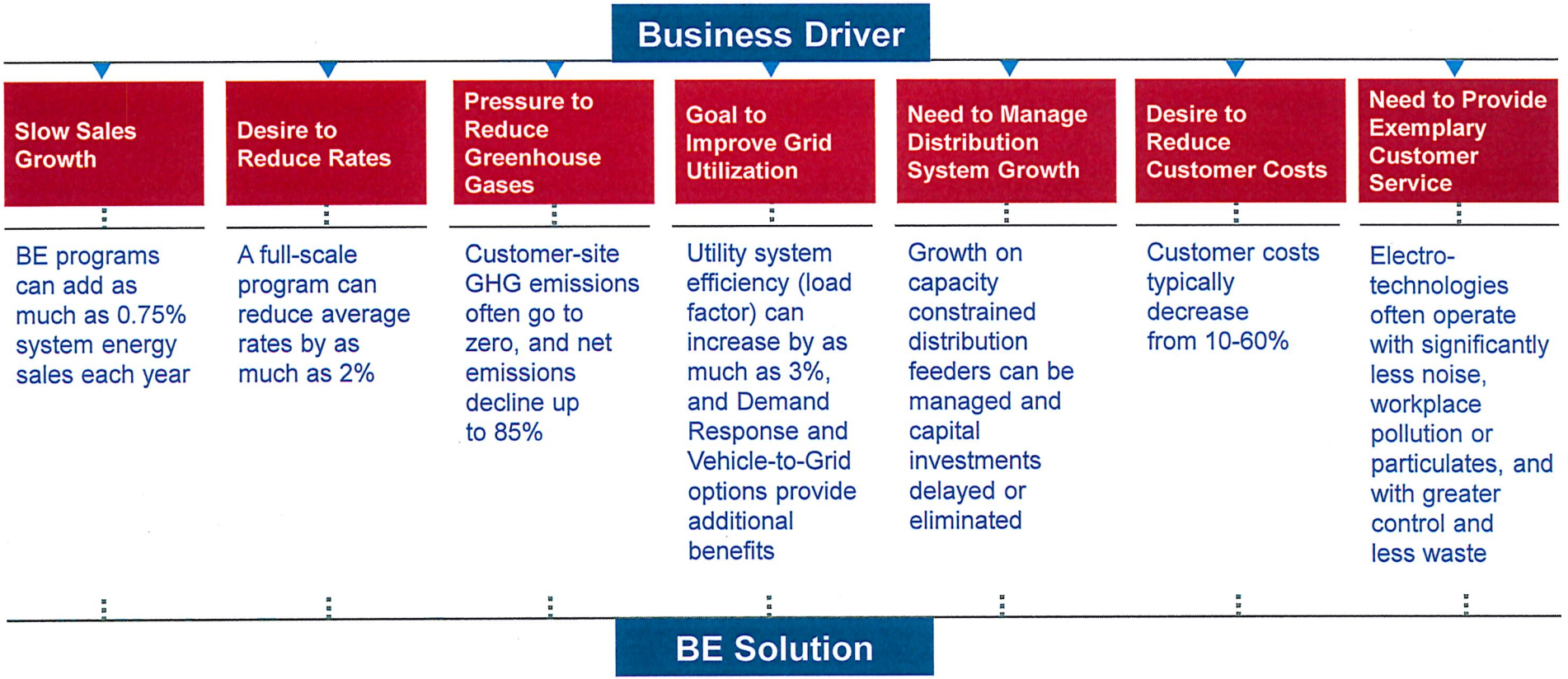
Utilities

CenterPoint Energy, TVA, SMUD, JEA, Pacific Gas and Electric Company, Southern California Edison, Entergy, SRP, Duke Energy, Ameren Missouri, Southern Company, Alliant Energy, Joint Utilities of New York, SDGE, A Sempra Energy utility, Yukon Energy, Sonoma Clean Power

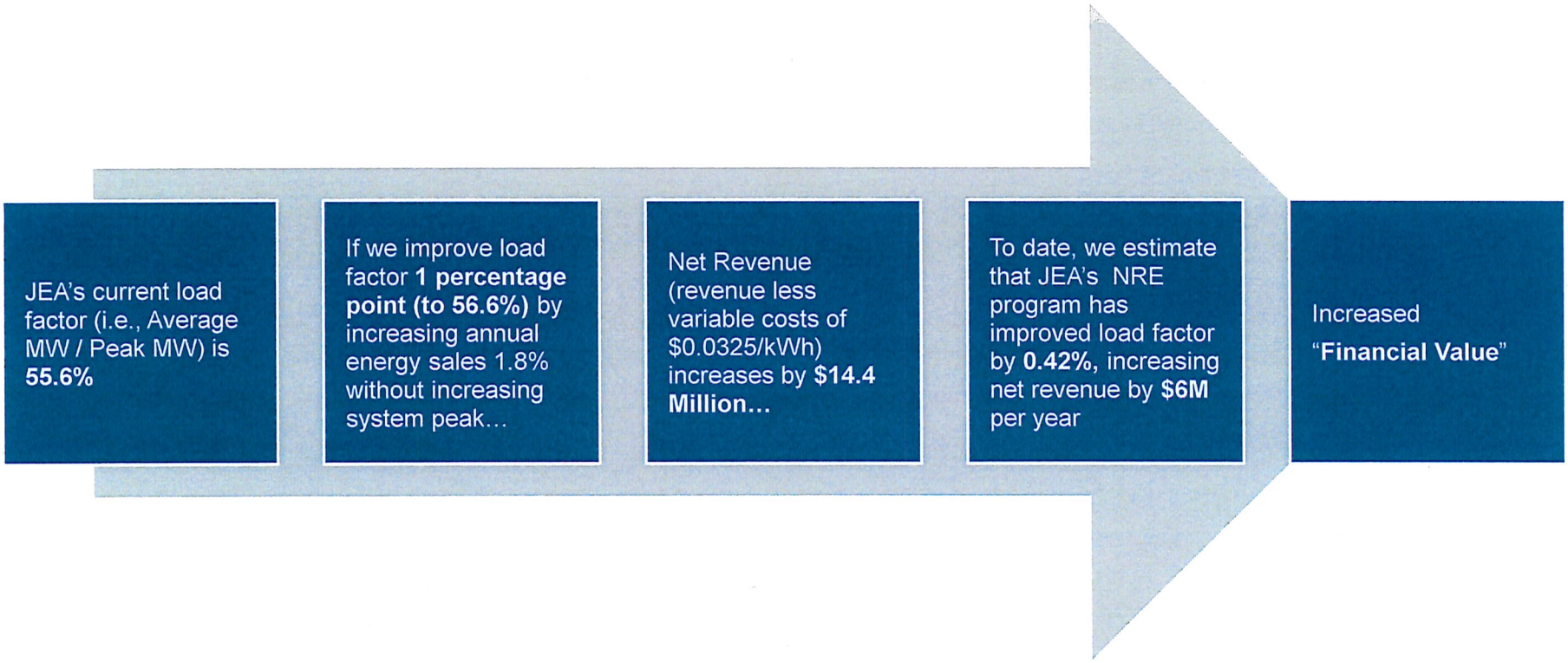
Non-Utilities

CalETC, NJTPA, nyserda, dvrpc, SANDAG, Alberta Transportation, CVAG, scta, County of Los Angeles, Metro, Tahoe Regional Planning Agency, STA, Bay Area Air Quality Management District, NREL

Business Drivers of Beneficial Electrification (BE)

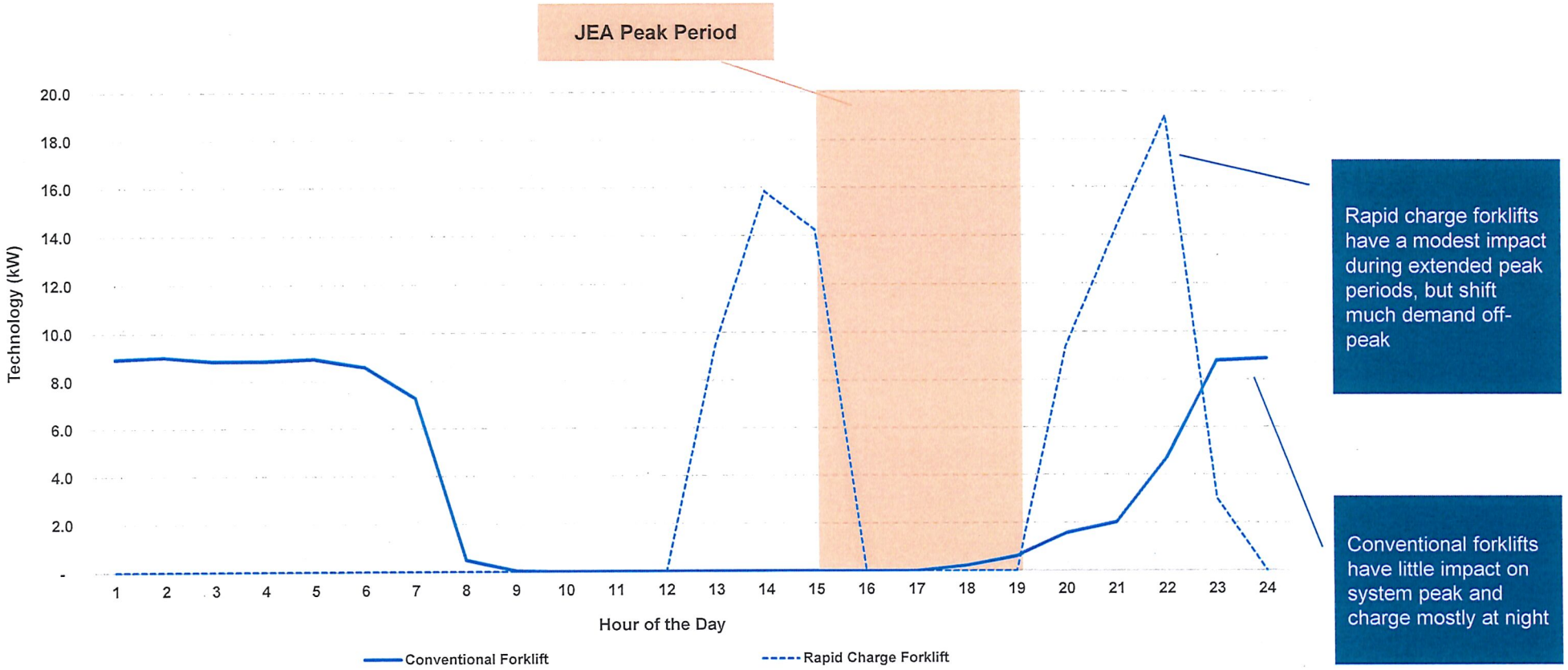


The Power of Improving System Utilization (Load Factor) by Increasing Off-Peak Sales



Note: In a future draft we need to net program costs against this and verify the calculations with JEA

JEA System Loadshape on 2017 Peak Day vs. Forklift Loadshapes



Rapid charge forklifts have a modest impact during extended peak periods, but shift much demand off-peak

Conventional forklifts have little impact on system peak and charge mostly at night

Possible Expanded Approaches to Beneficial Electrification

Technologies

- Off-Road & Material Handling
- On-Road, Light-Duty
- On-Road, MD & HD
- On-Road, Buses
- Food Preparation
- Custom
- Manufacturing
- Infrastructure (Ports/Airports)
- HVAC
- Water Heating
- Recreational
- Trains

Locations

- Home
- Multi-family
- Workplace or Destination
- In-route
- Fleets

Strategies

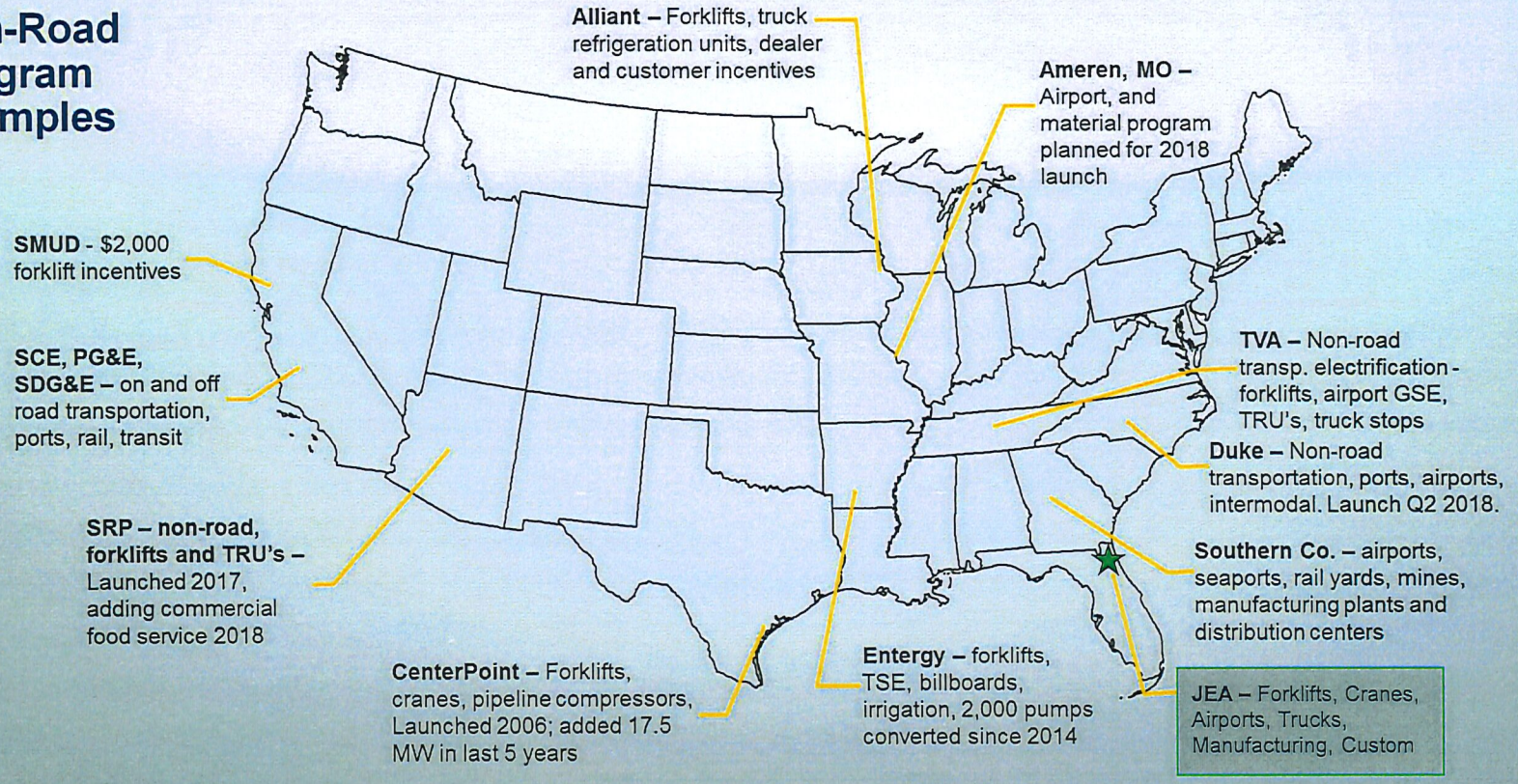
- Infrastructure Deployment
- Rate Design
- Education & Outreach
- Incentives
- Financing
- Partnership Planning
- Managed Charging
- Active Load Management (DR, V2G)

Many Additional Technologies Provide Significant Benefits

	Material Handling and Port Equipment			Airport Ground Support Equipment				On-Road	
	Rapid Charge Forklift	E/S TRU	RTG Cranes	Ground Power Units	Pushbacks	Baggage Tractors	Belt Loaders	Light-duty Vehicles	Transit Buses	Refuse Trucks
Annual kWh	27,190	15,000	600,000	148,000	61,420	23,360	12,260	4,000	50,000	35,000
% kWh Off Peak	56%	100%	63%	56%	74%	77%	77%	75% (+)	80% (+)	100%
Peak kW	7.6	0.0	124.7	35	19.4	7.2	3.8	7	50	0
JEA Net Annual Margin	$2,560	$1,320	$64,160	$12,900	$8,040	$3,230	$1,690	$326	$3,092	$2,164
JEA Present Value Lifetime Net Margin	$19,760	$9,560	$695,450	$100,240	$62,100	$24,960	$13,100	$2,510	$23,806	$16,664
Lifetime Site GHG Saved (Metric Ton)	337	237	12,164	1,325	550	250	131	36	534	553
Lifetime Site NOx Saved (Metric Ton)	0.3	1.0	24.3	6.0	2.5	0.6	0.4	0.2	1.6	2.3

JEA Leads the Pack in Scope and Relative Impact

Non-Road Program Examples



Considerations in Electrification

- Loads & locations to avoid
- Free riders
- Incentive strategy
- Fuel competition
- Allocation of benefits
- Operations of responsive technologies
- Integration with JEA and national initiatives (VW, Smart City, etc.)
- Recovery of costs
- Competitive markets
- Defining cost effectiveness

Assessing Cost-Effectiveness from Multiple Perspectives

Benefit Cost Tests	Key Question Asked	Benefits	Costs
Ratepayer Impact Measure (RIM)	Will utility rates increase?	Incremental Revenue	Program Incentives Program Overhead Incremental Electricity Supply
Participant (PCT)	Will participants benefit over the measure life?	Incentives Fuel Savings O&M Savings	Incremental Equipment Cost Incremental Electricity Supply
Modified Total Resource Cost (mTRC)	Will the total cost of energy in the utility service territory decrease?	O&M Savings Cost of IC Energy Supply	Net Participants Electric Supply and Net Participants Incremental Capital Cost Program Overhead Program Incentives Paid to "Free Riders"

Strategic Questions We Will be Addressing with JEA

- How do we capitalize on the momentum created by the existing program?
- What is the size and value of future electrification opportunities?
  - On-Road
  - Off-Road
  - Controlled charging/load management
- Which technologies and customers show the greatest promise?
- Which program designs are most appropriate?
- How can we be sure we do not create future generation or distribution problems?
- What are the best entry strategies and where can we cooperate with others?
- What are the risks and how do we mitigate them?
- What are the financial expectations and measures of performance?
- How to resource internally and externally?
- Who are our best partners and how to partner?

Guiding Principles

- Evaluate against JEA's core values
  - Value to our customer
  - Financial value
  - Community impact value
  - Environmental value
- Create a flexible and scalable platform
- Focus on cost-effectiveness and financial returns
- Consider capacity constraints (recognizing that some on-peak load will come along with significant off-peak sales growth)
- Align with JEA investments in AMI, solar, storage, rate design, and other programs
- Strengthen customer satisfaction and JEA brand
- Be innovative; Be bold

What Might It Look Like for JEA?*

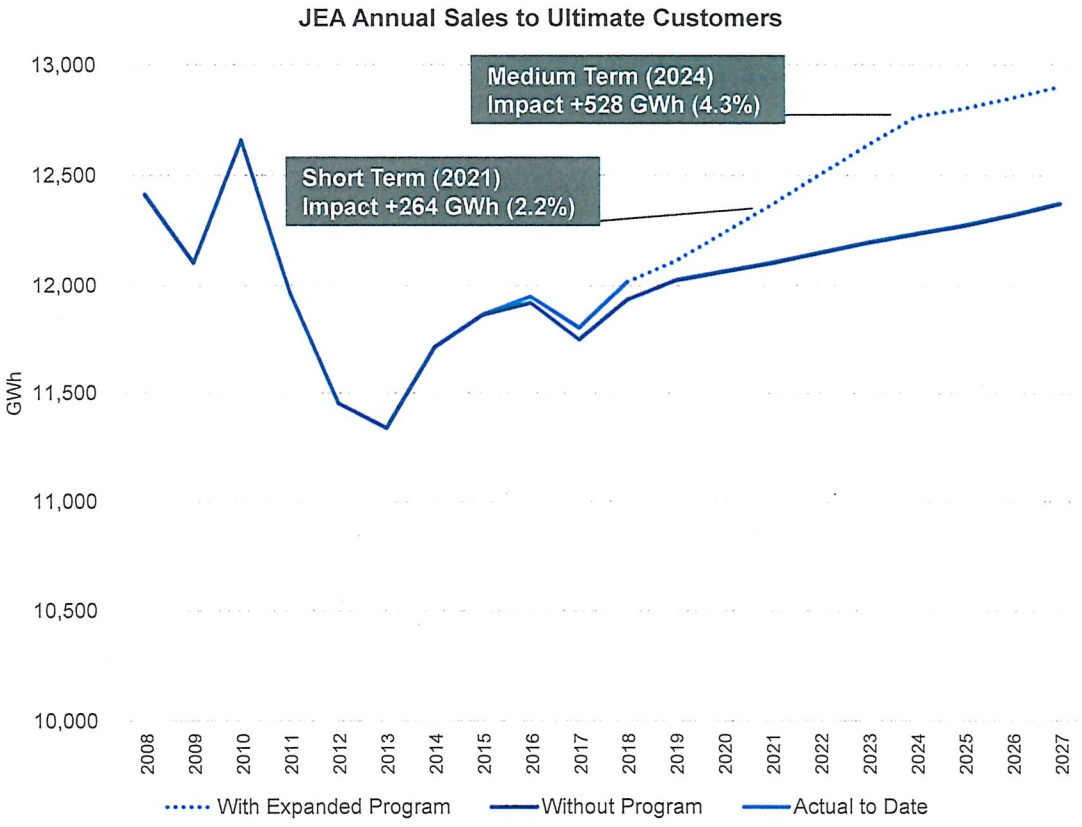
Comprehensive Strategic Electrification Plan

Short Term (<3 years)

- Expanded non-road program
- Pilot EV charging stations for personal and fleet vehicles
- Electric transit bus pilots
- Additional charging stations

Long Term (3-10 years)

- Dedicated port electrification
- Expand EV charging stations
- Expand transit bus electrification
- Electrify JEA fleet vehicles
- Support statewide charging network
- Link electric Transit Buses & Skyway with solar charging stations



Note: Under evaluation in JEA's Electrification Strategic Plan.

Short-Term Opportunities*

Potential Projects and Opportunities

- Tug Boats at the Jacksonville Port Authority Ports, Naval Air Station Jacksonville, Mayport Naval Ship Yard, and possibly docking stations downtown on the Saint Johns River.
- Port Gantry Cranes (4)
- Mayport Ferry – ship for transporting vehicle and passengers.
- Shore Power for ships (instead of running generators) – ports listed above plus the cruise line port in Jacksonville.
- Vehicle-to-Grid (V2G) and Battery-to-Grid Pilots
- Locomotive Cold-Storage Generators (Florida East Coast Railways opportunity)
- Buses (both city and school)
- Drayage-Yard Trucks (primarily utilized at and around the ports.)
- Local Delivery FedEx, UPS, Amazon, and JTA (Jacksonville Transportation Authority) trucks
- "Garbage" Trucks
- Hangar doors (Boeing, Flightstar, local airports, Air National Guard, Naval Air Station Jacksonville, Mayport Naval Base)

**Note: Under evaluation in JEA's Electrification Strategic Plan.*

Next Steps

1) Agreement on forward business case initiative
2) Inventory and review JEA's current portfolio of initiatives
3) On-road assessment
4) Expanded off-road assessment
5) Identify and assess potential technologies and designs
6) Develop business cases
7) Recommend strategic plan

From: Fischer, Melinda L. - Manager Customer Solutions <fiscml@jea.com>
Sent: Tuesday, September 11, 2018 11:20 AM
To: Crawford, Juli E. - Manager - Financial Planning & Rates
Cc: Nichols, Vicki D. - Dir Customer Solutions & Market Development; Leigh, Timothy G. - Manager Customer Solutions; Wucker, Donald P.; Blackshear, Victor L. - Financial Analysis Specialist
Subject: RE: JEA Status Quo
Attachments: Juli-DataRequest.xlsx

Juli,

I apologize for the delay. Here is the assumptions we had put together. Please let me know if you have any question regarding this.

Thanks,
Melinda

From: Crawford, Juli E. - Manager - Financial Planning & Rates
Sent: Tuesday, September 11, 2018 11:16 AM
To: Fischer, Melinda L. - Manager Customer Solutions <fiscml@jea.com>; Leigh, Timothy G. - Manager Customer Solutions <leigtg@jea.com>
Cc: Blackshear, Victor L. - Financial Analysis Specialist <blacvl@jea.com>
Subject: JEA Status Quo

Hi Melinda/Tim,

Our first draft for the JEA Status Quo case is due Friday, so we are in the process of creating our outline. Do either of you have assumptions nailed down that you can send to us?

Thanks,
Juli

Juli Crawford
Interim Director of Financial Planning and Analysis
Direct: (904) 665-6151
Mobile: (352) 219-0534

Disruptive Innovation

OCTOBER 2018

JEA STATUS QUO CASE

The JEA Enterprise systems face increasing pressure from disruptive innovation. A disruptive innovation is an innovation that creates a new market and value network and eventually disrupts an existing market and value network, displacing established market-leading firms and products. As we all know, disruptive innovation has changed phone service [iPhone], video rental [Netflix], retail sales [Amazon], and taxi [Uber/Lyft] industries.

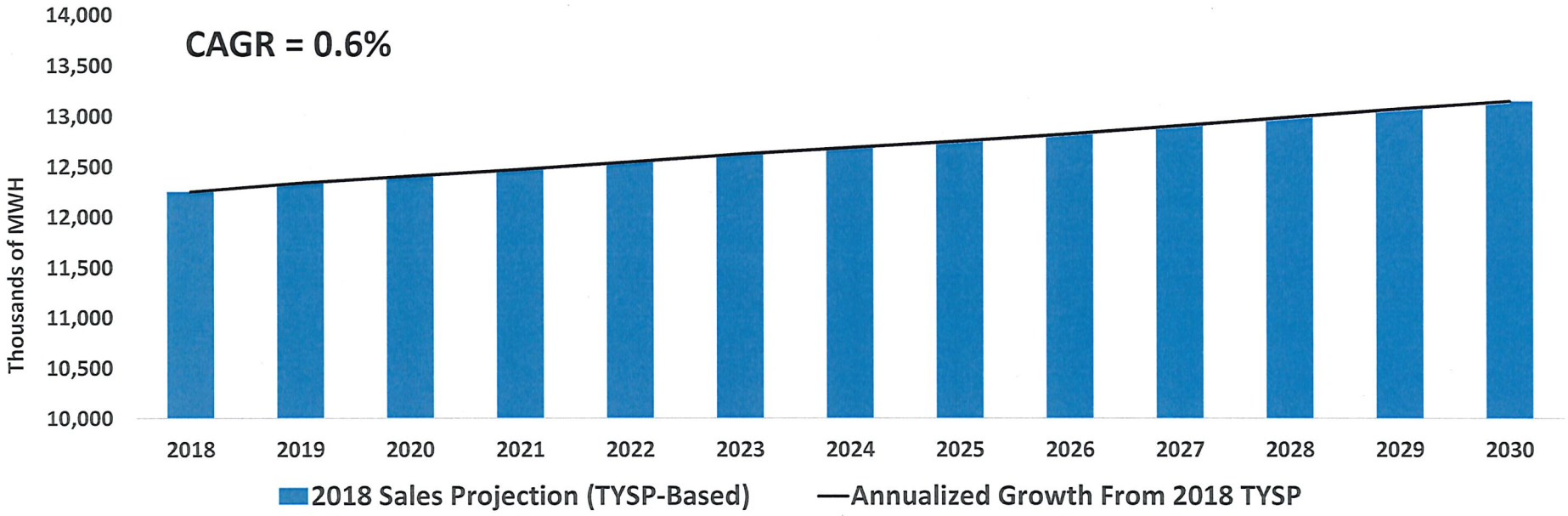
JEA, and its predecessor organizations, has been the market leader for providing electric, water, and sewer services to northeast Florida for over 100 years. Increasing innovation threaten the stability of the core businesses of JEA.

The Electric Enterprise faces threats from increasing rooftop and commercial solar penetration, energy efficiency, and the advancement of battery technology. Electric vehicles and non-road electrification can offset some of the erosion by solar and battery technology and energy efficiency.

The Water Enterprise faces threats from growth in constrained water supply areas due to JEA's CUP limits, and legislation requiring stricter treatment and discharge criteria.

This analysis is an examination of the disruptive innovations affecting the JEA systems. There are several assumptions made in this analysis as to how these innovations and changes will affect traditional JEA revenue sources (electric, sewer, and water sales).

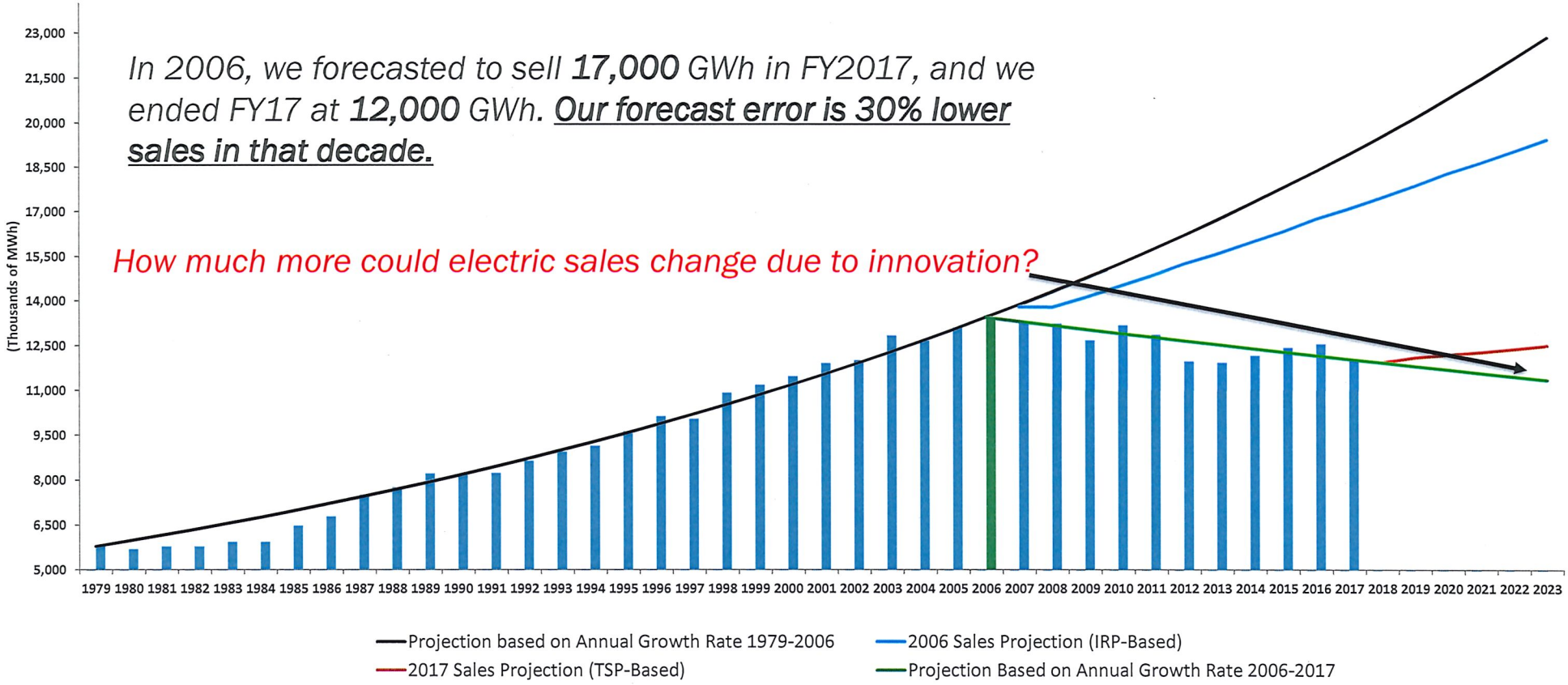
CURRENT ELECTRIC FORECAST = GROWTH



GROWTH JEA electric sales are forecasted using multiple regression analysis of sales history, population, median household income, housing starts, commercial square footage, commercial employment, gross product, and electric rates in the JEA Ten Year Site Plan (TYSP).

However, recent history has taught us that market forces can change this trend

JEA HISTORICAL ELECTRIC PROJECTIONS AND SALES

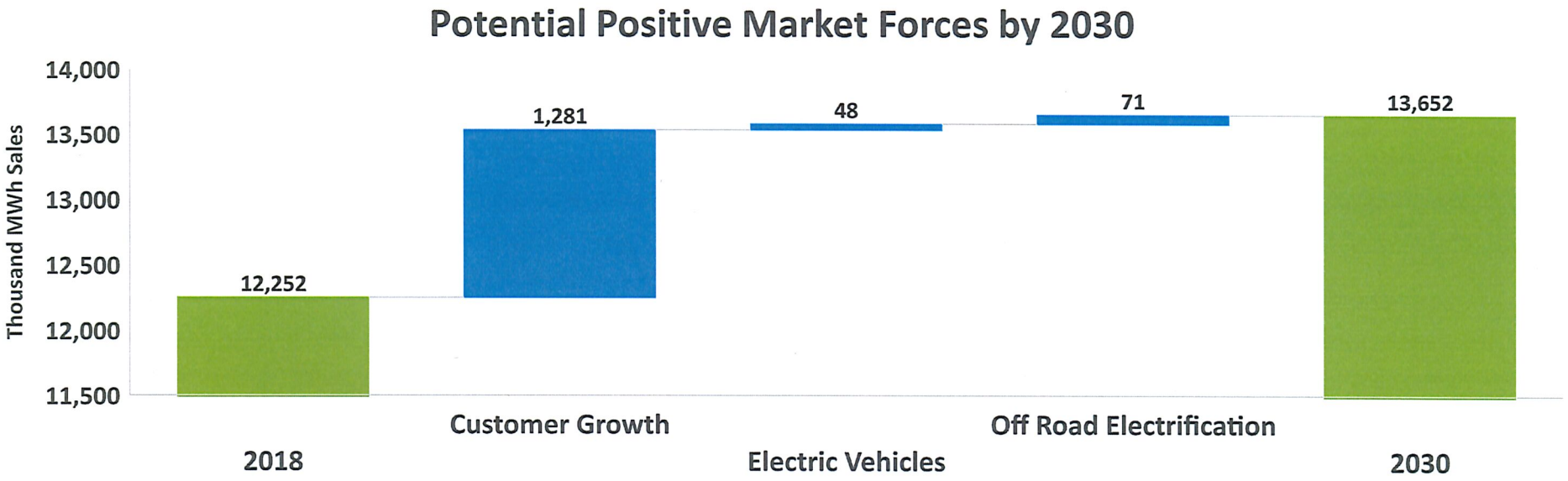


There are market influences that could quickly diverge our forecast, up or down...

POSITIVE ELECTRIC MARKET INFLUENCES FOR JEA

Electric Vehicles(EV) Low adoption assumed for Jacksonville, achieving 9 times the 2018 energy in 2030, forecasted based on battery charge and miles driven per day. EV adoption cause an increase in JEA electric sales.

Non-Road Electrification(NRE) Low forecast, achieving 3 times the 2018 energy in 2030 including the assumption to not renew/rebid the FY18-20 electrification contract. Non-road electrification causes an increase in JEA electric sales.



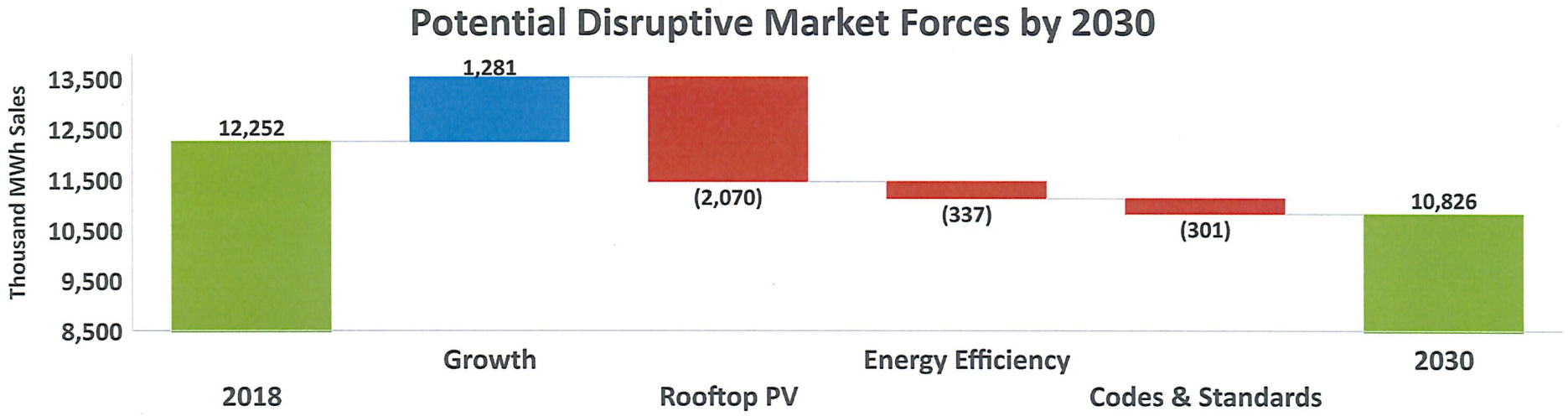
If EV and NRE accelerate, JEA is well positioned to handle it

NEGATIVE ELECTRIC MARKET INFLUENCES FOR JEA

Energy Efficiency (EE) JEA is offering customers both education and economic incentives on more efficient end-use technologies achieving a 24% CAGR between 2018 and 2030

Codes and Standards (CS) Anticipating stricter regulations will lead to 1% CAGR between 2018 and 2030

Rooftop PV (RPV) According to Solar Energy Industry Association (SEIA), total installed PV capacity in the U.S. is expected to more than double over the next 5 years and JEA is taking a more aggressive forecast of 60% CAGR between 2018 and 2030



If EE, CS, RPV accelerate and electrification remains stagnate, JEA customer and financial value become at risk.

JEA CURRENT FRAMEWORK

Florida Public Service Commission

- Require electric power conservation and reliability within a coordinated grid
- Approve territorial agreements and settle territorial disputes
- Prescribes uniform systems of accounts & rate structures for all electric utilities
- This includes oversight that the total revenue requirements of utilities are collected fairly from all customer classes.

City of Jacksonville Charter

- Article 21.01: Established JEA for the express purpose of acquiring, constructing, operating, financing, and otherwise having plenary authority with respect to electric, water, sewer, natural gas, and such other utility systems as may be under its control now or in the future.
- Article 21.04: If JEA determines that it is...appropriate...to provide...any other utility system or function...JEA shall by resolution identify such additional utility system...to the council
- Article 21.07: There shall be assessed upon JEA...from revenues of the electric...and water and sewer system...after the payment of all costs and expenses incurred by JEA in connection with the operation...JEA shall pay the city combined assessment from the electric system and the water and sewer system.

St. Johns River Water Management District

- The district sets minimum flows and levels for rivers, lakes and springs to ensure that water use does not cause significant harm to these important resources.
- JEA's consumptive use permit (CUP) allows water to be withdrawn from groundwater or surface water for reasonable-beneficial uses — such as public supply (drinking water), agricultural and landscape irrigation, commercial use and power generation

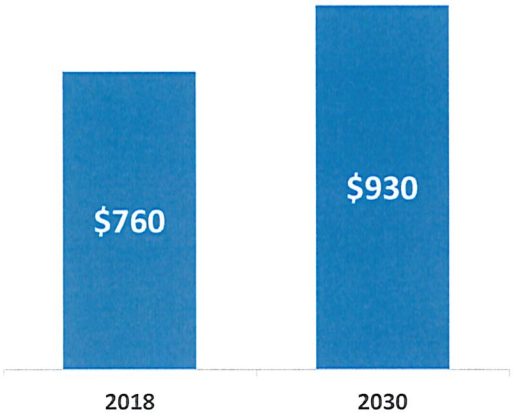
JEA Pricing Policy

- Primary goal is to establish revenue requirements to fully recover the costs necessary to operate and maintain the utility, consistent with its mission, through fair and equitable pricing
- The total revenue requirement of each system must be sufficient to ensure the financial integrity of the utility, including recovery of debt service, sufficient revenue to meet renewal and replacement fund requirements, and maintenance of key financial metrics

OCTOBER 2018

JEA STATUS QUO CASE

Declining electric sales results in <u>significant</u> rate increases to meet higher revenue requirements



OCTOBER 2018

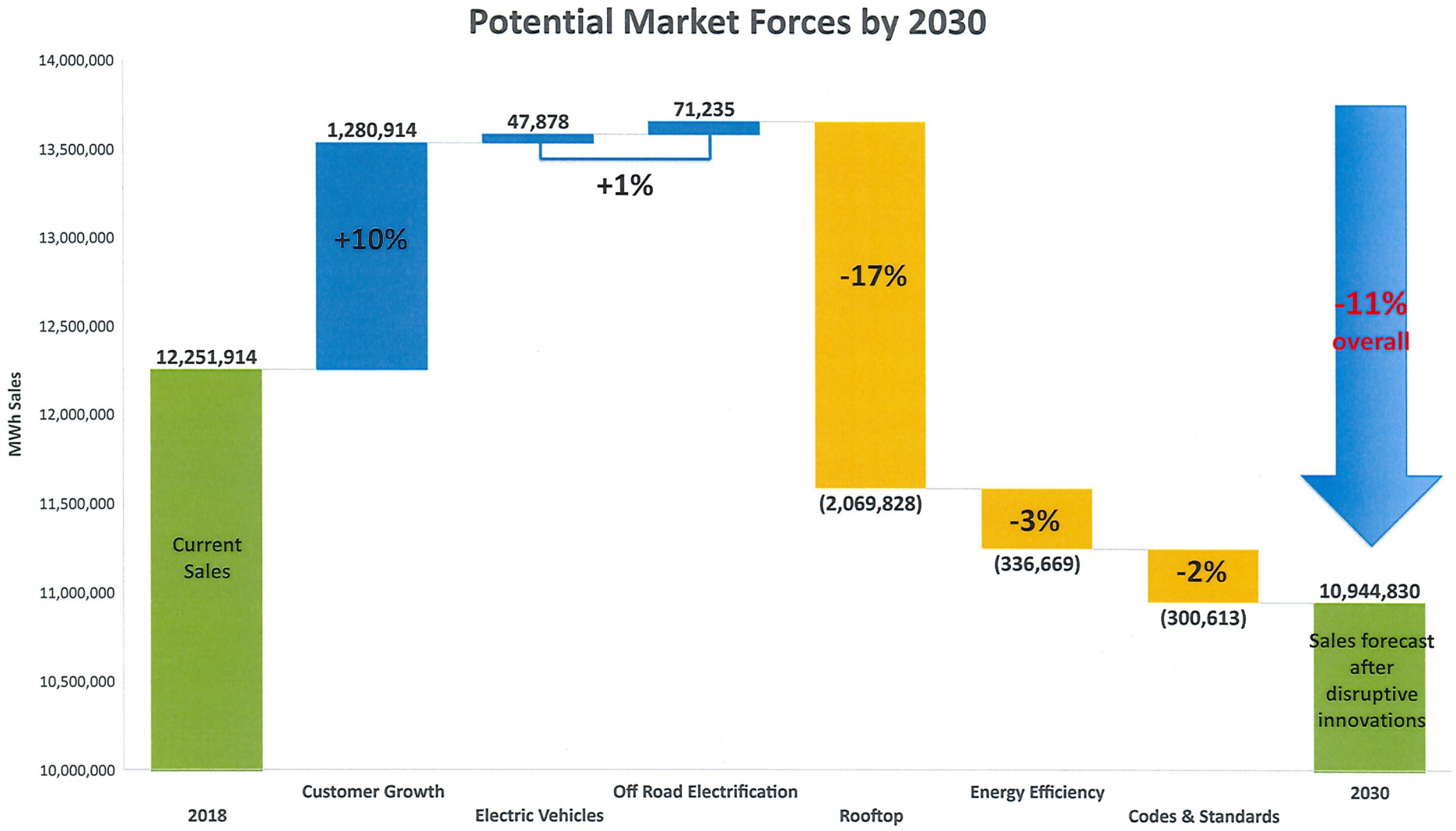
JEA STATUS QUO CASE

Status Quo: RESULTS IN

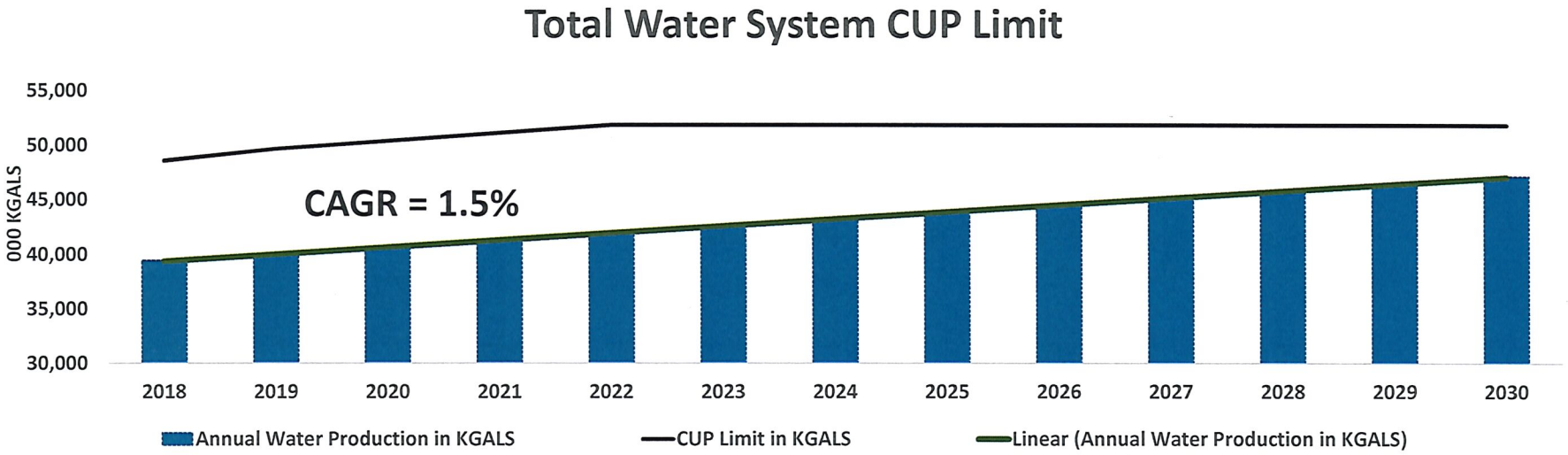
- Stranded electric assets
- Fixed debt service obligations
- More pressure to meet the COJ contribution requirement
- Additional revenue required from customers from 2018 to 2030 = $1 billion

Evolution: JEA Charter Change

- A charter change would allow JEA to participate in disruptive innovation.
- For example, JEA could install rooftop and commercial solar, develop and retail storage solutions, expand dark fiber, and other technology.


Potential Market Forces by 2030
MWh Sales
14,000,000
13,500,000
13,000,000
12,500,000
12,000,000
11,500,000
11,000,000
10,500,000
10,000,000
12,251,914
Current Sales
1,280,914
+10%
47,878
71,235
+1%
-17%
(2,069,828)
-3%
(336,669)
-2%
(300,613)
-11% overall
10,944,830
Sales forecast after disruptive innovations
2018
Customer Growth
Electric Vehicles
Off Road Electrification
Rooftop
Energy Efficiency
Codes & Standards
2030

CURRENT WATER FORECAST = GROWTH



Growth JEA water sales are forecasted using multiple regression analysis of sales history, population, weather, and socio-economic variables.

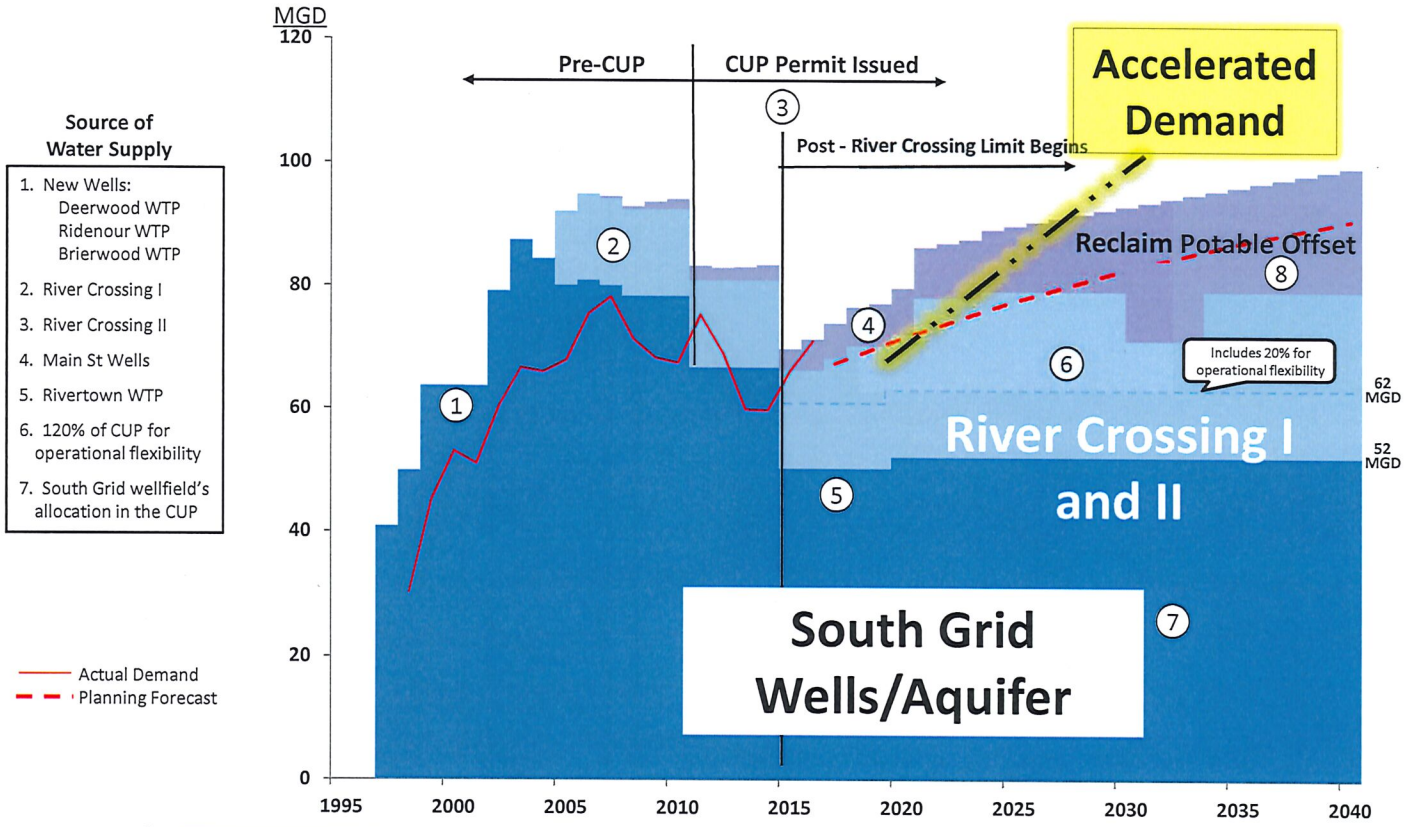
However, associated costs to maintain growth could quickly erode financial value if local CUP limits are exceeded

LOCAL GRID CUP PRESSURE

South Grid's CUP limit is 52MGD. The current demand is ~65 MGD. 18MGD currently comes from Main Street River Crossings.

In the future under high growth conditions, the demand on the South Grid could exceed current supply options.

Costly investments in alternative water supply options will be required.



8 Leverage future South Grid Demand (Growth and Development) with reclaimed water, evaluate water purification and consider a third river crossing

Alternative Water Supply Options

JEA is conducting a forward-thinking research and development project to evaluate technologies for producing purified water using highly treated wastewater as a source.

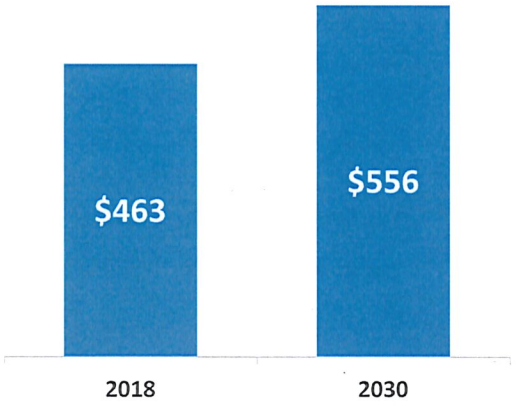
a. Total O&M cost assumed to be $1.00/1000 gallons
b. Total O&M cost assumed to be $1.50/1000 gallons(Based on Vander Lans and GWRS O&M costs)
c. Total O&M cost assumed to be $1.20/1000 gallons (Cost of Brackish Groundwater Desalination in Texas, 2012, Texas Water Develop Board)
d. Total O&M cost assumed to be $2.20/1000 gallons (Based upon a + c. Assumes some pretreatment similar to Ozone/BAF would be required for Surface Water RO)
e. Adjusted to January 2018 dollars (RSMeans Historical Cost Indexes)
f. Purification Cost only – no storage/transmission mains/injection wells)

Data from Todd Mackey - Dir W/WW & Reuse Treatment

Water Supply Option	Capacity (mgd)	Capital Cost ($Millions)[e]	O&M Annual/Year ($ Millions)	Cost per year Capital ($Millions)*
Demand-Side Management	5	$6	$1.0	$0.4
Reclaimed Retrofit	1	$19	$0.1	$1.2
TWMP	20	$107	$2.0	$7.0
Third River Crossing	25	$230	$1.7	$15.0
Water Purification - Ozone/BAF [a,f]	10	$100	$3.7	$6.5
Water Purification - UF/LPRO [b, f]	10	$100	$5.5	$6.5
RO of Brackish Groundwater [c]	10	$73	$4.4	$4.7
RO of Brackish Surface Water [d]	10	$138	$8.0	$9.0

Table from Todd Mackey - Dir W/WW & Reuse Treatment (* Assumes capital costs are amortized at 5% for 30 years)

*Localized growth results in AWS investment funded with new debt and rate increases**



*assuming overall 1% water/sewer growth

OCTOBER 2018

JEA STATUS QUO CASE

For example: Water Purification Plant

- This 25 MGD plant would cost $250M in capital and additional $10M annual O&M.

...RESULTS IN

- New debt for AWS capital investments
- Require a 5% rate increase in 2025

WATER MARKET

Water Efficiency

JEA water production is governed by the consumptive use permit (CUP) issued by the St. Johns River Water Management District. The current permit is valid through the year 2031 for a system total of 142 MGD. JEA Water/Wastewater Planning projections for this time period does not exceed the total CUP limit for combined JEA grids. There is the slight possibility that SJRWMD will reduce JEA's total CUP after 2031. There is some localized CUP limit pressure (namely the Southside grid) that will impact water supply decisions before 2031.

Water Quality

Currently, the St. Johns River Water Management District does not regulate JEA on mineral discharge into the waterways. The District may choose in the future to regulate utilities and other companies on nitrogen or phosphorous discharge and strontium scale formation. Increased water quality and discharge regulation will increase cost for the water and wastewater systems.

Nitrogen Credits

The City of Jacksonville has an agreement with JEA to trade nitrogen credits. If the city requires JEA to transfer additional nitrogen credits in the future, JEA will have to implement alternative wastewater solutions to fulfill this requirement.

OCTOBER 2018

JEA STATUS QUO CASE

Conclusion

TBD

Exhibit 7 - Being Reviewed

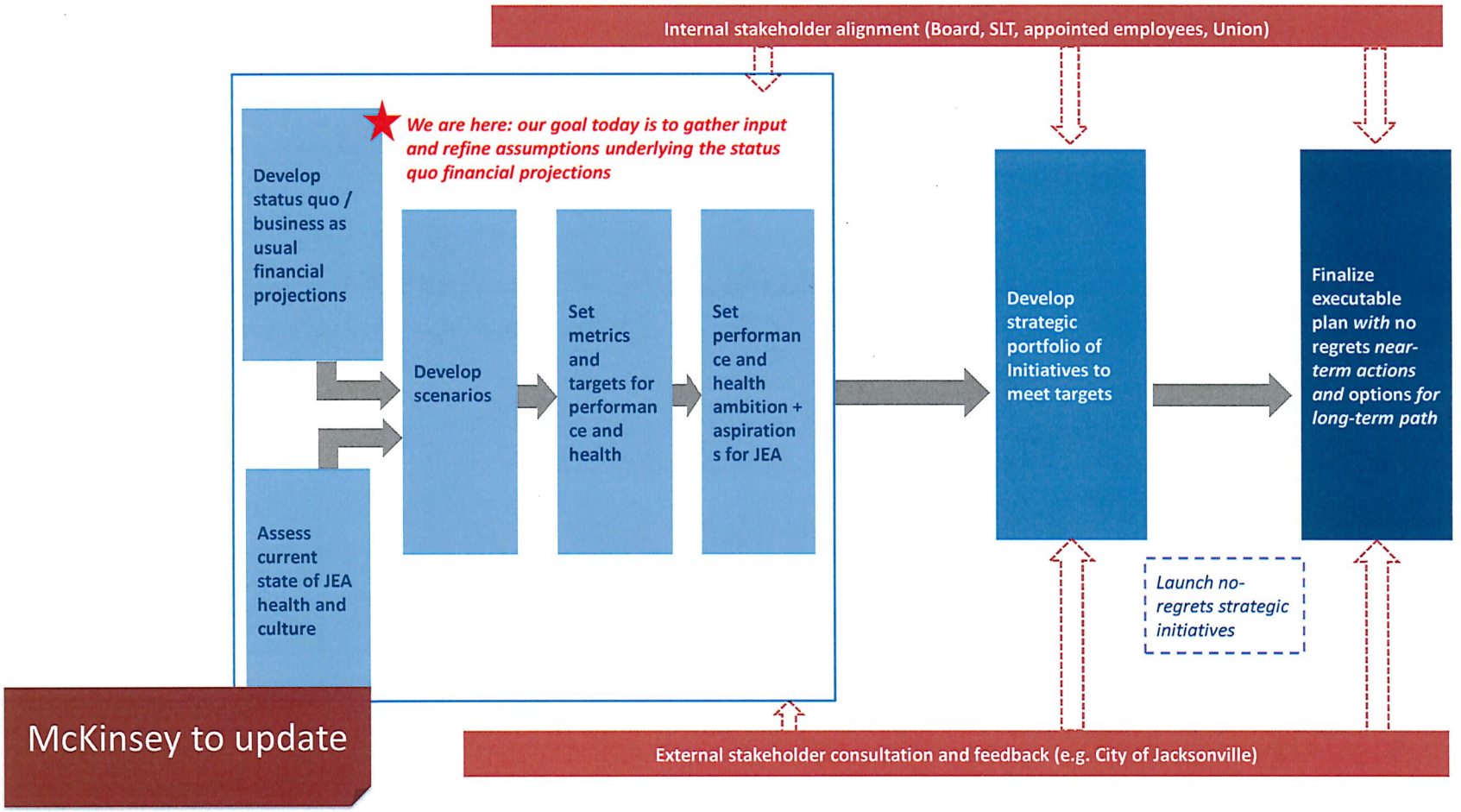
Update language, include context language, include on each slide

Disclaimer

lowing "Baseline Conversation" financial
s are presented solely for JEA Board of Directors
and action. They are not a projection of future financial performance and, as such, should not be relied upon by present or prospective JEA bond investors to purchase or sell any security or to make an investment decision. The projections are merely a mathematical representation of a hypothetical case for change. Actual results are likely to differ materially from this business case.

Today, we will discuss JEA's first step in a broader strategy to succeed.

What does the future look like if JEA doesn't change?



McKinsey to update

Add a slide that shows JEA consolidated/trends and impacts to JEA as a whole business/top down

Add more assumptions and cost drivers, revenue, capex, opex, contribution

Mention what is not included i.e. economy, deregulation, weather, natural disaster, etc.

Add slide with historical forecast – McKinsey?

Executive summary

Water System

- Water/Wastewater income is forecasted to be **stable through 2030** with funds available for city contribution
- Preliminary forecasts show **continued growth during the period** driven by new connections, though may be offset by continued trend in more efficient use per capita
- While **no significant supply challenges** are forecast in the short-term, JEA is taking proactive steps to address the projected shortage in the South Grid
- JEA's water business can continue to build on its stable financial health to become a **distinctive leader in value to its customers, community, and environment**

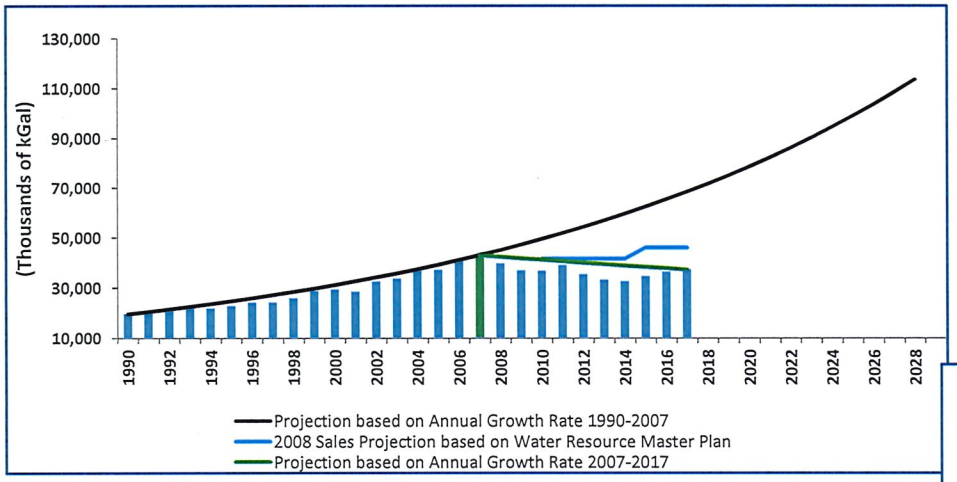
Mention regulations will have impacts on sales, cost per kgal and business performance (governor)

Energy System

- National trends in energy efficiency and distributed generation have begun to **shape utility energy sales forecasts across the county**
- JEA is no exception, with **declining loads over the past decade** driven by both the economic downturn and energy efficiency gains
- Looking forward to 2030, **strong economic growth will not offset accelerated distributed generation and energy efficiency**, leading to decreased load (7% reduction 2018-30), declining income, and a net loss after city contributions

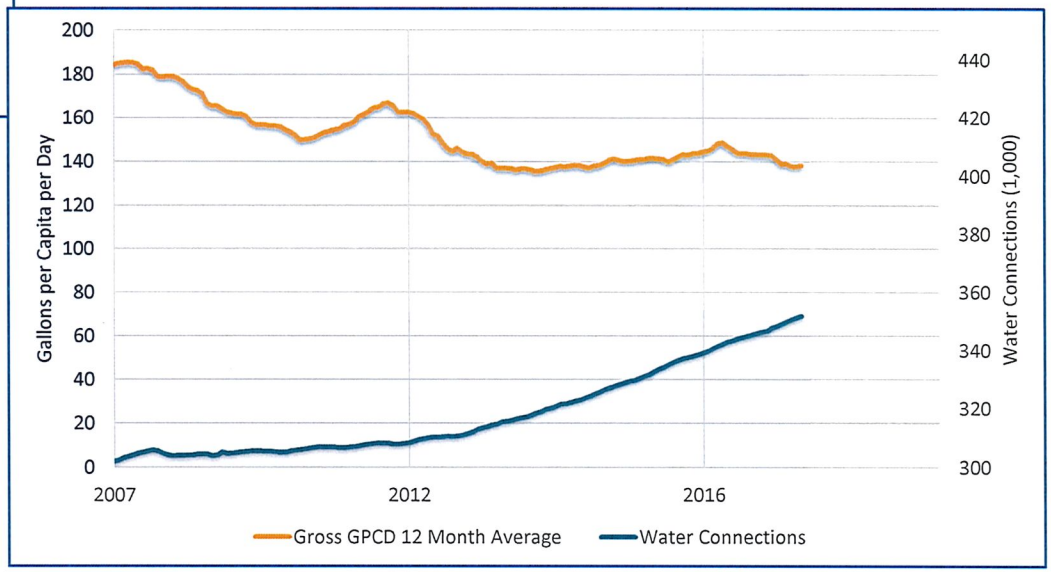
Water Sustainability Strategy

Historical water usage and sales

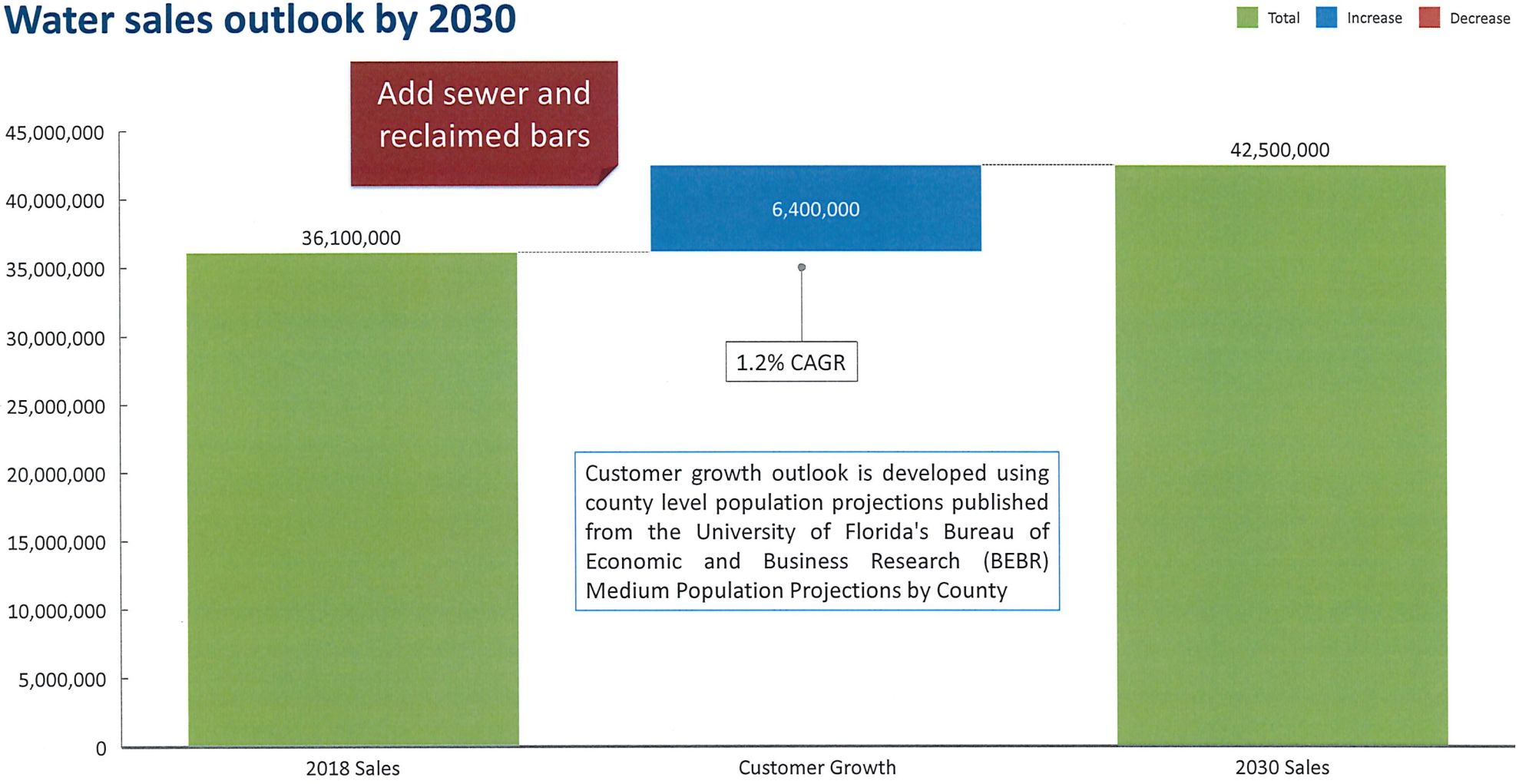


There are market influences that could diverge our forecast, up or down...

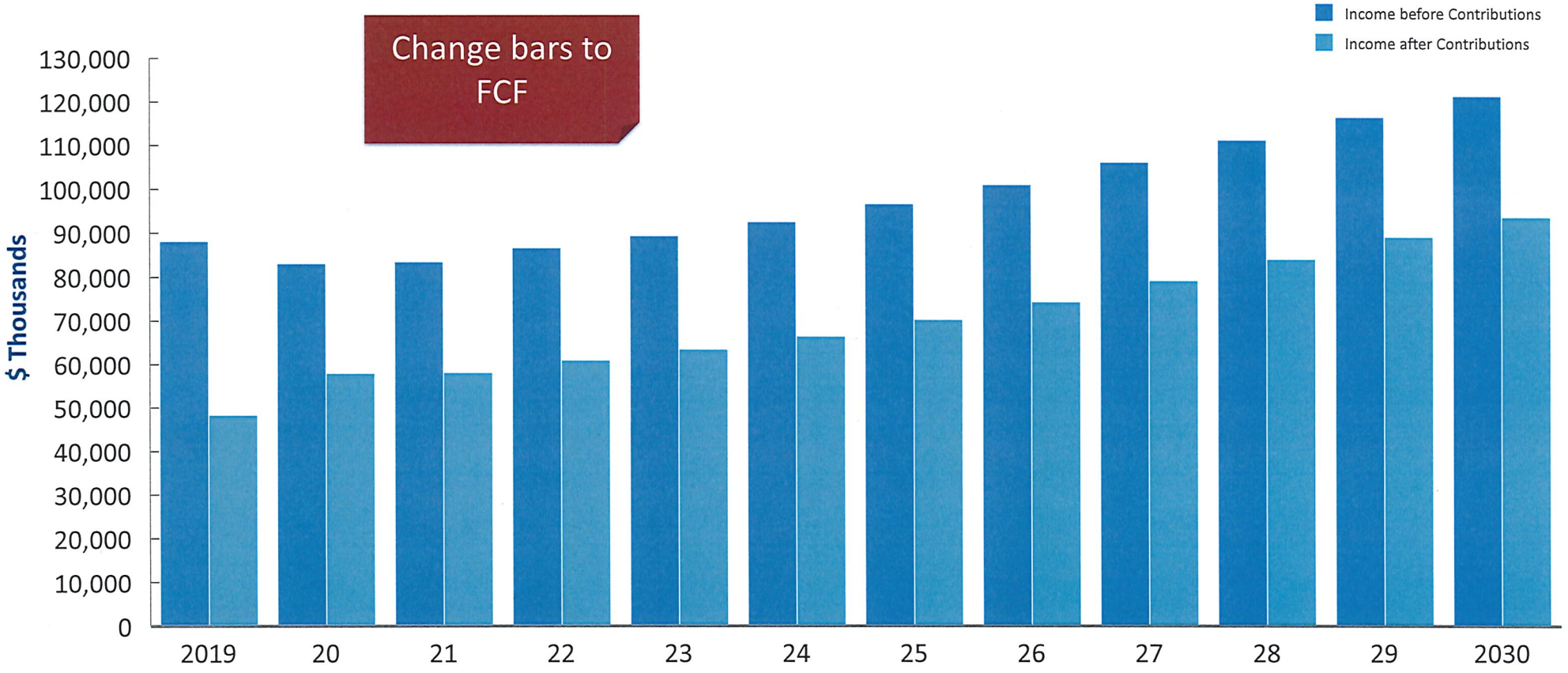
Water connection growth continues, however water efficiencies have stabilized usage per customer



Water sales outlook by 2030

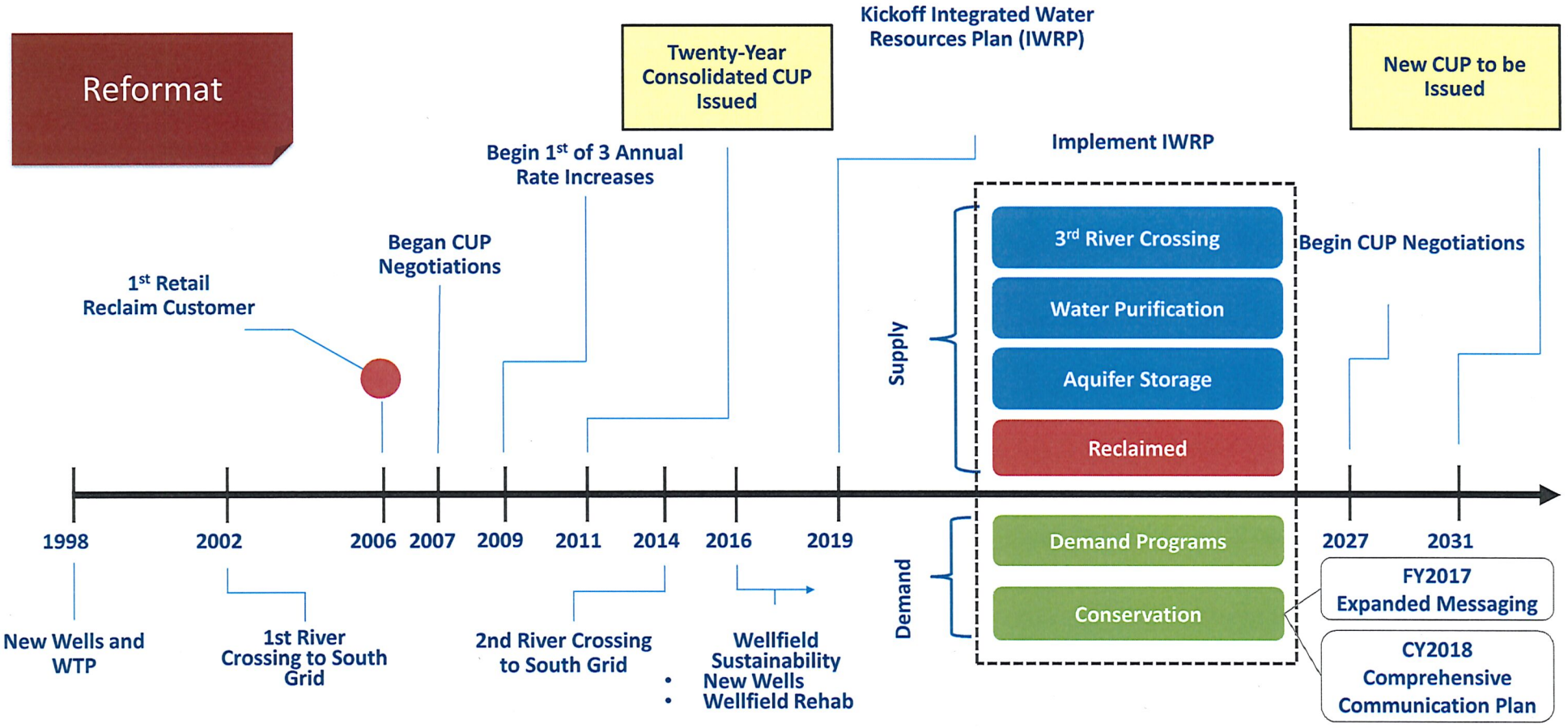


Water/sewer system financial outlook stable



The Water System Income is stable before and after city contributions

Significant milestones achieved in the past & innovative plans for the future will ensure a sustainable resource

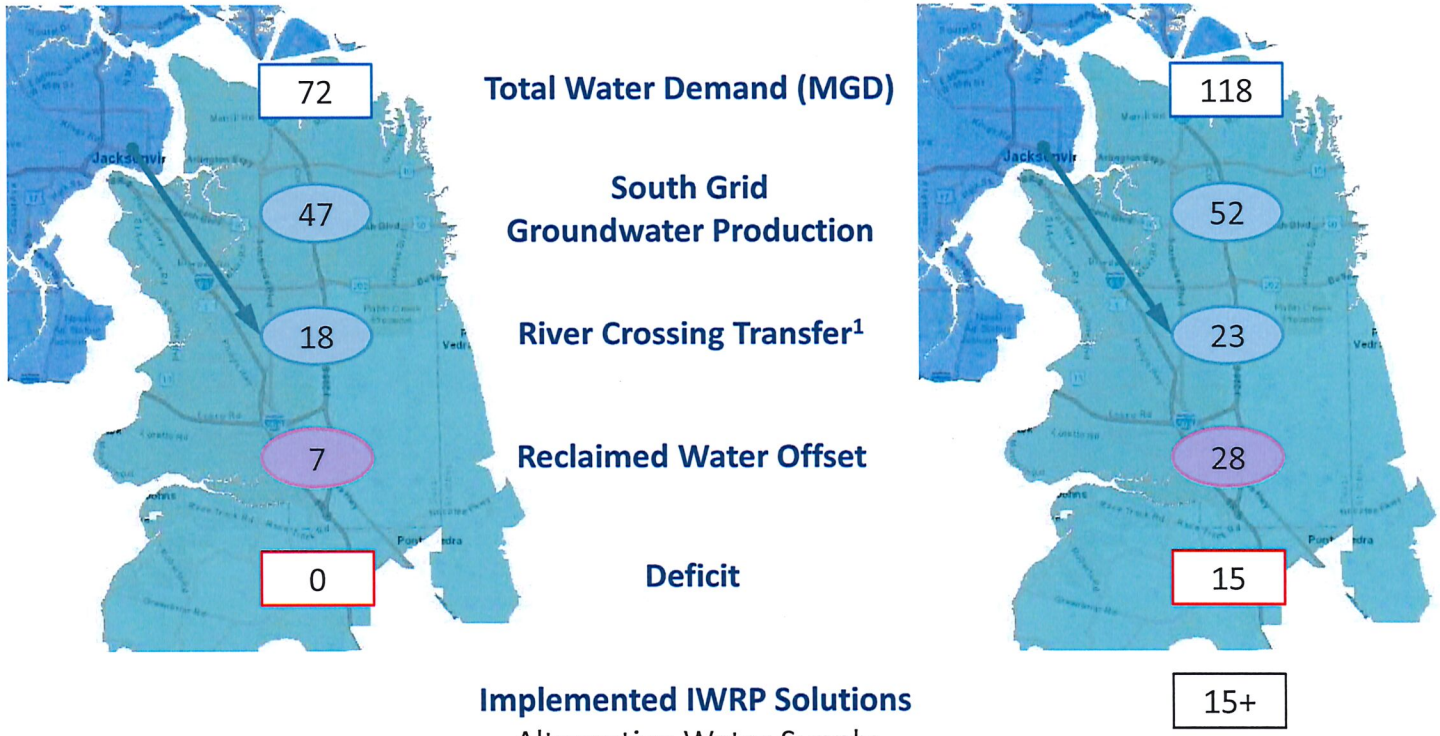


Water system supply outlook challenge

Expand on water assumptions?

South Grid Groundwater Production was approximately 75 MGD prior to 2011

2011 CUP reduced South Grid allocation to 52 MGD

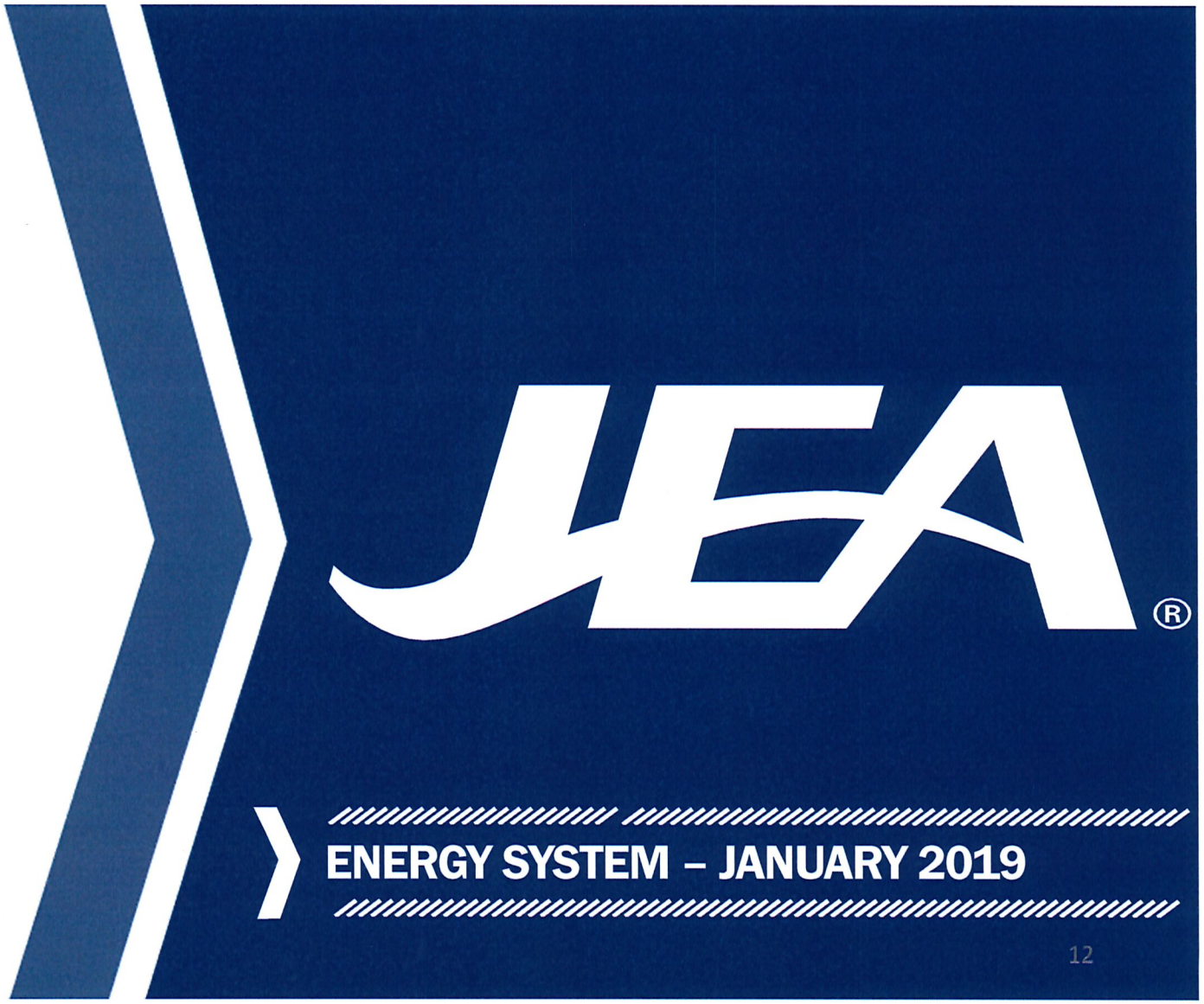


Implemented IWRP Solutions
Alternative Water Supply
Demand Side Management
Etc.

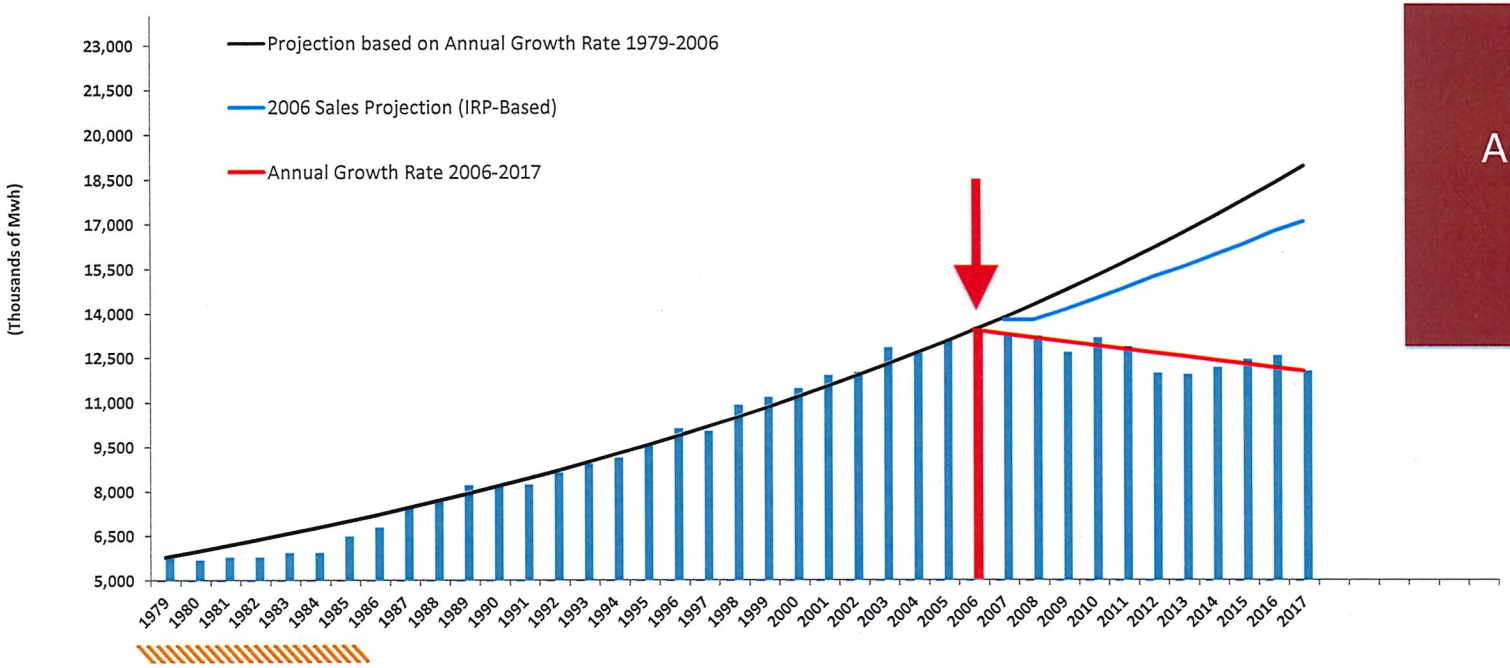
JANUARY 2019

Water Sustainability

Energy System Projections



History illustrates that changing market conditions can quickly alter sales projections



Include dollars
Add # of customers
Add jobs

- In **2006,** we forecasted to sell 17,000 GWh
- In 2017, and we ended FY at 12,000 GWh
- 30% lower sales in 2017 than forecasted back in 2006

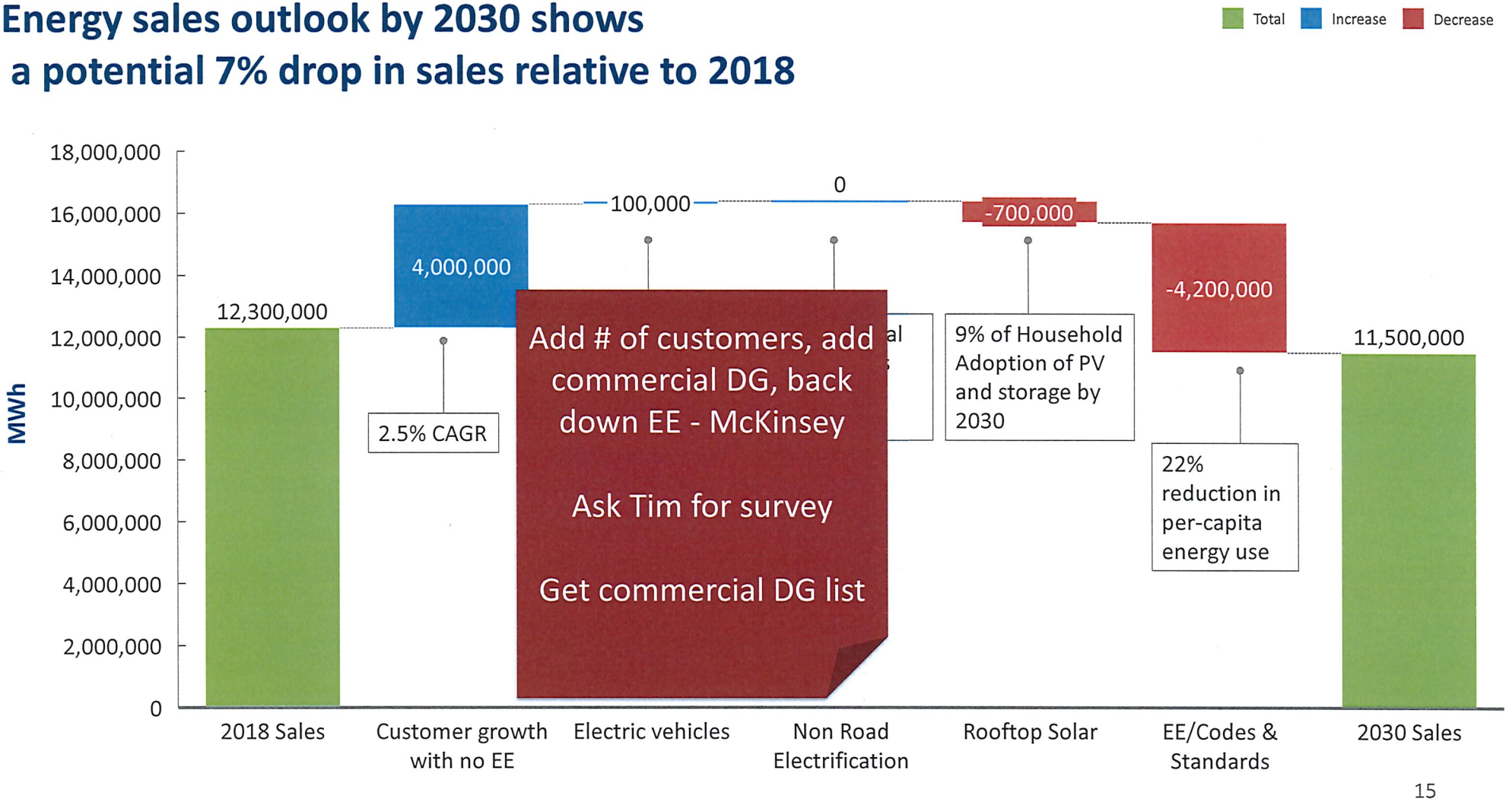
JEA's demand forecast is driven by trends affecting utilities nationwide

	National trends	Assumptions used for JEA
Electric vehicles (EV)	• EV adoption is growing steadily in the US, with 200k EVs[1] on the road in 2017 • Over **2M EVs** are expected on the road by 2030, constituting **7-12% of light duty vehicles**	• **3.5% of cars on the road expected to be EV's by 2030 (30K total)** driving **95k MWh** of increased energy sales
Distributed generation (solar)	• There are **60 GW of solar** installed in the US (as of December 2018); forecasted to grow to over 100 GW by 2021 • Distributed solar accounts for ~**40% of installed solar capacity** in the US (half of which residential), and residential is expected to outpace large-scale growth	• Solar+storage becomes cost effective in 2023, driving 9% of residential customers to adopt by 2030, offsetting **700k MWh** of energy sales
Energy efficiency & new technology adoption	• Energy efficiency has been a major driver of decreased energy sales in the past decades; improvements since 2000 led to a **10% reduction in US energy expenditures and $140 energy savings per capita** • **Efficiency is expected to continue to improve as key energy-saving upgrades have low penetration today** (e.g. heat pump water heaters)	• New home tech upgrades and continuation of service territory trends drive **22% reduction in residential sales per capita** from 2018-30 Illustrate impacts to $

1 "EV" includes PHEV and BEV

Source: McKinsey automotive forecast, SEIA, EIA, Edison Foundation

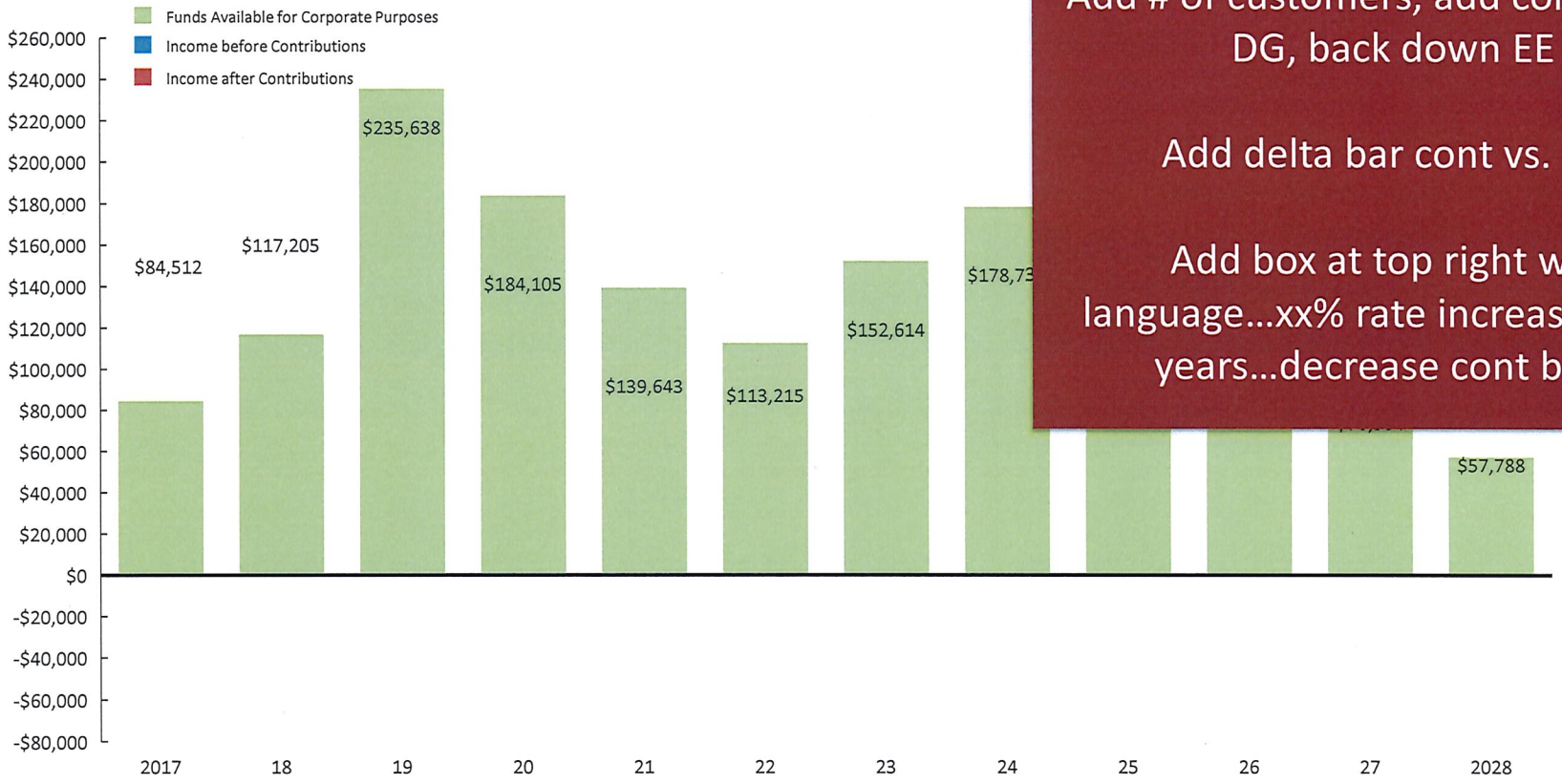
Energy sales outlook by 2030 shows a potential 7% drop in sales relative to 2018



Add slide with case studies from other fixed cost busineses/Netflix/other utilities - McKinsey

Add slide with levers and what moves/rates/payback/affordability – McKinsey?

Electric system financial outlook challenge



Edit chart with updated numbers
Add # of customers, add commercial DG, back down EE

Add delta bar cont vs. FCF

Add box at top right with language…xx% rate increase over x years…decrease cont by $x

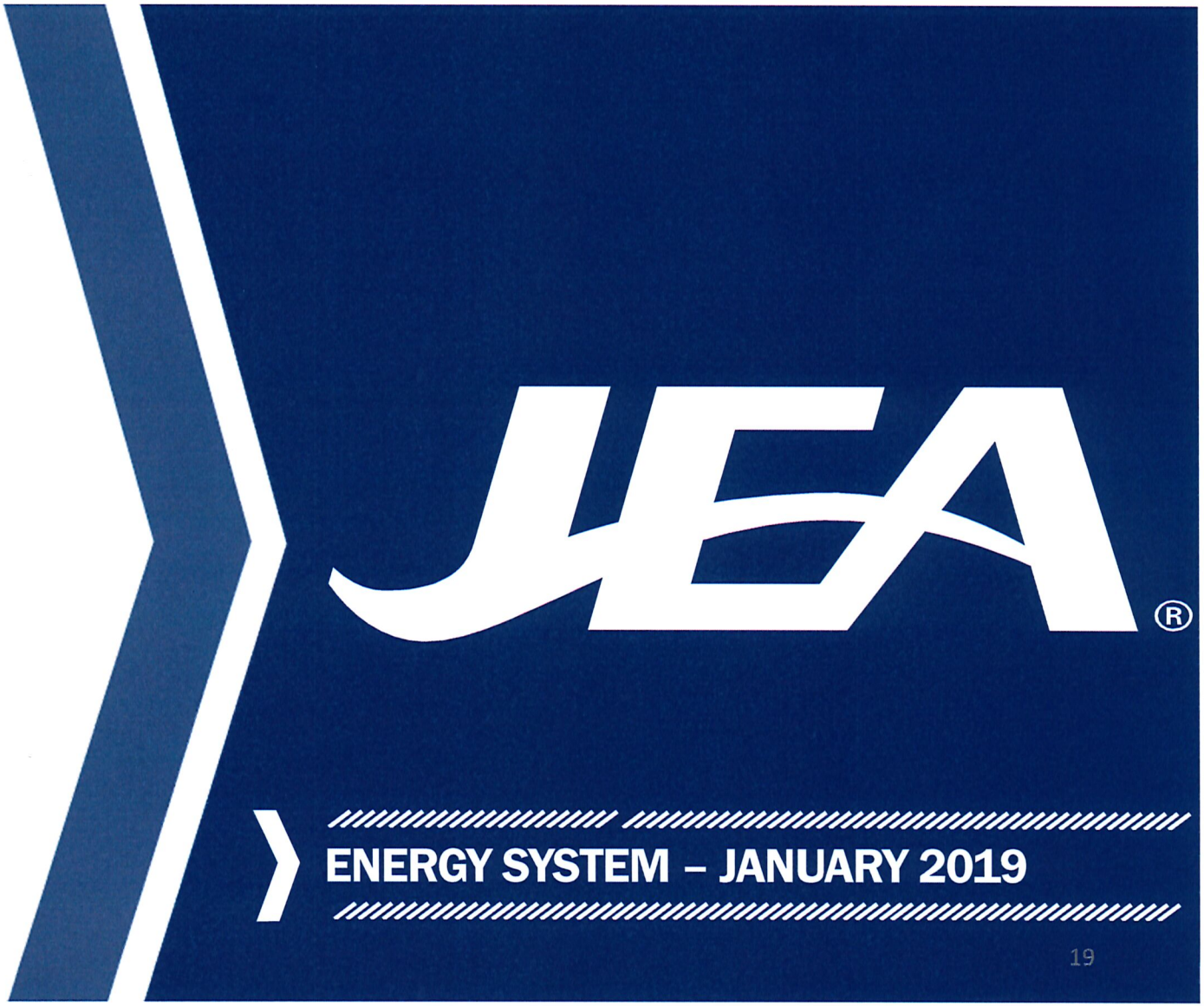
Reduced energy sales forecast drives a challenging financial outlook for JEA by 2030
if JEA were to take no action

While the call to action is clear, JEA has several potential responses:

- JEA can deploy ... rove its financial outlook and succeed at all strategic ... to environmental stewardship
- These respons ... **business**, e.g. by expanding existing electrification ... f **operational performance**; and **evolving the b** ... enefit from DER and other trends
- These and oth ... A moves into the full strategic planning effort

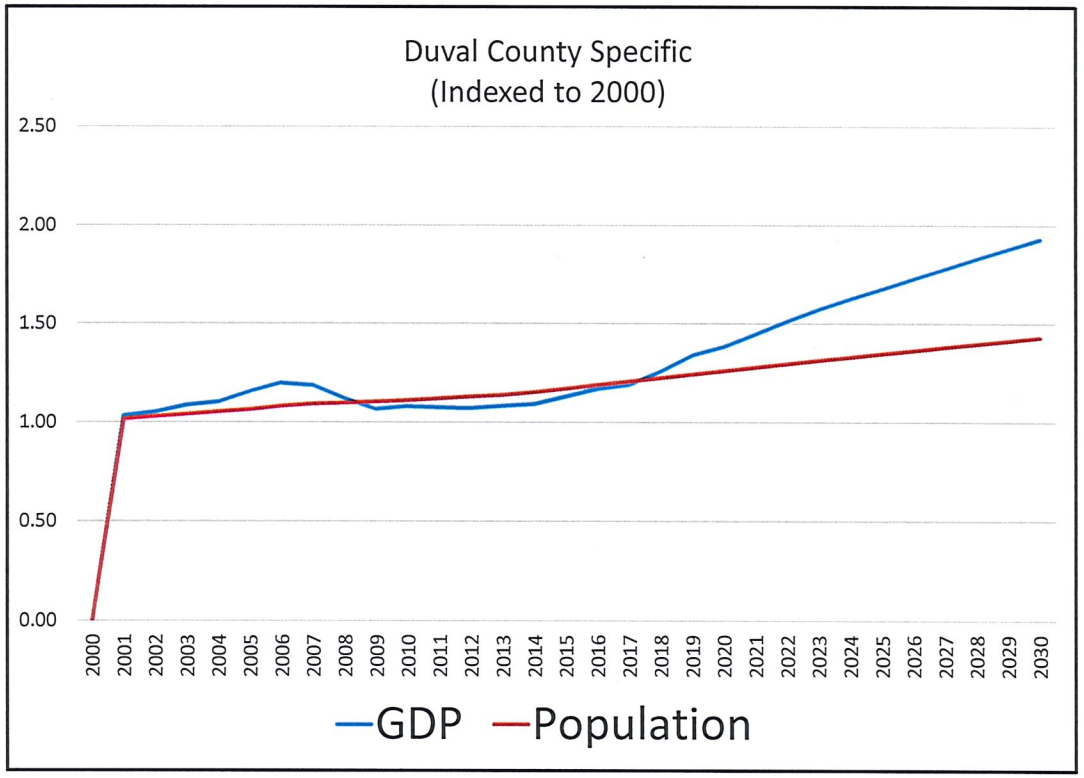
Change verbiage, "the time is now"...etc.

Supplemental Information



Customer growth likely to continue in the foreseeable future

Customer growth projections considers the U.S. Census Bureau (BOC): Population Estimates, Projections; Moody's Analytics Estimated and Forecasted for Duval County

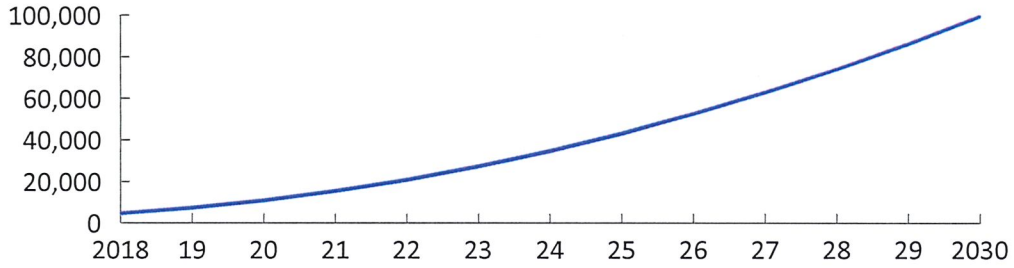


JANUARY 2019

Customer Growth

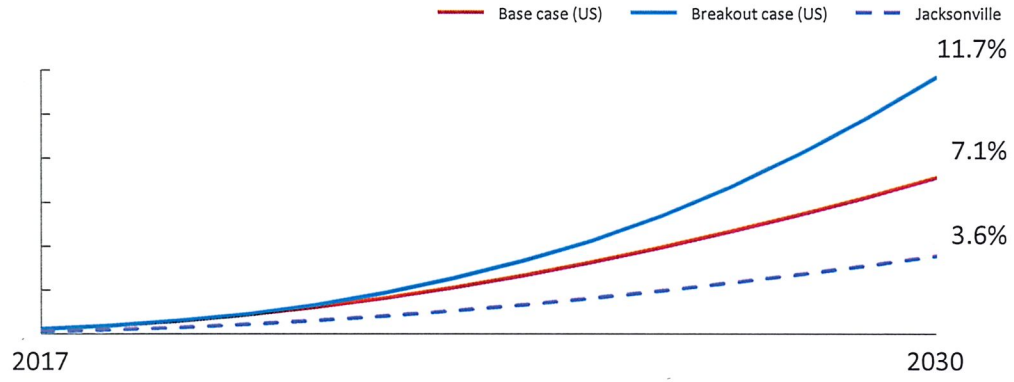
30k EVs expected in in JEAs territory by 2030 based on EV modeling and penetration today

Energy added by EV fleet, MWh



100k MWh in energy sales in 2030 because 31k EVs are added to Jacksonville fleet, constituting 3.6% of light duty vehicles

EV fleet penetration forecasts, %



Base case 2030 figures

- 864k — Vehicles in Jacksonville
- × 7% — EV penetration in US
- × 50% — Current Jacksonville rate relative to US average
- = 31K — EV sales by 2030
- × 3.2 — MWh consumed per vehicle
- = 99K — MWh energy sales

Base case 2030 assumptions

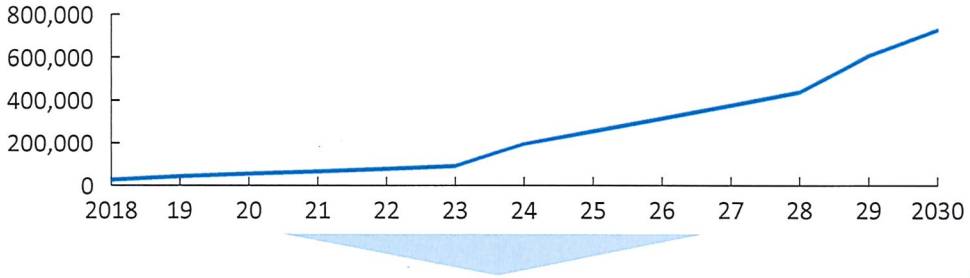
- Vehicles projected in Jacksonville based on current FHSMV figures and economic projections
- Forecast of EV growth in US
- Proportion of EVs in Jacksonville remains consistently half of US average
- Vehicles consume 3.7 MWh/yr today, gaining annual efficiencies of 1%

Source: Federal Reserve income per capita data; McKinsey Automotive practice TCO-based forecasting models, Florida Highway Safety and Motor Vehicles , Internal forecasts

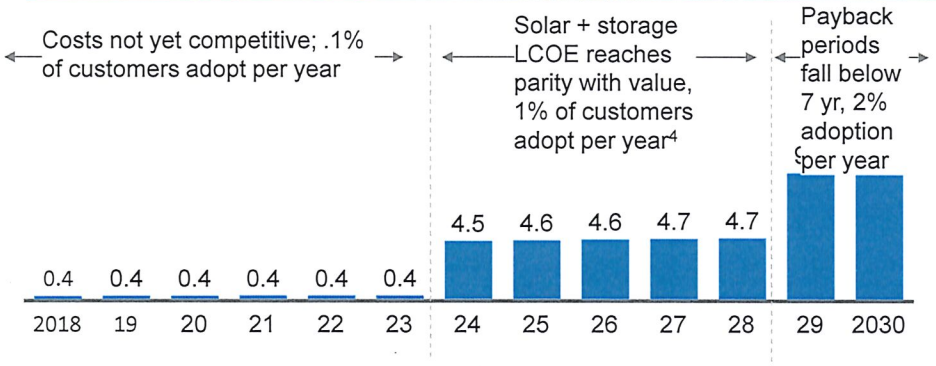
Solar reaching economic parity could lead to significant reduction in energy sales

- 730k MWh in energy sales reduced by 2030, with 45k homes and 1% of C&I load installing DG solar + storage by 2023
- Solar adoption is assumed to be a function of economic parity; once solar makes economic sense, uptake is expected to increase significantly

Energy sales lost to DG solar + storage, MWh



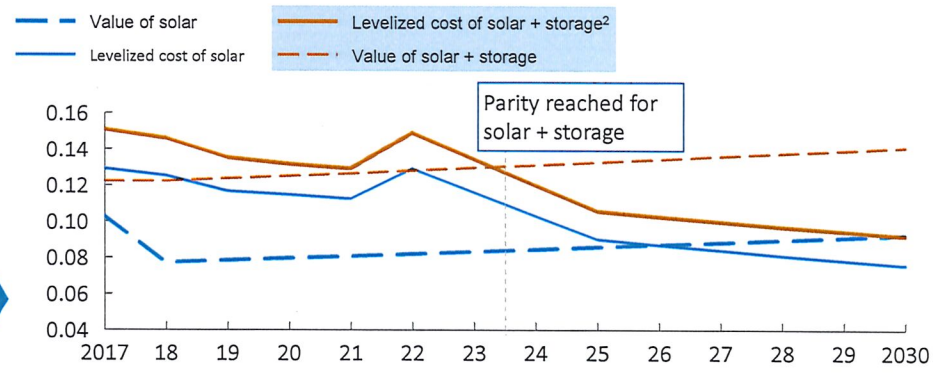
New residential solar + storage customers, thousand households



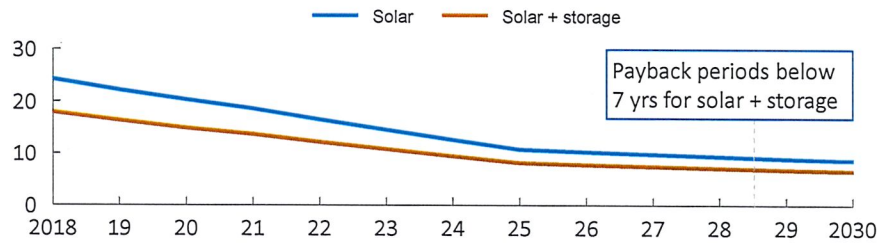
- Solar + storage has a higher value proposition for JEA customers than solar alone
- Though system costs are higher, value increases as well,[3] driving shorter payback periods

Cost and value of solar for JEA customers[1], $/kWh

Currently modeled



Simple payback period for JEA customers' systems,[3] years



1 20 year system life; 7% discount rate; 17% capacity factor; assumes 5-10kW(DC) system size; 2% rate increase YoY based on trends in Europe and Australia

2 Assumes more aggressive solar soft cost declines post-2021 as ITC is phased out; cost reductions appear viable

3 Considers backup as economic value towards payback

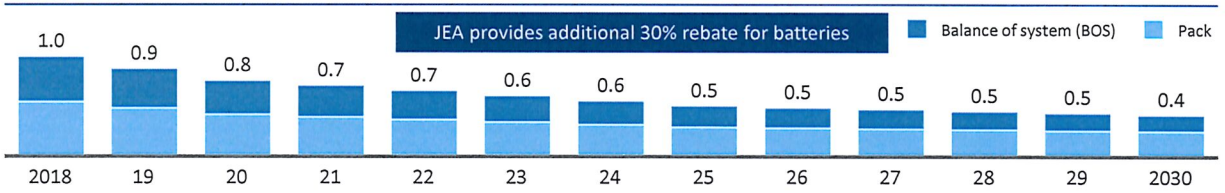
4 Uptake in line with post-parity adoption in other states (e.g., HI, CA)

Source: Sigrin and Drury, Diffusion into New Markets: Economic Returns Required by Households to Adopt Rooftop Photovoltaics, NREL

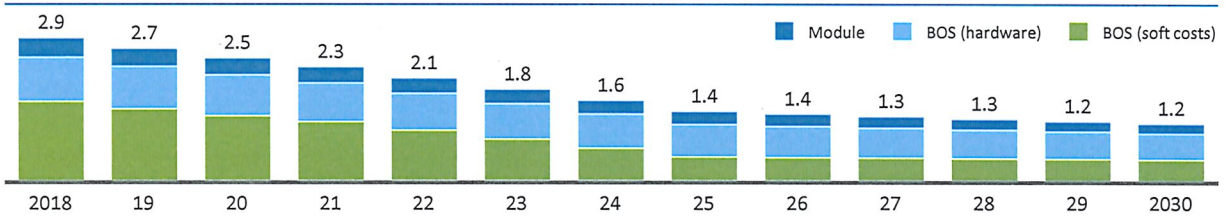
Economic parity driven by decreasing soft costs and potential added value of storage

Both solar and battery costs decline over the forecast period...

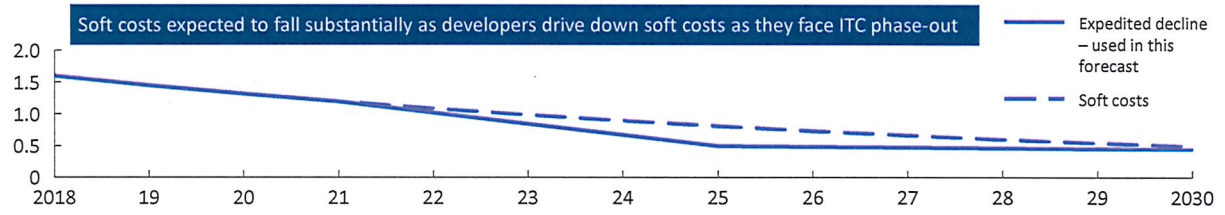
Battery costs, $/W



Solar costs, $/W

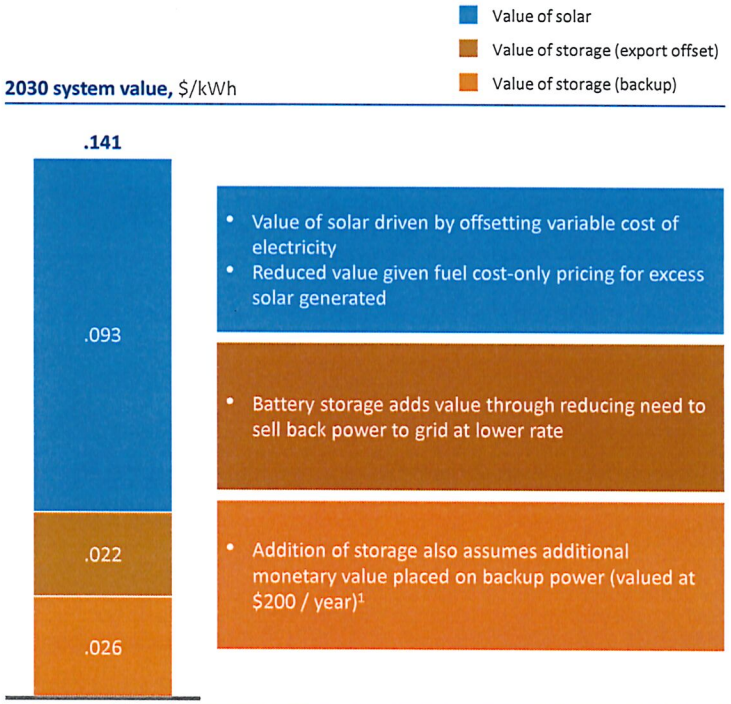


Solar soft costs, $/W



...While Batteries add value to system due to willingness to pay for backup storage and reduced need to export energy

2030 system value, $/kWh



Storage adds incremental value as part of home DG solution, particularly when backup power is a major consideration

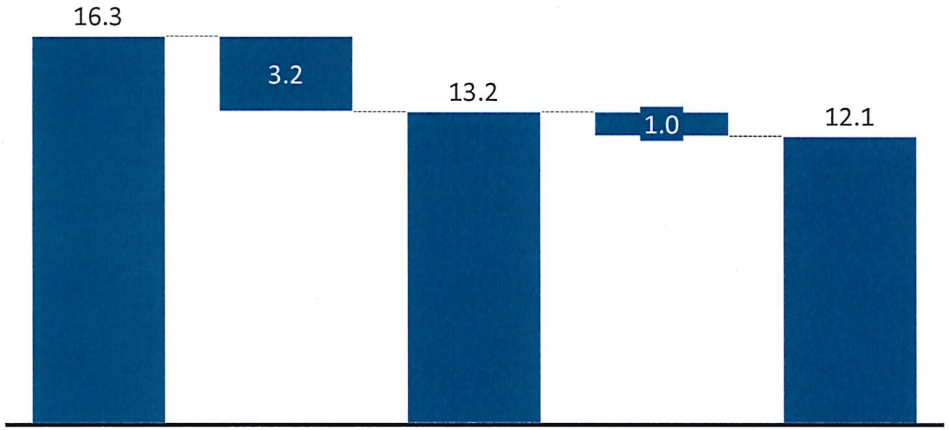
1 Battery economics assume consistent willingness to pay premium for backup power in region

Source: McKinsey, SEIA

Energy efficiency momentum is the largest driver of energy sales reductions, consistent with US utility trends

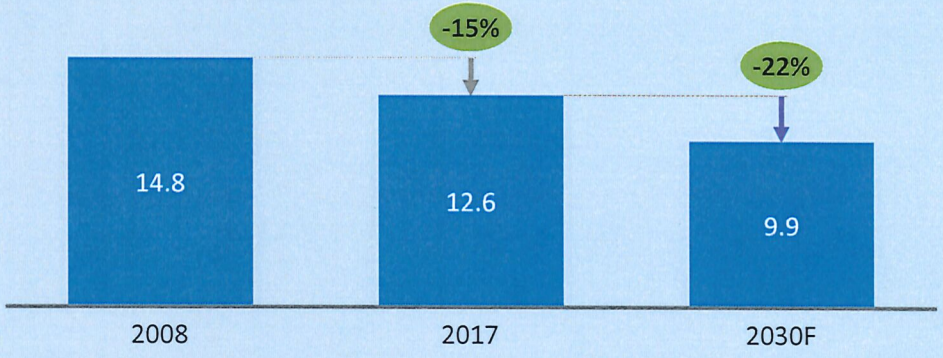
Discussed in additional detail on following page

2030 energy sales (independent of solar, EV), TWh

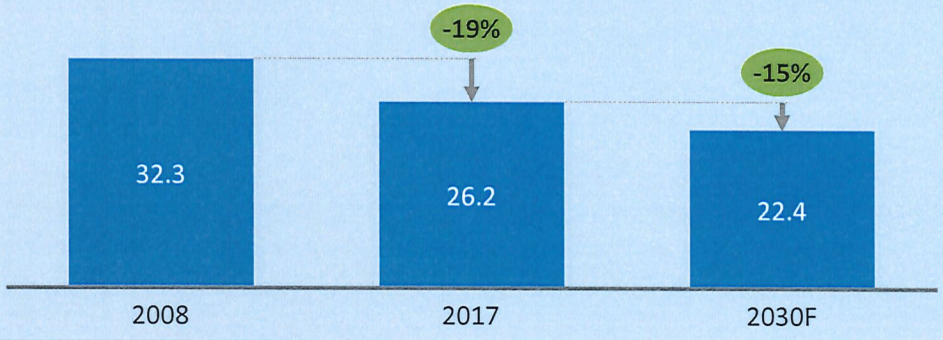


- Organic EE includes continued adoption of energy efficient products as these products become more efficient, as well as the continuation of general building trends, e.g. gas connections
- Additional tech includes higher uptake of products and active decisions to purchase more economic solutions, e.g. heat pump water heaters

Residential consumption per capita, kWh/customer



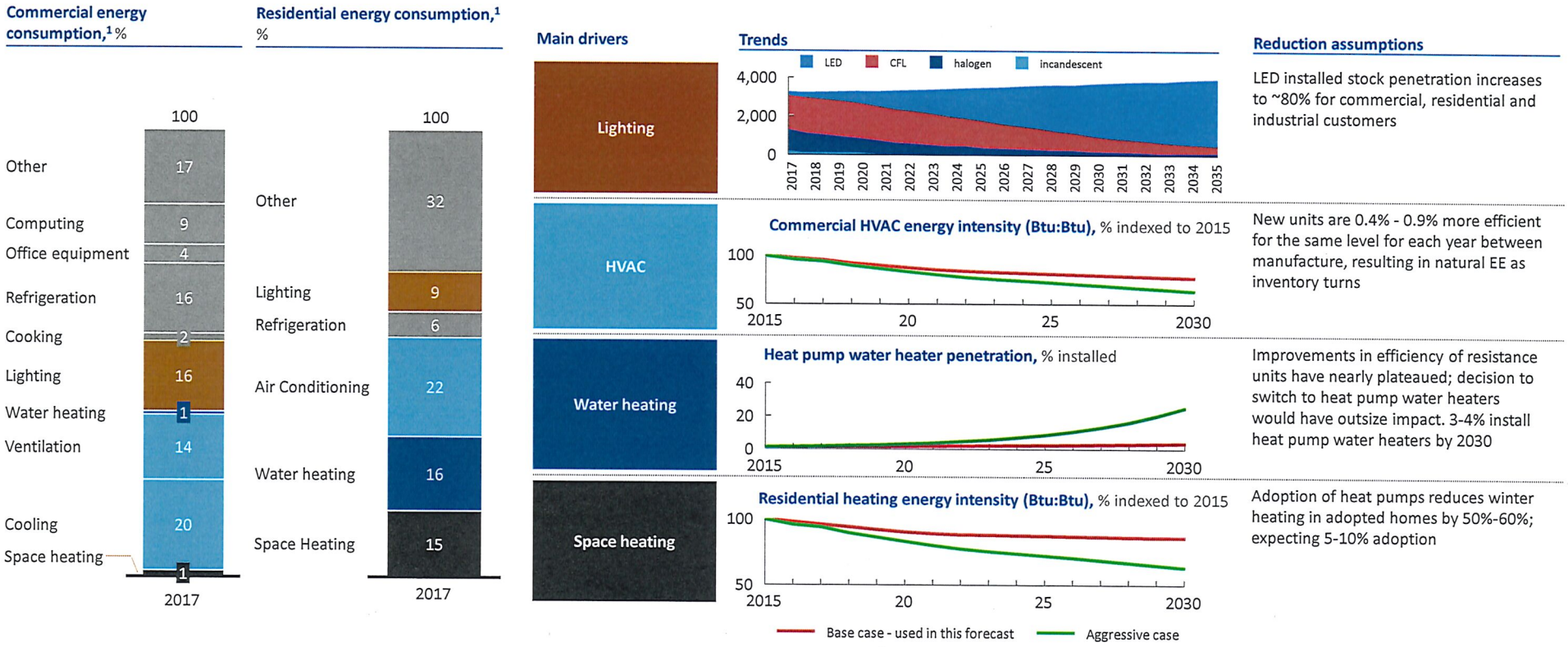
Customer consumption per capita (all customers included)[1], kWh/customer



1 Includes Residential, Commercial, Industrial customers; C&I customer characteristics vary significantly

Source: JEA forecast, PowerIQ

Natural EE improvements with new products will drive up EE; consumer choices regarding new water and space heating technologies can have outsize impact on efficiency

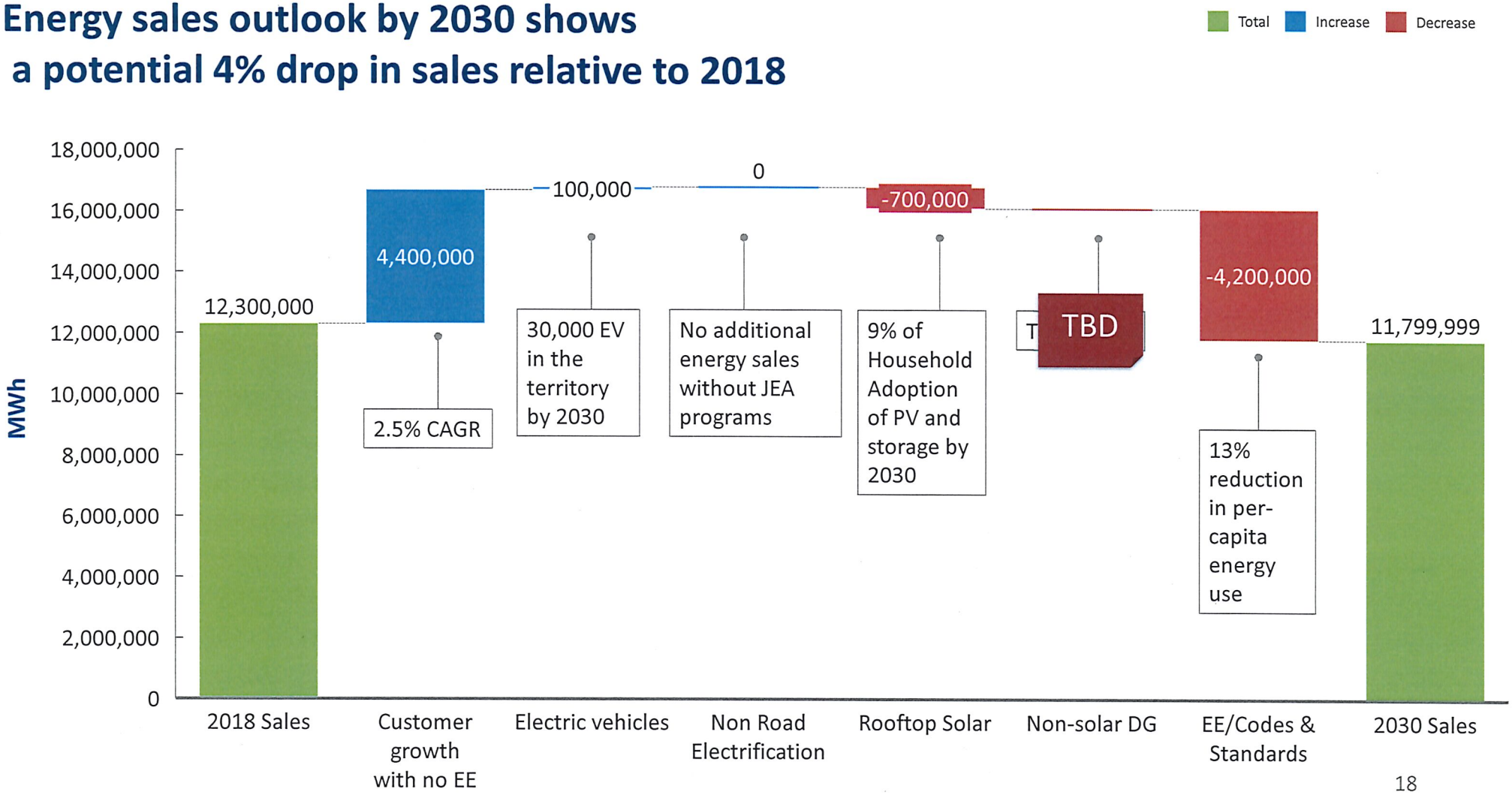


1 ECS breakdown, South Atlantic, %

Source: EIA RECS 2015 and CBECS 2012, Pathways database, McKinsey analysis

The following "Baseline Conversation" financial projections are presented solely for JEA Board of Directors planning and action. They are not a projection of future financial performance and, as such, should not be relied upon by present or prospective JEA bond investors to purchase or sell any security or to make an investment decision. The projections are merely a mathematical representation of a hypothetical case for change. Actual results are likely to differ materially from this business case. Use of this presentation not in its entirety could result in material financial harm to the company.

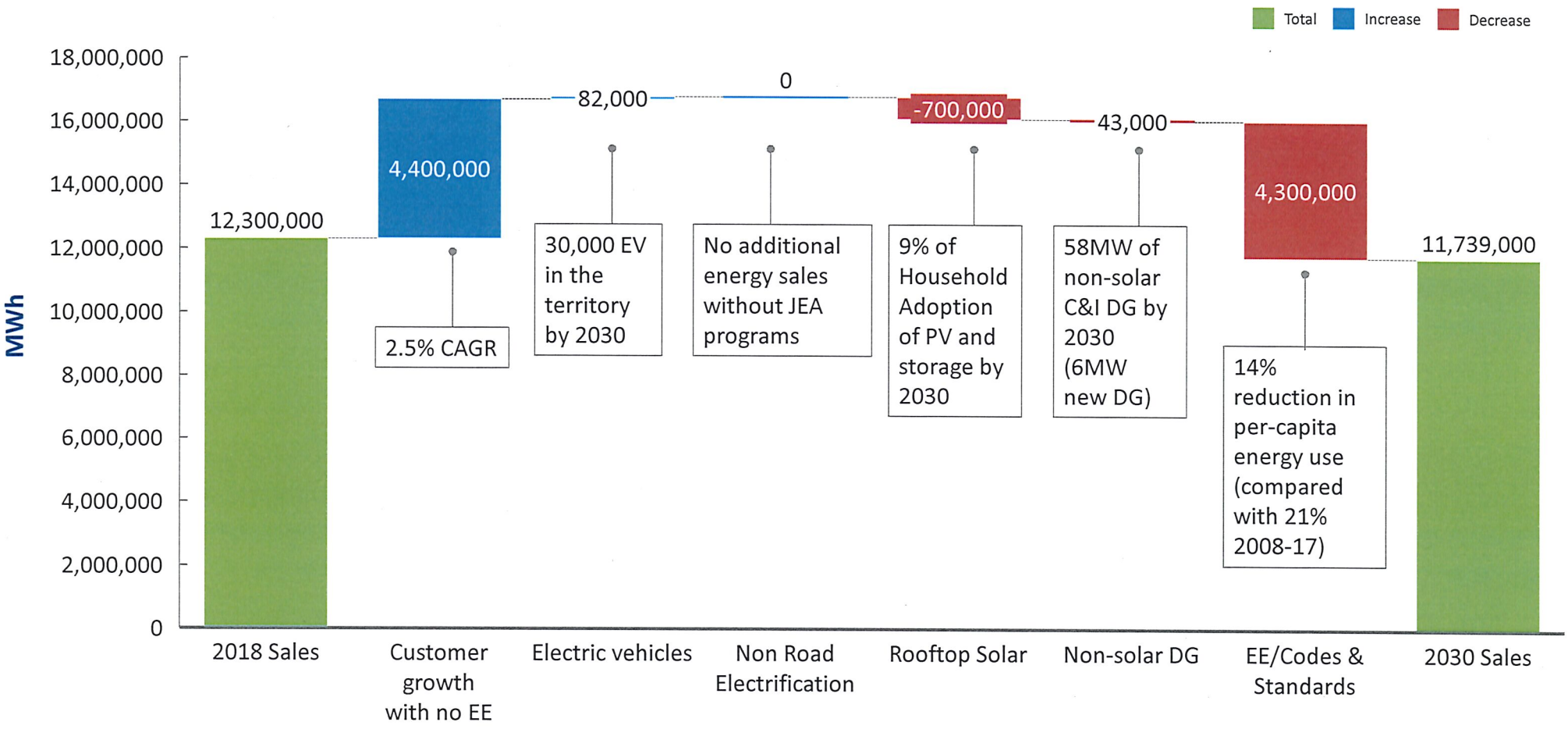
Energy sales outlook by 2030 shows a potential 4% drop in sales relative to 2018



The following "Baseline Conversation" financial projections are presented solely for JEA Board of Directors planning and action. They are not a projection of future financial performance and, as such, should not be relied upon by present or prospective JEA bond investors to purchase or sell any security or to make an investment decision. The projections are merely a mathematical representation of a hypothetical case for change. Actual results are likely to differ materially from this business case. Use of this presentation not in its entirety could result in material financial harm to the company.

Energy Sales Outlook by 2030

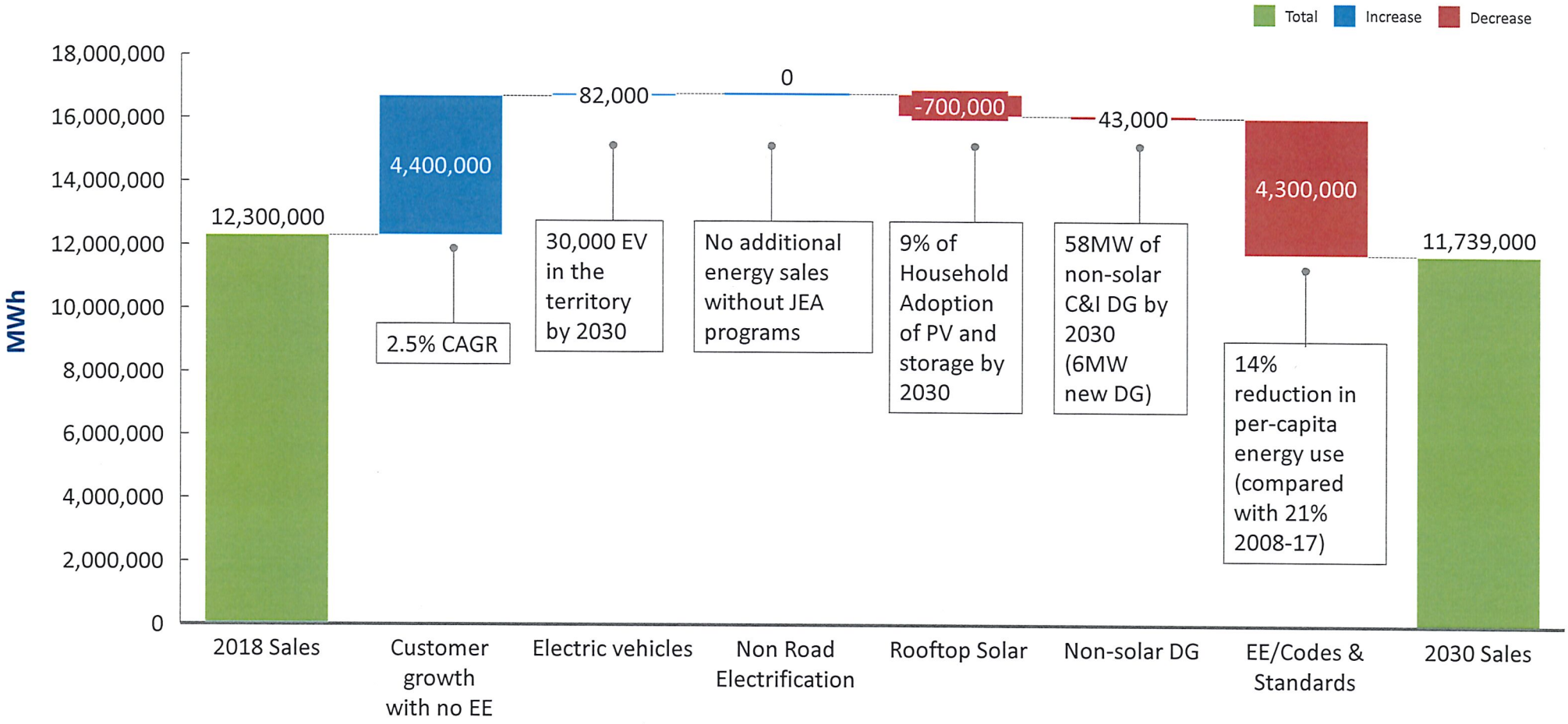
There's a potential 4% drop in sales relative to 2018



The following "Baseline Conversation" financial projections are presented solely for JEA Board of Directors planning and action. They are not a projection of future financial performance and, as such, should not be relied upon by present or prospective JEA bond investors to purchase or sell any security or to make an investment decision. The projections are merely a mathematical representation of a hypothetical case for change. Actual results are likely to differ materially from this business case. Use of this presentation not in its entirety could result in material financial harm to the company.

Energy Sales Outlook by 2030

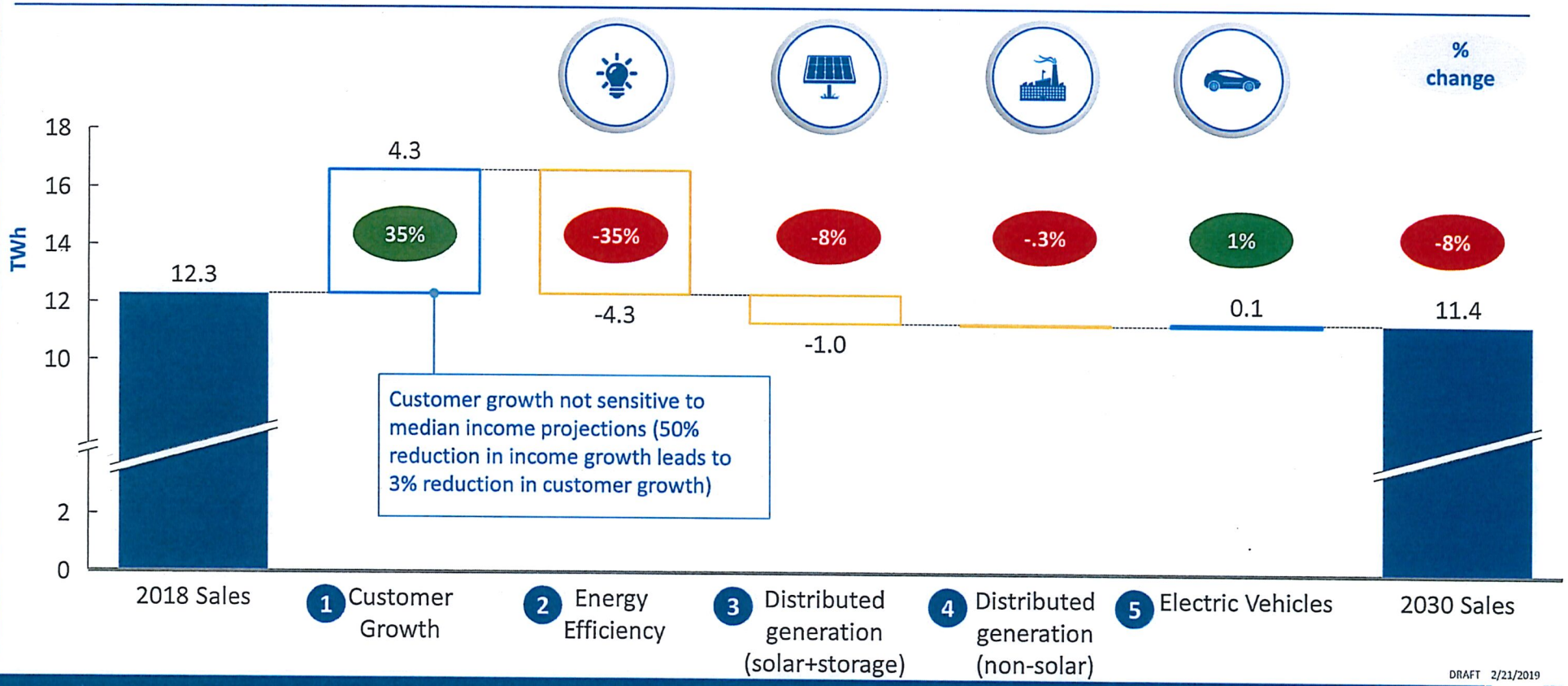
There's a potential 4% drop in sales relative to 2018



The following "Baseline Conversation" financial projections are presented solely for JEA Board of Directors planning and action. They are not a projection of future financial performance and, as such, should not be relied upon by present or prospective JEA bond investors to purchase or sell any security or to make an investment decision. The projections are merely a mathematical representation of a hypothetical case for change. Actual results are likely to differ materially from this business case. Use of this presentation not in its entirety could result in material financial harm to the company.

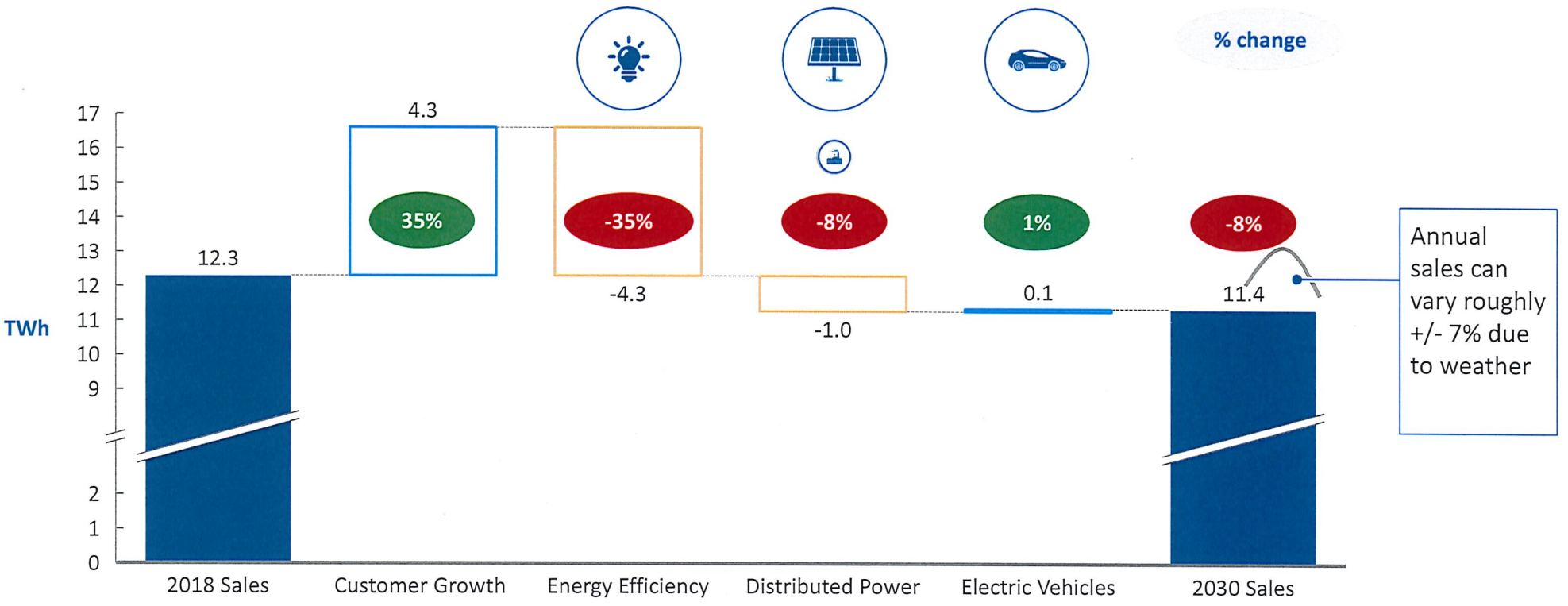
Energy sales forecast: Energy efficiency and solar will drive down JEA's sales by 8% through 2030 despite a growing customer base

2030 JEA projected energy sales, TWh



JEA's sales expected to fall by 8+% through 2030 despite a growing customer base

2030 JEA projected energy sales, TWh

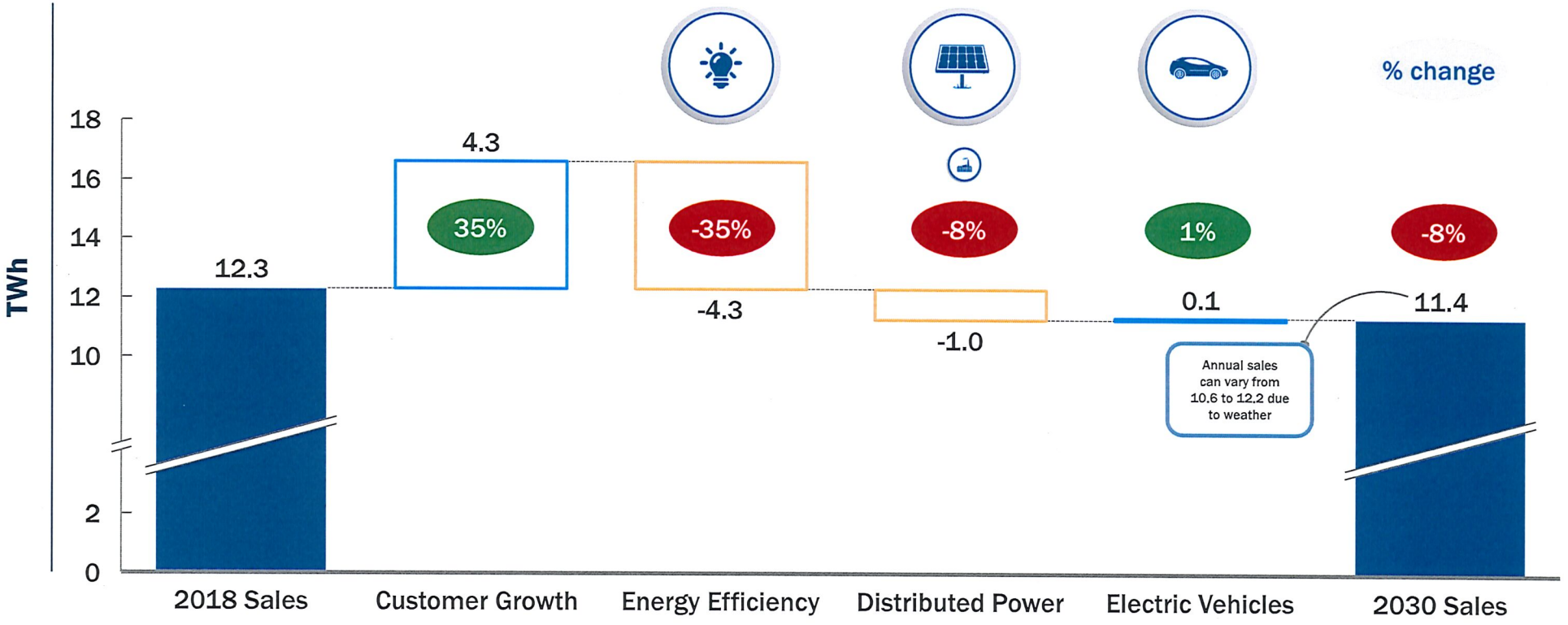


SOURCE: Moody's, JEA forecasts, EPA, GTM, 2018 Storage cost model, 2018 EV growth model


JEA

STATUS QUO ENERGY SALES PROJECTION

By 2030 JEA's Customers May Likely Increase 16% and Energy Sales May Likely Fall by 8%



SOURCE: Moody's, JEA forecasts, EPA, GTM, 2018 Storage cost model, 2018 EV growth model

Ten Year Site Plan Figures

	Year	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Residential	GWh sales	5,307	5,319	5,747	5,237	4,880	4,852	5,162	5,197	5,351	5,199	5,224	5,262	5,285	5,302	5,326	5,356	5,384	5,417	5,459	5,509
Residential	Avg # of customers	365,363	365,872	368,111	369,051	369,761	372,430	377,326	383,998	398,387	404,806	410,703	417,700	424,293	430,780	437,294	443,893	450,362	456,598	462,573	468,265
Residential	Growth		0.1%	0.6%	0.3%	0.2%	0.7%	1.3%	1.8%	3.7%	1.6%	1.5%	1.7%	1.6%	1.5%	1.5%	1.5%	1.5%	1.5%	1.4%	1.3%	1.2%
Residential	Avg kwh / customer	15,072	14,506	14,448	15,572	14,163	13,102	12,860	13,443	13,431	12,842	12,721	12,598	12,455	12,307	12,180	12,066	11,954	11,864	11,802	11,766
Commercial	GWH sales	4,040	4,024	4,071	3,927	3,852	3,777	3,882	4,001	4,064	4,011	4,071	4,103	4,122	4,148	4,173	4,195	4,214	4,233	4,251	4,269
Commercial	Avg # of customers	44,489	45,093	45,748	46,192	46,605	47,127	47,691	49,364	51,441	51,970	52,482	53,134	53,775	54,412	55,041	55,662	56,275	56,884	57,489	58,089
Commercial	Avg kwh / customer	98,887	89,591	87,957	88,137	84,255	81,735	79,204	78,642	78,994	77,176	77,561	77,217	76,646	76,237	75,812	75,369	74,886	74,407	73,942	73,485
Industrial	GWH sales	2,948	2,643	2,720	2,682	2,598	2,589	2,564	2,579	2,457	2,532	2,612	2,653	2,679	2,700	2,723	2,743	2,760	2,772	2,783	2,793
Industrial	Avg # of customers	225	231	226	223	215	218	219	215	202	202	201	199	199	199	199	199	199	199	199	199
Industrial	Avg kwh / customer	11,671,666	12,776,809	11,692,820	12,192,004	12,468,380	11,906,357	11,812,944	11,951,824	12,159,793	12,510,027	12,993,687	13,333,588	13,462,838	13,570,053	13,684,532	13,784,130	13,870,624	13,929,925	13,984,670	14,032,692
C&I	Avg # of customers	44,714	45,324	45,974	46,415	46,820	47,345	47,910	49,579	51,643	52,172	52,683	53,333	53,974	54,611	55,240	55,861	56,474	57,083	57,688	58,288
C&I	Growth		1.4%	1.4%	1.0%	0.9%	1.1%	1.2%	3.5%	4.2%	1.0%	1.0%	1.2%	1.2%	1.2%	1.2%	1.1%	1.1%	1.1%	1.1%	1.0%

Year	R Sales	R # cust	R Avg/cust	C Sales	C # cust	C Avg/cust	I Sales	I # cust	I Avg/cust
2008	5,307	365,363	15,072	4,040	44,489	98,887	2,948	225	11,671,666
2009	5,319	365,872	14,506	4,024	45,093	89,591	2,643	231	12,776,809
2010	5,747	368,111	14,448	4,071	45,748	87,957	2,720	226	11,692,820
2011	5,237	369,051	15,572	3,927	46,192	88,137	2,682	223	12,192,004
2012	4,880	369,761	14,163	3,852	46,605	84,255	2,598	215	12,468,380
2013	4,852	372,430	13,102	3,777	47,127	81,735	2,589	218	11,906,357
2014	5,162	377,326	12,860	3,882	47,691	79,204	2,564	219	11,812,944
2015	5,197	383,998	13,443	4,001	49,364	78,642	2,579	215	11,951,824
2016	5,351	398,387	13,431	4,064	51,441	78,994	2,457	202	12,159,793
2017	5,199	404,806	12,842	4,011	51,970	77,176	2,532	202	12,510,027
2018	5,224	410,703	12,721	4,071	52,482	77,561	2,612	201	12,993,687
2019	5,262	417,700	12,598	4,103	53,134	77,217	2,653	199	13,333,588
2020	5,285	424,293	12,455	4,122	53,775	76,646	2,679	199	13,462,838
2021	5,302	430,780	12,307	4,148	54,412	76,237	2,700	199	13,570,053
2022	5,326	437,294	12,180	4,173	55,041	75,812	2,723	199	13,684,532
2023	5,356	443,893	12,066	4,195	55,662	75,369	2,743	199	13,784,130
2024	5,384	450,362	11,954	4,214	56,275	74,886	2,760	199	13,870,624
2025	5,417	456,598	11,864	4,233	56,884	74,407	2,772	199	13,929,925
2026	5,459	462,573	11,802	4,251	57,489	73,942	2,783	199	13,984,670
2027	5,509	468,265	11,766	4,269	58,089	73,485	2,793	199	14,032,692
	5.5%	14.0%	-7.5%	4.9%	10.7%	-5.3%	6.9%	-1.0%	8.0%

Rate hike required	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	
	0.0%	0.0%	0.0%	22.5%	0.0%	3.5%	-13.0%	-2.0%	8.0%	3.0%	1.5%	2.0%	
1	1.00	1.00	1.00	1.23	1.23	1.27	1.10	1.08	1.17	1.20	1.22	1.245	
1	1.019	1.037	1.057	1.076	1.096	1.116	1.137	1.158	1.179	1.201	1.223	1.246	Solve for linear growth

From: McInall, Steven G. - VP & Chief Energy & Water Planning <mcinsg@jea.com>
Sent: Wednesday, December 4, 2019 6:03 PM
To: 'Andrew Grass'
Subject: FW: McKinsey Strategic Plan - Complete Doc - REVIEW
Attachments: 1126 2030 Strategy Document_vF.pdf

Steve McInall. P.E.
Vice President, Energy and Water Planning
Direct: (904) 665-4309
Mobile: (904) 312-0739

From: Durham, Russell J. - Manager, Electric T&D Planning <DurhRJ@jea.com>
Sent: Wednesday, December 4, 2019 3:32 PM
To: McInall, Steven G. - VP & Chief Energy & Water Planning <mcinsg@jea.com>
Cc: Coarsey, John B. - Director, Electric T & D Planning <CoarJB@jea.com>; Fowler, Robert E. <FowlRE@jea.com>
Subject: FW: McKinsey Strategic Plan - Complete Doc - REVIEW

Steve,

My comments/observations. Robert had a significant comment for slide #63. The others are very minor.

Slide #11: the two bullets about EV charging seem to contradict each other at a high level. One says "Charge whenever"; the other implies "only charging when good for JEA".
Slide #12: footnote 4 shown on bottom left chart but the actual footnote is missing.
Slide #32: No reference to adjusting rate structure to encourage shifting EV charging away from peak (ties to slide #11).
Slide #63: [From Robert Fowler] the numbers for this OH to UG Conversion slide came from an analysis we did in the past. Most numbers matched but some numbers are wrong. See the two pictures below: Also, real estate costs not included.

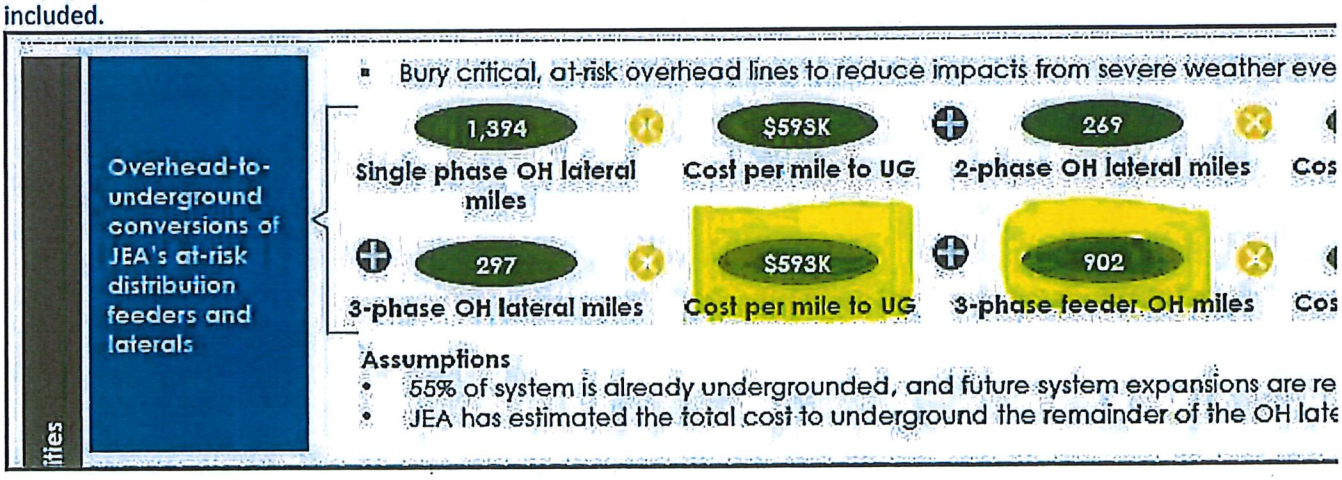


EXHIBIT 12 McInall 7/8/20
PENGAD 800-631-6989

Full Overhead System Underground			
Overhead Segment	**Distance (Miles)**	**Cost/Mile**	**Total Cost**
1 Phase Lateral	1,394	$593,074	$826,745,156
2-Phase Lateral	269	$760,079	$204,461,251
Three-Phase Lateral	297	$822,261	$244,211,517
Three-Phase Feeder	1,061	$1,670,373	$1,772,265,753
Real Estate, Easements, Permits	3,021	$26,142	$78,974,982
Sub-Total #1 (2017 dollars)			**$3,126,658,659**
Sub-Total #1 (PV)			$4,200,724,453

Slide #65: at the bottom "Source real-time data on electric current, voltage, and Var levels to drive..." [added Var data]
Slide #73: Seems very optimistic.
Slide #87: "Duvall" misspelled
Slide #89 & 90: missing extra costs to add or prematurely upgrade existing transformers serving these new EV chargers and some likely reconductor work. Unfortunately I don't know those costs.

Russ Durham
Manager, Electric T&D Planning
Direct: (904) 665-7108

From: Coarsey, John B. - Director, Electric T & D Planning <CoarJB@jea.com>
Sent: Monday, December 02, 2019 9:32 AM
To: Durham, Russell J. - Manager, Electric T&D Planning <DurhRJ@jea.com>; Lundeen, Timothy M. - Manager System Analysis <lundtm@jea.com>
Subject: FW: McKinsey Strategic Plan - Complete Doc - REVIEW

John B. Coarsey, P.E.
Director, Energy Planning
Direct: (904) 665-6739
Fax: (904) 665-7263

From: Coarsey, John B. - Director, Electric T & D Planning
Sent: Monday, December 2, 2019 8:08 AM
To: McInall, Steven G. - VP & Chief Energy & Water Planning <mcinsg@jea.com>; Pope, Jordan A - Dir Economic Development and Real Estate <popeja@jea.com>; Zammataro, Robert J. (Rob) - Dir W/WW Planning & Development <zammrj2@jea.com>
Subject: RE: McKinsey Strategic Plan - Complete Doc - REVIEW

This entire PDF, having been for the most part crafted with no input from my team seems to be the work of inexperienced consultants and financial people. This entire report seems to be more of a wish list put together by people who have little or no understanding of the critical technical hurdles most of this involves. The logic or lack thereof of comparing of JEA with other utilities that are completely different and then drawing comparisons that by their nature are not completely accurate seems to be a recurring theme in this report. Comments below. I am forwarding to Matt and Russ to see if I am missing something.

John

John B. Coarsey, P.E.

Director, Energy Planning
Direct: (904) 665-6739
Fax: (904) 665-7263

-----Original Message-----
From: McInall, Steven G. - VP & Chief Energy & Water Planning <mcinsg@jea.com>
Sent: Friday, November 29, 2019 6:24 PM
To: Coarsey, John B. - Director, Electric T & D Planning <CoarJB@jea.com>; Pope, Jordan A - Dir Economic Development and Real Estate <popeja@jea.com>; Zammataro, Robert J. (Rob) - Dir W/WW Planning & Development <zammrj2@jea.com>
Subject: FW: McKinsey Strategic Plan - Complete Doc - REVIEW

Fyi. Hope you had a great Holiday

From: Eads, Shawn W. - VP & Chief Information Officer
Sent: Wednesday, November 27, 2019 4:38 PM
To: (Mgmt - JEA Senior Leadership Team (SLT)
Cc: Aaron Bielenberg; Andrew Grass; Anton Derkach
Subject: McKinsey Strategic Plan - Complete Doc - REVIEW

SLT,

McKinsey has finished their alignment of the 10 year strategic plan and have added all the details they collected and worked with you on for mid-level implementation details. It is now time for us to give these documents a deep scrubbing.

Attached is the complete document. You are more than welcome to review the document in its entirety, but we also have provided a guide below for the pages we definitely need you to dig into and make sure you understand them and can take them forward as we move into the next phases of detailed implementation planning and execution.

McKinsey will be onsite December 2-13 to work with you on any questions you have and any corrections you feel are needed. Post December 13, McKinsey will begin their Light Touch phase through March, which means they will not be onsite daily and will be available through request.

It is our time to take the lead on our plan. Please let me know where I can help you!

Name

Role

Pages

Herschel Vinyard

Chief Administrative Officer

2-43

Lynne Rhode

Chief Legal Counsel

2-43, 77-100, 140-147

Kerri Stewart

Chief Customer Officer

2-43, 55-57, 125-128

Jon Kendrick

CHRO

2-43, 58, 129, 150-155

Steve McInall

Energy and Water Planning

2-43, No ready way to validate numerous statements made in this portion of the work.

62-75, This part of the work compares us and makes recommendations based on other utilities such as Con-Ed. Electric Planning had virtually zero input into this. As such there are several serious flaws. One such flaw calls for conversion of 4 kV. This has been done. What is left is in politically sensitive areas that are heavily treed. The conversion OH to UG is laughable. At the end of the day most of what is suggested can be done but will likely be a t a much higher cost.

77-100, No comments

135-139, They are words but as they say the devil is in the details.

140-147, Same as above

John McCarthy

Chief Supply Chain Officer

2-43, 58-59, 132-134

Shawn Eads

CIO

2-43, 58, 77-100, 130-131, 140-147

Ted Hobson

Chief Compliance Officer

2-43

Paul Stienbrecher

Environmental Services

2-43, 69-70, 138-139

Caren Anders

Energy

2-43, 47-51, 62-68, 71-75, 77-100, 114-121, 135-137, 140-147

Sherry Hall

Chief Government Affairs Officer

2-43, 77-100, 140-147

Deryle Calhoun

Water & Wastewater Systems

2-43, 52-54, 69-70, 121-124, 138-139

Shawn W Eads
Chief Disruption Officer

From: "McInall, Steven G. - VP & Chief Energy & Water Planning" <mcinsg@jea.com>
Subject: Forecast Reconciliation
Sent: Mon, 23 Sep 2019 15:12:33 -0500
To: "Sarah Brody" <Sarah_Brody@mckinsey.com>

Sarah:

I am trying to come with a comparison of the TYSP and McKinsey forecasts. Did you start with our forecast? If so, the answer is whatever tweaks McKinsey made.

Thanks,

Steve

Steve McInall. P.E.
Vice President, Energy and Water Planning
Direct: (904) 665-4309
Mobile: (904) 312-0739

From: Sarah Brody <Sarah_Brody@mckinsey.com>
Subject: Re: Forecast Reconciliation
Sent: Mon, 23 Sep 2019 15:32:53 -0500
To: "McInall, Steven G. - VP & Chief Energy & Water Planning" <mcinsg@jea.com>

Hi Steve,

We started with the sales forecast from JEA (Melinda Fisher's group specifically within planning). I assume this is the same as what's in the TYSP. Then we made modifications for EE, EVs and DG based on joint McKinsey / JEA assumptions. EV growth for example was based partly on projected vehicle sales in the territory, again from the planning team.

Happy to walk through this in more detail where needed.

Sarah

On Sep 23, 2019, at 1:14 PM, McInall, Steven G. - VP & Chief Energy & Water Planning <mcinsg@jea.com> wrote:

> Sarah:
>
> I am trying to come with a comparison of the TYSP and McKinsey forecasts. Did you start with our forecast? If so, the answer is whatever tweaks McKinsey made.
>
> Thanks,
>
> Steve
>
> **Steve McInall. P.E.**
> Vice President, Energy and Water Planning
> Direct: (904) 665-4309
> Mobile: (904) 312-0739
>
>

From: McInall, Steven G. - VP & Chief Energy & Water Planning <mcinsg@jea.com>
Sent: Tuesday, September 24, 2019 11:13 AM
To: 'Sarah Brody'
Subject: RE: Forecast Reconciliation
Attachments: Copy of FY19 Peaks and Energy Forecast - Final.xlsx

Sarah – can you highlight some of the key assumptions that went in to the modifications, and where the effect was? If you just have your broken out forecast, that would help.

We are trying to answer some of the questions about the differenes in the forecasts.

Thanks

Steve McInall. P.E.
Vice President, Energy and Water Planning
Direct: (904) 665-4309
Mobile: (904) 312-0739

From: Sarah Brody <Sarah_Brody@mckinsey.com>
Sent: Monday, September 23, 2019 4:33 PM
To: McInall, Steven G. - VP & Chief Energy & Water Planning <mcinsg@jea.com>
Subject: Re: Forecast Reconciliation

Hi Steve,

We started with the sales forecast from JEA (Melinda Fisher's group specifically within planning). I assume this is the same as what's in the TYSP. Then we made modifications for EE, EVs and DG based on joint McKinsey / JEA assumptions. EV growth for example was based partly on projected vehicle sales in the territory, again from the planning team.

Happy to walk through this in more detail where needed.

Sarah

On Sep 23, 2019, at 1:14 PM, McInall, Steven G. - VP & Chief Energy & Water Planning <mcinsg@jea.com> wrote:

> Sarah:
>
> I am trying to come with a comparison of the TYSP and McKinsey forecasts. Did you start with our forecast? If so, the answer is whatever tweaks McKinsey made.
>
> Thanks,

Steve

Steve McInall. P.E.
Vice President, Energy and Water Planning
Direct: (904) 665-4309
Mobile: (904) 312-0739

From: Sarah Brody <Sarah_Brody@mckinsey.com>
Sent: Tuesday, September 24, 2019 12:03 PM
To: McInall, Steven G. - VP & Chief Energy & Water Planning
Subject: RE: Forecast Reconciliation

[External Email - Exercise caution. DO NOT open attachments or click links from unknown senders or unexpected email.]

Hi Steve – it might be easier to walk you through the broken-out forecast model and we can go through the modifications. I'm in Jacksonville today and free after 2:30PM if there is a time in there that works for you.

Sarah

From: McInall, Steven G. - VP & Chief Energy & Water Planning <mcinsg@jea.com>
Sent: Tuesday, September 24, 2019 11:13 AM
To: Sarah Brody <Sarah_Brody@mckinsey.com>
Subject: [EXT]RE: Forecast Reconciliation

Sarah – can you highlight some of the key assumptions that went in to the modifications, and where the effect was? If you just have your broken out forecast, that would help.

We are trying to answer some of the questions about the differenes in the forecasts.

Thanks

Steve McInall. P.E.
Vice President, Energy and Water Planning
Direct: (904) 665-4309
Mobile: (904) 312-0739

From: Sarah Brody <Sarah_Brody@mckinsey.com>
Sent: Monday, September 23, 2019 4:33 PM
To: McInall, Steven G. - VP & Chief Energy & Water Planning <mcinsg@jea.com>
Subject: Re: Forecast Reconciliation

[External Email - Exercise caution. DO NOT open attachments or click links from unknown senders or unexpected email.]

Hi Steve,

We started with the sales forecast from JEA (Melinda Fisher's group specifically within planning). I assume this is the same as what's in the TYSP. Then we made modifications for EE, EVs and DG based on joint McKinsey / JEA

assumptions. EV growth for example was based partly on projected vehicle sales in the territory, again from the planning team.

Happy to walk through this in more detail where needed.

Sarah

On Sep 23, 2019, at 1:14 PM, McInall, Steven G. - VP & Chief Energy & Water Planning <mcinsg@jea.com> wrote:

> Sarah:
>
> I am trying to come with a comparison of the TYSP and McKinsey forecasts. Did you start with our forecast? If so, the answer is whatever tweaks McKinsey made.
>
> Thanks,
>
> Steve
>
> **Steve McInall. P.E.**
> Vice President, Energy and Water Planning
> Direct: (904) 665-4309
> Mobile: (904) 312-0739
>
> ---
> Florida has a very broad Public Records Law. Virtually all written communications to or from State and Local Officials and employees are public records available to the public and media upon request. Any email sent to or from JEA's system may be considered a public record and subject to disclosure under Florida's Public Records Laws. Any information deemed confidential and exempt from Florida's Public Records Laws should be clearly marked. Under Florida law, e-mail addresses are public records. If you do not want your e-mail address released in response to a public-records request, do not send electronic mail to this entity. Instead, contact JEA by phone or in writing.
> +==========+
> This email is confidential and may be privileged. If you have received it
> in error, please notify us immediately and then delete it. Please do not
> copy it, disclose its contents or use it for any purpose.
> +==========+

Florida has a very broad Public Records Law. Virtually all written communications to or from State and Local Officials and employees are public records available to the public and media upon request. Any email sent to or from JEA's system may be considered a public record and subject to disclosure under Florida's Public Records Laws. Any information deemed confidential and exempt from Florida's Public Records Laws should be clearly marked. Under Florida law, e-mail addresses are public records. If you do not want your e-mail address released in response to a public-records request, do not send electronic mail to this entity. Instead, contact JEA by phone or in writing.
+==========+
This email is confidential and may be privileged. If you have received it
in error, please notify us immediately and then delete it. Please do not
copy it, disclose its contents or use it for any purpose.
+==========+

From: McInall, Steven G. - VP & Chief Energy & Water Planning <mcinsg@jea.com>
Sent: Wednesday, September 25, 2019 12:52 PM
To: Moran, Mary L. - Mgr Electric Generation Planning; 'Sarah Brody'
Subject: Forecast Review
Attachments: Forecast Review.docx

Sarah: Thank for meeting with me yesterday. Can you review the attached, and recommend any edits?

Mary: Can you take a look at this, too?

Thanks

Energy Forecasting

The purpose of this memo is to describe the different forecasts currently in use at JEA: the JEA developed Ten Year Site Plan (TYSP) forecast; the JEA developed Florida Energy Efficiency and Conservation Act (FEECA) forecast; and the JEA and McKinsey developed Status Quo (SQ) Forecast. Both energy (MWh) and peaks (seasonal MW) are forecast – this memo concentrates on the energy forecasts.

Ten Year Site Plan Forecast - JEA begins this forecast process by weather normalizing energy for each customer class (residential, commercial, industrial and lighting) using NOAA historical weather data.

- The residential energy forecast was developed using multiple regression analysis of weather normalized historical residential energy, Total Population, Median Household Income, Total Housing Starts from Moody's Analytics, JEA's total residential accounts and JEA's residential electric rate.
- The commercial energy forecast was developed using multiple regression analysis of weather normalized historical commercial energy, commercial inventory square footage, total commercial employment, gross product and JEA's commercial electric rate.
- The industrial energy forecast was developed using multiple regression analysis of weather normalized historical industrial energy, total industrial employment, proprietors' profit and total retail sales product for existing industrial accounts. JEA then layers in the estimated energy for new industrial customers on the forecasted industrial energy.
- The lighting energy forecast was developed using the historical actual energy, number of luminaries and JEA's estimated High Pressure Sodium (HPS) to Light-Emitting Diode (LED) street light conversion schedule.

Energy efficiency, EV and electrification forecasts are developed separately and combined with the base forecast described above. JEA's forecasted Annual Average Growth Rate (AAGR) for net energy for load (NEL) during the TYSP period is 0.57 percent.

Florida Energy Efficiency and Conservation Act Forecast – The FEECA forecast used the 2018 TYSP energy forecast. Methodology of forecast development was unchanged from 2018 to 2019, however the 2019 forecast utilizes actual 2018 results rather than forecast. The 2018 TYSP forecast an NEL of 12,586 GWh, whereas the 2019 TYSP reported a 2018 actual NEL of 12,813 GWh, a difference of approximately 2%.

Status Quo Forecast – The SQ forecast starts from the same point as the 2018 TYSP, by setting the kWh/customer the same as in 2018, and then forecasting growth based on population. From this SQ base forecast, McKinsey and JEA applied individual forecasts for energy efficiency, distributed generation (DG) growth, electrification, etc. The SQ and TYSP forecasts, not including DG and electrification, differ by about 5% (SQ is 600 MWh lower than the TYSP forecast). In addition, the SQ forecast incorporates a much more aggressive DG adoption rate, calling for 0.1% of customers/yr until 2025, 1%/yr from 2025 until 2028 (2025 being the year that Solar PV achieves parity), and 1.5%/yr after 2028 (as batteries become economical).

Summary – The TYSP and SQ forecasts are intended for different purposes. The TYSP is submitted to the Public Service Commission to demonstrate that JEA has planned adequately and has the required generation reserves to meet peak demand, plus 15 percent. The SQ forecast, by contrast, is intended to examine potential load erosion due to developing efficiency and distributed generation technologies.

The forecasts differ due to the *weather normalization* in the TYSP forecast, higher levels of *energy efficiency and DG* in the SQ forecast, and the effect of the multiple regression analysis in the TYSP compared to individual forecasts for each factor in the SQ forecast.

SGM, September 25, 2019

From: Moran, Mary L. - Mgr Electric Generation Planning <GuytML@jea.com>
Sent: Wednesday, September 25, 2019 2:30 PM
To: McInall, Steven G. - VP & Chief Energy & Water Planning
Subject: RE: Forecast Review

Concur with TYSP and FEECA discussion. Don't think normalization comment in last section is correct IF McKinsey started with the JEA normalized forecast.

From: McInall, Steven G. - VP & Chief Energy & Water Planning <mcinsg@jea.com>
Sent: Wednesday, September 25, 2019 12:52 PM
To: Moran, Mary L. - Mgr Electric Generation Planning <GuytML@jea.com>; 'Sarah Brody' <Sarah_Brody@mckinsey.com>
Subject: Forecast Review

Sarah: Thank for meeting with me yesterday. Can you review the attached, and recommend any edits?

Mary: Can you take a look at this, too?

Thanks

From: Sarah Brody <Sarah_Brody@mckinsey.com>
Subject: RE: Forecast Review
Sent: Wed, 25 Sep 2019 16:22:53 -0500
To: "McInall, Steven G. - VP & Chief Energy & Water Planning" <mcinsg@jea.com>, "Moran, Mary L. - Mgr Electric Generation Planning" <GuytML@jea.com>
Energy sales summary status quo.xlsx
Forecast Review.docx

[External Email - Exercise caution. DO NOT open attachments or click links from unknown senders or unexpected email.]

Hi Steve – looks good. I made some direct edits and comments in the attached. I'm also attaching the summary status quo energy sales forecast by year and customer class, broken out by driver.

Sarah

From: McInall, Steven G. - VP & Chief Energy & Water Planning <mcinsg@jea.com>
Sent: Wednesday, September 25, 2019 12:52 PM
To: Moran, Mary L. - Mgr Electric Generation Planning <GuytML@jea.com>; Sarah Brody <Sarah_Brody@mckinsey.com>
Subject: [EXT]Forecast Review

Sarah: Thank for meeting with me yesterday. Can you review the attached, and recommend any edits?

Mary: Can you take a look at this, too?

Thanks

Energy Forecasting

The purpose of this memo is to describe the different forecasts currently in use at JEA: the JEA developed Ten Year Site Plan (TYSP) forecast; the JEA developed Florida Energy Efficiency and Conservation Act (FEECA) forecast; and the JEA and McKinsey developed Status Quo (SQ) Forecast. Both energy (MWh) and peaks (seasonal MW) are forecast – this memo concentrates on the energy forecasts.

Ten Year Site Plan Forecast - JEA begins this forecast process by weather normalizing energy for each customer class (residential, commercial, industrial and lighting) using NOAA historical weather data.

- The residential energy forecast was developed using multiple regression analysis of weather normalized historical residential energy, Total Population, Median Household Income, Total Housing Starts from Moody's Analytics, JEA's total residential accounts and JEA's residential electric rate.
- The commercial energy forecast was developed using multiple regression analysis of weather normalized historical commercial energy, commercial inventory square footage, total commercial employment, gross product and JEA's commercial electric rate.
- The industrial energy forecast was developed using multiple regression analysis of weather normalized historical industrial energy, total industrial employment, proprietors' profit and total retail sales product for existing industrial accounts. JEA then layers in the estimated energy for new industrial customers on the forecasted industrial energy.
- The lighting energy forecast was developed using the historical actual energy, number of luminaries and JEA's estimated High Pressure Sodium (HPS) to Light-Emitting Diode (LED) street light conversion schedule.

Energy efficiency, EV and electrification forecasts are developed separately and combined with the base forecast described above. JEA's forecasted Annual Average Growth Rate (AAGR) for net energy for load (NEL) during the TYSP period is 0.57 percent.

Commented [SB1]: I would describe here that energy efficiency and electrification are based on the impact of JEA-led programs, and electric vehicles are based on new vehicle sales (I believe)

Florida Energy Efficiency and Conservation Act Forecast – The FEECA forecast used the 2018 TYSP energy forecast. Methodology of forecast development was unchanged from 2018 to 2019, however the 2019 forecast utilizes actual 2018 results rather than forecast. The 2018 TYSP forecast an NEL of 12,586 GWh, whereas the 2019 TYSP reported a 2018 actual NEL of 12,813 GWh, a difference of approximately 2%.

Status Quo Forecast – The SQ forecast starts from the same point as the 2018 TYSP, by setting the kWh/customer the same as in 2018, and then forecasting growth based on population. From this SQ base forecast, McKinsey and JEA applied individual forecasts for energy efficiency, distributed generation (DG) growth, electrification, etc based on projections of key drivers of each factor; for example energy-intensive appliance turnover rates and cost of distributed generation relative to cost of power in JEA's service territory. The SQ and TYSP forecasts, not including DG and electrification, differ by about 5% (SQ is 600 MWh lower than the TYSP forecast). In addition, the SQ forecast incorporates a much more aggressive DG adoption rate, calling for, for residential customers 0.1% of customers/yr until 2025, 1%/yr from 2025 until 2028 (2025 being the year that Solar PV achieves parity), and 1.5%/yr after 2028,as solar financing begins to realize attractive returns for developers (Commercial customer adoption assumptions follow a similar logic).

Deleted: (

Deleted: as batteries become economical

Deleted:).

Summary – The TYSP and SQ forecasts are intended for different purposes. The TYSP is submitted to the Public Service Commission to demonstrate that JEA has planned adequately and has the required generation reserves to meet peak demand, plus 15 percent. The SQ forecast, by contrast, is intended to examine the potential impact to JEA's financial performance given trends market trends that will impact sales. The forecasts differ due to the *weather normalization* in the TYSP forecast, higher levels of *energy efficiency and DG* in the SQ forecast, and the effect of the multiple regression analysis of historical data in the TYSP compared to individual forward-looking forecasts for each factor in the SQ forecast.

Deleted: potential load erosion due to developing efficiency and distributed generation technologies.¶

SGM, September 25, 2019

Energy Forecasting

SGM, September 25, 2019

Summary forecasts of impact (MWh)	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Customer growth (pre-EE)	12,300,000	12,764,425	13,078,947	13,485,485	13,885,471	14,275,242	14,620,031	14,952,652	15,286,528	15,613,291	15,948,739	16,275,639	16,592,845
Solar - Residential		(9,517)	(14,426)	(19,408)	(24,464)	(29,596)	(34,800)	(133,706)	(187,085)	(294,428)	(376,049)	(458,486)	(541,748)
Solar - C&I		(59,677)	(66,090)	(72,217)	(78,272)	(84,416)	(90,953)	(97,634)	(104,518)	(188,567)	(273,535)	(359,405)	(446,134)
Non-solar DG impact		(3,373)	(6,781)	(10,222)	(13,697)	(17,208)	(20,753)	(24,334)	(27,951)	(31,604)	(35,293)	(39,019)	(42,783)
EV		1,843	4,463	7,887	12,203	17,488	23,753	31,081	39,414	48,698	58,901	69,984	81,933
EE		(466,983)	(890,306)	(1,421,465)	(1,926,716)	(2,379,999)	(2,724,622)	(3,029,073)	(3,306,514)	(3,548,265)	(3,795,835)	(4,033,773)	(4,261,666)
Net impact	-	(537,708)	(973,139)	(1,515,424)	(2,030,946)	(2,493,730)	(2,847,376)	(3,253,666)	(3,586,654)	(4,014,166)	(4,421,811)	(4,820,699)	(5,210,398)
x Resulting sales	12,300,000	12,226,718	12,105,808	11,970,061	11,854,526	11,781,512	11,772,655	11,698,987	11,699,874	11,599,125	11,526,929	11,454,940	11,382,448
		(73,282)	(120,910)	(135,747)	(115,535)	(73,014)	(8,857)	(73,669)	888	(100,749)	(72,197)	(71,989)	(72,492)

Financial model inputs

Energy sales (MWh)	0	0	0	0	0	0	0	0	0	0	0	0
Residential												
Base (post-EE)	5,219,683	5,216,896	5,209,394	5,199,055	5,198,712	5,209,007	5,231,963	5,266,838	5,317,474	5,368,916	5,421,296	5,474,676
Solar - Residential	-	-	-	-	-	-	-	-	-	-	-	-
EV	-	-	-	-	-	-	-	-	-	-	-	-
Total (residential)	5,219,683	5,216,896	5,209,394	5,199,055	5,198,712	5,209,007	5,231,963	5,266,838	5,317,474	5,368,916	5,421,296	5,474,676
Commercial												
Base (post-EE)	4,398,346	4,292,332	4,175,212	4,080,287	4,017,118	4,006,989	4,012,203	4,033,763	4,068,138	4,104,575	4,141,156	4,177,089
Solar - C&I (C proportion)	-	-	-	-	-	-	-	-	-	-	-	-
Total (commercial)	4,398,346	4,292,332	4,175,212	4,080,287	4,017,118	4,006,989	4,012,203	4,033,763	4,068,138	4,104,575	4,141,156	4,177,089
Industrial												
Base (post-EE)	2,679,414	2,679,414	2,679,414	2,679,414	2,679,414	2,679,414	2,679,414	2,679,414	2,679,414	2,679,414	2,679,414	2,679,414
Solar - C&I (I proportion)	-	-	-	-	-	-	-	-	-	-	-	-
Non-solar DG impact	-	-	-	-	-	-	-	-	-	-	-	-
Total (industrial)	2,679,414	2,679,414	2,679,414	2,679,414	2,679,414	2,679,414	2,679,414	2,679,414	2,679,414	2,679,414	2,679,414	2,679,414
Total	12,297,442	12,188,641	12,064,020	11,958,756	11,895,243	11,895,409	11,923,580	11,980,014	12,065,026	12,152,904	12,241,866	12,331,179

From: McInall, Steven G. - VP & Chief Energy & Water Planning <mcinsg@jea.com>
Sent: Thursday, September 26, 2019 8:04 AM
To: Dykes, Melissa H. - President/COO
Subject: Forecast Review rev
Attachments: Forecast Review rev.docx

Edits from Sarah incorporated.

Energy Forecasting

The purpose of this memo is to describe the different forecasts currently in use at JEA: the JEA developed Ten Year Site Plan (TYSP) forecast; the JEA developed Florida Energy Efficiency and Conservation Act (FEECA) forecast; and the JEA and McKinsey developed Status Quo (SQ) Forecast. Both energy (MWh) and peaks (seasonal MW) are forecast – this memo concentrates on the energy forecasts.

Ten Year Site Plan Forecast - JEA begins this forecast process by weather normalizing energy for each customer class (residential, commercial, industrial and lighting) using NOAA historical weather data.

- The residential energy forecast was developed using multiple regression analysis of weather normalized historical residential energy, Total Population, Median Household Income, Total Housing Starts from Moody's Analytics, JEA's total residential accounts and JEA's residential electric rate.
- The commercial energy forecast was developed using multiple regression analysis of weather normalized historical commercial energy, commercial inventory square footage, total commercial employment, gross product and JEA's commercial electric rate.
- The industrial energy forecast was developed using multiple regression analysis of weather normalized historical industrial energy, total industrial employment, proprietors' profit and total retail sales product for existing industrial accounts. JEA then layers in the estimated energy for new industrial customers on the forecasted industrial energy.
- The lighting energy forecast was developed using the historical actual energy, number of luminaries and JEA's estimated High Pressure Sodium (HPS) to Light-Emitting Diode (LED) streetlight conversion schedule.

Energy efficiency and electrification forecasts are based on the impact of JEA-led programs, and the electric vehicle (EV) forecast is based on new vehicle sales projections. These are developed separately and combined with the base forecast described above. JEA's forecasted Annual Average Growth Rate (AAGR) for net energy for load (NEL) during the TYSP period is 0.57 percent.

Florida Energy Efficiency and Conservation Act Forecast – The FEECA forecast used the 2018 TYSP energy forecast. Methodology of forecast development was unchanged from 2018 to 2019, however the 2019 forecast utilizes actual 2018 results rather than forecast. The 2018 TYSP forecast an NEL of 12,586 GWh, whereas the 2019 TYSP reported a 2018 actual NEL of 12,813 GWh, a difference of approximately 2%.

Status Quo Forecast – The SQ forecast starts from the same point as the 2018 TYSP, by setting the kWh/customer the same as in 2018, and then forecasting growth based on population. From this SQ base forecast, McKinsey and JEA applied individual forecasts for energy efficiency, distributed generation (DG) growth, electrification, etc. based on projections of key drivers of each factor; for example energy-intensive appliance turnover rates and cost of distributed generation relative to cost of power in JEA's service territory. The SQ and TYSP forecasts, not including DG and electrification, differ by about 5% (SQ is 600 MWh lower than the TYSP forecast). In addition, the SQ forecast incorporates a much more aggressive DG adoption rate, calling for, for residential customers 0.1% of customers/yr until 2025, 1%/yr from 2025 until 2028 (2025 being the year that Solar PV achieves parity), and 1.5%/yr after 2028, as solar financing begins to realize attractive returns for developers. (Commercial customer adoption assumptions follow a similar logic).

Summary – The TYSP and SQ forecasts are intended for different purposes. The TYSP is submitted to the Public Service Commission to demonstrate that JEA has planned adequately and has the required generation reserves to meet peak demand, plus 15 percent. The SQ forecast, by contrast, is intended to examine the potential impact to JEA's financial performance given trends market trends that will impact sales. The forecasts differ due to the *weather normalization* in the TYSP forecast, higher levels of *energy efficiency and DG* in the SQ forecast, and the effect of the multiple regression analysis of historical data in the TYSP compared to individual forward-looking forecasts for each factor in the SQ forecast.

SGM, September 25, 2019

From:	Dykes, Melissa H. - President/COO <dykemh@jea.com>
Sent:	Thursday, October 3, 2019 10:58 PM
To:	McInall, Steven G. - VP & Chief Energy & Water Planning
Subject:	Forecast Review copy.docx
Attachments:	Forecast Review copy.docx; ATT00001.txt

Energy Forecasting

The purpose of this memo is to describe the different forecasts currently in use at JEA: the JEA developed Ten Year Site Plan (TYSP) forecast; the JEA developed Florida Energy Efficiency and Conservation Act (FEECA) forecast; and the JEA and McKinsey developed Status Quo (SQ) Forecast. Both energy (MWh) and peaks (seasonal MW) are forecast – this memo concentrates on the energy forecasts.

Common elements

Both methodologies begin with actual sales data from FY18, the most recent full fiscal year for which we have data. Both then weather normalize and adjust the sales projections based on a number of common variables: economy, population, housing. [which other ones are common to both analyses?]

Ten Year Site Plan Forecast –

Deleted: -

In its forecast methodology, the ten year site plan utilizes a multiple regression analysis because [why?]

JEA begins this forecast process by weather normalizing energy for each customer class (residential, commercial, industrial and lighting) using NOAA historical weather data.

- The residential energy forecast was developed using multiple regression analysis of weather normalized historical residential energy, Total Population, Median Household Income, Total Housing Starts from Moody's Analytics, JEA's total residential accounts and JEA's residential electric rate.
- The commercial energy forecast was developed using multiple regression analysis of weather normalized historical commercial energy, commercial inventory square footage, total commercial employment, gross product and JEA's commercial electric rate.
- The industrial energy forecast was developed using multiple regression analysis of weather normalized historical industrial energy, total industrial employment, proprietors' profit and total retail sales product for existing industrial accounts. JEA then layers in the estimated energy for new industrial customers on the forecasted industrial energy.
- The lighting energy forecast was developed using the historical actual energy, number of luminaries and JEA's estimated High Pressure Sodium (HPS) to Light-Emitting Diode (LED) street light conversion schedule.

Energy efficiency, EV and electrification forecasts are developed separately and combined with the base forecast described above. JEA's forecasted Annual Average Growth Rate (AAGR) for net energy for load (NEL) during the TYSP period is 0.57 percent.

For the TYSP projection, the projections of energy efficiency and distributed generation reflect historical adoption data. In other words, we do not assume improvements in technology or changes in cost curves might change adoption rates in the future. This assumption is consistent with the intent of the forecast: to conservatively project future capacity needs to ensure there is adequate generation capacity in the future. It is intentionally conservative in these assumptions, and these assumptions are the largest difference in the two forecasts.

Florida Energy Efficiency and Conservation Act Forecast – The FEECA forecast used the 2018 TYSP energy forecast. Methodology of forecast development was unchanged from 2018 to 2019, however the 2019 forecast utilizes actual 2018 results rather than forecast. The 2018 TYSP forecast an NEL of 12,586 GWh, whereas the 2019 TYSP reported a 2018 actual NEL of 12,813 GWh, a difference of approximately 2%. If this is the same forecast as the TYSP forecast delete extra section and say that at the beginning of the TYSP section to simplify

SGM, September 25, 2019

Energy Forecasting

Status Quo Forecast – [Re-order so this is described first] The SQ forecast starts from the same point as the 2018 TYSP, by setting the kWh/customer the same as in 2018, and then forecasting growth based on population. From this SQ base forecast, McKinsey and JEA applied individual forecasts for energy efficiency, distributed generation (DG) growth, electrification, etc. The SQ and TYSP forecasts, not including DG and electrification, differ by about 5% in 2030 (SQ is 600 MWh lower than the TYSP forecast). In addition, the SQ forecast for energy efficient and distributed generation reflect expected continued evolution of technology and improvement in cost curves rather than a static look assuming no technology or cost improvements. This is consistent with the intent of the forecast: to incorporate the best available information into a projection that can be used for strategic planning purposes. The SQ DG forecast is an adoption rate of .0.1% of customers/yr until 2025, increasing to 1%/yr from 2025 until 2028 (2025 being the year that Solar PV achieves parity), and 1.5%/yr after 2028 (as batteries become economical), which reflects this expected technology and economic changes.

Deleted: incorporates a much more aggressive DG adoption rate, calling for

[what is the apples-apples comparison of methodology since that seems to drive some of the delta? Did SQ not use a regression analysis? If not, why does that make sense for that purpose?]

Deleted: .

The Bottom Line:

Deleted: Summary –

- The TYSP and SQ forecasts are intended for different purposes. The TYSP is intentionally conservative to ensure adequate future generation capacity. The SQ forecast is intended to capture our best predictions for the future impact of changes in technology and cost curves that will continue to impact the business.
- The forecasts differ primarily due to higher levels of *energy efficiency and DG* in the SQ forecast, and the effect of the multiple regression analysis in the TYSP compared to individual forecasts for each factor in the SQ forecast. The following page shows different sales forecasts and impact of key variables.

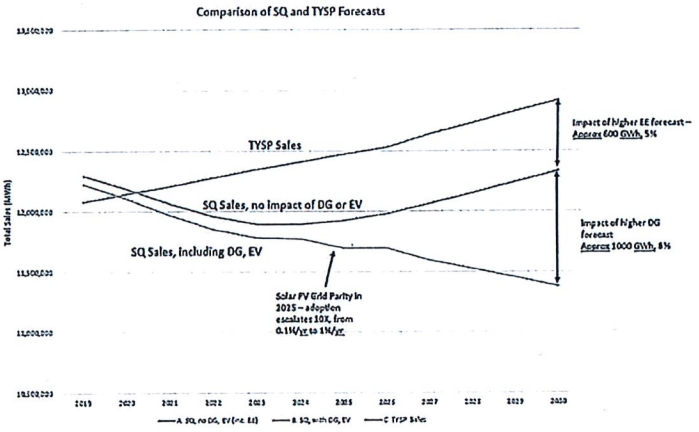
Formatted: List Paragraph, Bulleted + Level: 1 + Aligned at: 0.25" + Indent at: 0.5"

Deleted: submitted to the Public Service Commission to demonstrate that JEA has planned adequately and has the required generation reserves to meet peak demand, plus 15 percent.

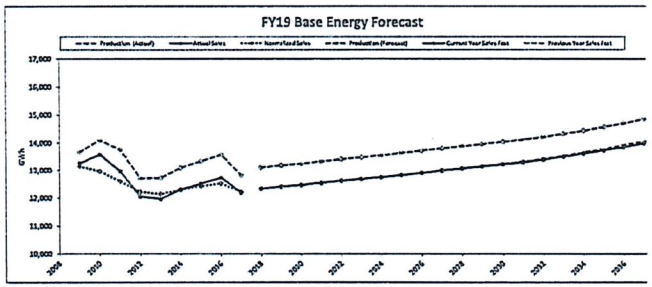
Deleted: , by contrast,

Deleted: examine potential load erosion due to developing efficiency and distributed generation technologies.

Energy Forecasting



Fiscal Year	Normalized Sales (MWh)											Actual Sales	Actual NEL	NEL (MWh)		Production (MWh)
	Residential	Commercial	Industrial	FPU	PEV	Electrification	Lighting	Off-System	Energy Efficiency	Total	FY18 Forecast			FY19 Forecast	FY18 Forecast	
2009	5,211,511	3,973,196	2,857,143	404,327	0	0	120,191	529,730	0	13,146,098		13,255,462	13,183,305	13,163,855		13,682,966
2010	5,328,603	3,936,993	2,784,343	388,004	0	0	123,413	361,559	0	12,922,914		13,571,633	13,706,030	13,118,458		14,116,557
2011	5,193,916	3,911,559	2,892,231	377,653	40	0	122,402	99,593	0	12,597,397		12,963,709	13,382,811	13,077,373		13,757,738
2012	4,877,918	3,897,950	2,844,286	402,061	278	0	122,614	74,852	0	12,219,958		12,047,924	12,325,254	12,520,081		12,712,765
2013	4,963,813	3,831,403	2,841,423	332,226	730	0	123,177	42,286	0	12,135,058		11,971,899	12,325,544	12,546,763		12,723,490
2014	5,070,701	3,867,923	2,777,548	330,438	1,216	0	111,325	136,342	0	12,295,503		12,308,331	12,577,129	12,599,777		13,094,930
2015	5,183,950	3,949,153	2,791,590	330,390	1,707	0	89,378	83,367	0	12,429,536		12,517,575	12,865,916	12,783,137		13,332,273
2016	5,216,483	4,022,312	2,720,091	318,308	2,472	0	80,108	169,037	0	12,528,811		12,739,290	13,057,661	12,871,448		13,565,949
2017	5,112,051	4,018,415	2,720,011	352,516	2,907	0	65,721	140,430	0	12,212,051		12,190,562	12,482,084	12,553,305		12,872,568
2018	5,237,822	3,975,293	2,762,474	28,488	TBD	0	59,176	35,429	0	12,099,202		12,399,769	12,807,373	TBD		13,269,052
2019	5,265,418	4,111,100	2,859,729		6,040	45,634	52,834	42,214	(45,223)	12,337,726	12,340,456			12,679,481	12,682,290	13,107,072
2020	5,299,618	4,135,274	2,868,860		7,751	71,335	52,011	42,430	(71,335)	12,406,046	12,409,877			12,749,693	12,753,631	13,180,062
2021	5,323,937	4,170,195	2,871,036		9,871	96,848	51,175	42,647	(96,650)	12,469,008	12,474,331			12,814,399	12,819,870	13,245,011
2022	5,354,492	4,207,955	2,876,350		12,450	122,471	51,897	42,864	(122,363)	12,541,096	12,548,144			12,888,484	12,895,728	13,321,640
2023	5,392,798	4,234,144	2,878,998		15,454	148,047	52,680	43,083	(148,027)	12,617,127	12,626,237			12,966,621	12,975,984	13,404,518
2024	5,425,594	4,261,260	2,879,216		18,959	173,387	53,437	43,303	(174,253)	12,680,803	12,693,044			13,032,061	13,043,614	13,472,627
2025	5,461,986	4,287,443	2,885,413		22,983	199,735	54,166	43,524	(199,504)	12,748,746	12,766,953			13,101,886	13,115,320	13,544,601
2026	5,506,947	4,313,769	2,896,618		27,568	226,285	54,862	43,746	(225,258)	12,824,578	12,830,304			13,179,819	13,185,703	13,625,006
2027	5,557,862	4,339,290	2,910,478		32,749	253,755	55,524	43,970	(250,931)	12,904,697	12,910,095			13,260,157	13,267,705	13,709,837
2028	5,613,685	4,365,470	2,920,349		38,566	282,405	56,176	44,194	(277,373)	12,987,473	12,994,209			13,347,226	13,354,148	13,797,664
2029	5,678,776	4,390,551	2,925,870		45,068	312,037	56,816	44,420	(302,359)	13,068,380	13,075,706			13,428,113	13,437,904	13,880,870
2030	5,736,527	4,414,673	2,928,958		52,298	330,312	57,447	44,647	(325,072)	13,139,785	13,153,349			13,503,757	13,517,697	13,958,453
2031	5,803,565	4,438,602	2,934,137		60,274	352,581	58,067	44,875	(353,756)	13,218,339	13,236,026			13,584,487	13,603,280	14,041,489
2032	5,877,631	4,462,154	2,939,479		69,096	374,157	58,666	45,104	(379,491)	13,300,786	13,324,851			13,669,237	13,693,949	14,128,891
2033	5,948,949	4,484,684	2,946,305		78,724	395,282	59,241	45,334	(405,213)	13,391,306	13,422,068			13,762,245	13,793,860	14,224,285
2034	6,029,662	4,505,463	2,959,774		89,225	416,837	59,795	45,566	(430,977)	13,494,596	13,533,807			13,868,306	13,907,666	14,333,200
2035	6,120,250	4,524,820	2,975,387		100,635	436,601	60,342	45,798	(456,640)	13,607,192	13,653,638			13,984,132	14,031,866	14,452,298
2036	6,217,637	4,542,814	2,992,453		113,002	457,014	60,880	46,032	(482,410)	13,728,222	13,781,768			14,106,438	14,163,633	14,579,271
2037	6,323,506	4,560,288	3,008,244		126,347	477,269	61,405	46,267	(509,097)	13,855,238	13,920,694			14,239,029	14,308,298	14,714,349
2038	6,435,282	4,576,356	3,022,352		140,715	497,443	61,916	46,503	(533,921)	13,991,798	14,067,996			14,379,370	14,457,680	14,858,434
2039	6,553,865	4,596,813	3,045,741		156,172	517,578	62,415	46,741	(559,484)	14,137,930	14,225,729			14,529,551	14,619,782	15,012,715
2040	6,673,629	4,616,229	3,072,001		172,766	537,649	62,905	46,979	(586,229)	14,295,430	14,395,674			14,691,415	14,794,435	15,179,231
2041	6,798,547	4,636,008	3,096,384		190,545	557,747	63,384	47,219	(618,921)	14,458,903	14,577,657			14,859,415	14,976,320	15,351,496
2042	6,926,790	4,656,329	3,123,922		209,552	577,791	63,853	47,460	(636,635)	14,629,062	14,757,225			15,034,287	15,166,000	15,531,068
2043	7,057,637	4,678,236	3,156,136		229,839	597,819	64,315	47,703	(662,349)	14,809,436	14,952,899			15,219,607	15,367,197	15,723,193
2044	7,193,554	4,701,976	3,188,537		251,464	617,817	64,770	47,946	(689,648)	14,996,316	15,156,304			15,411,611	15,576,134	15,918,706
2045	7,337,703	4,726,681	3,221,215		274,501	637,821	65,220	48,191	(713,776)	15,197,556	15,375,298			15,618,528	15,801,193	16,130,825
2046	7,488,926	4,751,739	3,257,859		299,018	657,844	65,661	48,437	(739,460)	15,409,996	15,606,526			15,836,853	16,038,827	16,354,791
2047	7,651,149	4,777,343	3,294,111		325,099	677,752	66,088	48,684	(765,203)	15,635,022	15,851,403			16,068,113	16,290,487	16,591,995
2019-2028	0.72%	0.67%	0.33%		72.88%	19.25%	0.68%	0.51%	22.33%	0.57%	0.58%			0.57%	0.58%	0.57%



Note:

(1) Historical numbers from Monthly Financial Statements (Greenbook).
(2) Historical NEL numbers from Monthly Operating Report (MOR).
(3) Historical Weather Normalized NEL numbers (Except where specified otherwise)
(4) Plug-in Electric Vehicles (PEV) historical/forecast for residential only.
(5) *FY19 Off-Road Electrification and Energy Efficiency from Customer Solutions & Market Development.*
(6) NEL Forecast based on Average Historical Normalized NEL/Sales Losses of 2.77%
(7) Calculated House Load using Heatrate curves from Fuels Management Services.
(8) Production includes sales, line losses and auxiliary load.
(9) Energy forecast does not include GRU joint dispatch.

From: McInall, Steven G. - VP & Chief Energy & Water Planning <mcinsg@jea.com>
Sent: Thursday, October 3, 2019 2:49 PM
To: Dykes, Melissa H. - President/COO
Subject: Forecast
Attachments: Forecast Review.docx

Hopefully this is a little clearer.

Steve McInall. P.E.
Vice President, Energy and Water Planning
Direct: (904) 665-4309
Mobile: (904) 312-0739

Energy Forecasting

The purpose of this memo is to describe the different forecasts currently in use at JEA: the JEA developed Ten Year Site Plan (TYSP) forecast; the JEA developed Florida Energy Efficiency and Conservation Act (FEECA) forecast; and the JEA and McKinsey developed Status Quo (SQ) Forecast. Both energy (MWh) and peaks (seasonal MW) are forecast – this memo concentrates on the energy forecasts.

Ten Year Site Plan Forecast - JEA begins this forecast process by weather normalizing energy for each customer class (residential, commercial, industrial and lighting) using NOAA historical weather data.

- The residential energy forecast was developed using multiple regression analysis of weather normalized historical residential energy, Total Population, Median Household Income, Total Housing Starts from Moody's Analytics, JEA's total residential accounts and JEA's residential electric rate.
- The commercial energy forecast was developed using multiple regression analysis of weather normalized historical commercial energy, commercial inventory square footage, total commercial employment, gross product and JEA's commercial electric rate.
- The industrial energy forecast was developed using multiple regression analysis of weather normalized historical industrial energy, total industrial employment, proprietors' profit and total retail sales product for existing industrial accounts. JEA then layers in the estimated energy for new industrial customers on the forecasted industrial energy.
- The lighting energy forecast was developed using the historical actual energy, number of luminaries and JEA's estimated High Pressure Sodium (HPS) to Light-Emitting Diode (LED) street light conversion schedule.

Energy efficiency, EV and electrification forecasts are developed separately and combined with the base forecast described above. JEA's forecasted Annual Average Growth Rate (AAGR) for net energy for load (NEL) during the TYSP period is 0.57 percent.

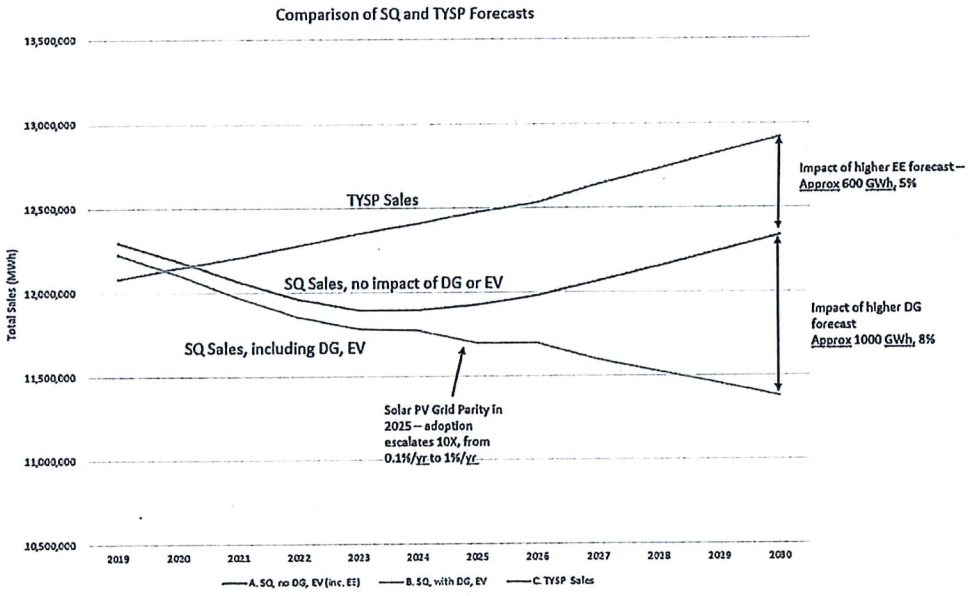
Florida Energy Efficiency and Conservation Act Forecast – The FEECA forecast used the 2018 TYSP energy forecast. Methodology of forecast development was unchanged from 2018 to 2019, however the 2019 forecast utilizes actual 2018 results rather than forecast. The 2018 TYSP forecast an NEL of 12,586 GWh, whereas the 2019 TYSP reported a 2018 actual NEL of 12,813 GWh, a difference of approximately 2%.

Status Quo Forecast – The SQ forecast starts from the same point as the 2018 TYSP, by setting the kWh/customer the same as in 2018, and then forecasting growth based on population. From this SQ base forecast, McKinsey and JEA applied individual forecasts for energy efficiency, distributed generation (DG) growth, electrification, etc. The SQ and TYSP forecasts, not including DG and electrification, differ by about 5% in 2030 (SQ is 600 MWh lower than the TYSP forecast). In addition, the SQ forecast incorporates a much more aggressive DG adoption rate, calling for 0.1% of customers/yr until 2025, 1%/yr from 2025 until 2028 (2025 being the year that Solar PV achieves parity), and 1.5%/yr after 2028 (as batteries become economical).

Summary – The TYSP and SQ forecasts are intended for different purposes. The TYSP is submitted to the Public Service Commission to demonstrate that JEA has planned adequately and has the required generation reserves to meet peak demand, plus 15 percent. The SQ forecast, by contrast, is intended to examine potential load erosion due to developing efficiency and distributed generation technologies.

The forecasts differ primarily due to higher levels of *energy efficiency and DG* in the SQ forecast, and the effect of the multiple regression analysis in the TYSP compared to individual forecasts for each factor in the SQ forecast. The following page shows different sales forecasts and impact of key variables.

Energy Forecasting



From: McInall, Steven G. - VP & Chief Energy & Water Planning <mcinsg@jea.com>
Sent: Thursday, October 3, 2019 4:57 PM
To: Dykes, Melissa H. - President/COO
Subject: RE: Forecast

I added a figure that should help. Tysp based on regression analysis of historical is in there.

From: Dykes, Melissa H. - President/COO
Sent: Thursday, October 3, 2019 4:01 PM
To: McInall, Steven G. - VP & Chief Energy & Water Planning
Subject: Re: Forecast

Did you add commentary that 10ysp dg is based on history? Didn't see that in here but reading on my mobile.

On Oct 3, 2019, at 11:49 AM, McInall, Steven G. - VP & Chief Energy & Water Planning <mcinsg@jea.com<mailto:mcinsg@jea.com>> wrote:

Hopefully this is a little clearer.

Steve McInall. P.E.
Vice President, Energy and Water Planning
Direct: (904) 665-4309
Mobile: (904) 312-0739

<Forecast Review.docx>

From: McInall, Steven G. - VP & Chief Energy & Water Planning <mcinsg@jea.com>
Sent: Friday, October 4, 2019 11:44 AM
To: Moran, Mary L. - Mgr Electric Generation Planning
Subject: Forecast Review copy 2
Attachments: Forecast Review copy 2.docx

Mary – can you work on this? Comments in yellow are from Melissa.

Also, trying to defend the regression analysis – FPL and Duke methodology looks different. Take a peek and see if we should be adjusting our methodology.

Energy Forecasting

The purpose of this memo is to describe the different forecasts currently in use at JEA: the JEA developed Ten Year Site Plan (TYSP) forecast; the JEA developed Florida Energy Efficiency and Conservation Act (FEECA) forecast; and the JEA and McKinsey developed Status Quo (SQ) Forecast. Both energy (MWh) and peaks (seasonal MW) are forecast – this memo concentrates on the energy forecasts.

Common elements

Both methodologies begin with actual sales data from FY18, the most recent full fiscal year for which we have data. Both then weather normalize and adjust the sales projections based on a number of common variables: economy, population, housing, [which other ones are common to both analyses?]

Status Quo Forecast

The SQ forecast starts from the same point as the 2018 TYSP, by setting the kWh/customer the same as in 2018, and then forecasting growth based on population. From this SQ base forecast, McKinsey and JEA applied individual forecasts for energy efficiency, distributed generation (DG) growth, electrification, etc. The SQ and TYSP forecasts, not including DG and electrification, differ by about 5% in 2030 (SQ is 600 MWh lower than the TYSP forecast). In addition, the SQ forecast for energy efficient and distributed generation reflect expected continued evolution of technology and improvement in cost curves rather than a static look assuming no technology or cost improvements. This is consistent with the intent of the forecast: to incorporate the best available information into a projection that can be used for strategic planning purposes. The SQ DG forecast is based on an adoption rate of 0.1% of customers/yr until 2025, increasing to 1%/yr from 2025 until 2028 (2025 being the year that Solar PV achieves parity), and 1.5%/yr after 2028 (as batteries become economical), which reflects expected technology and economic changes.

[what is the apples-apples comparison of methodology since that seems to drive some of the delta? Did SQ not use a regression analysis? If not, why does that make sense for that purpose?]

Ten Year Site Plan Forecast/Florida Energy Efficiency and Conservation Act Forecast

The FEECA forecast used the 2018 TYSP energy forecast. Methodology of forecast development was unchanged from 2018 to 2019, however the 2019 forecast utilizes actual 2018 results rather than forecast. The 2018 TYSP forecast an NEL of 12,586 GWh, whereas the 2019 TYSP reported a 2018 actual NEL of 12,813 GWh, a difference of approximately 2%.

In its forecast methodology, the ten year site plan utilizes a multiple regression analysis of historical data. This approach is conservative in that it captures the impact of all variables, whether or not the precise impact of the variable on the forecast is known. JEA begins this forecast process by weather normalizing energy for each customer class (residential, commercial, industrial and lighting) using NOAA historical weather data.

- The residential energy forecast was developed using multiple regression analysis of weather normalized historical residential energy, Total Population, Median Household Income, Total Housing Starts from Moody's Analytics, JEA's total residential accounts and JEA's residential electric rate.
- The commercial energy forecast was developed using multiple regression analysis of weather normalized historical commercial energy, commercial inventory square footage, total commercial employment, gross product and JEA's commercial electric rate.
- The industrial energy forecast was developed using multiple regression analysis of weather normalized historical industrial energy, total industrial employment, proprietors' profit and total retail sales product for existing industrial accounts. JEA then layers in the estimated energy for new industrial customers on the forecasted industrial energy.

Energy Forecasting

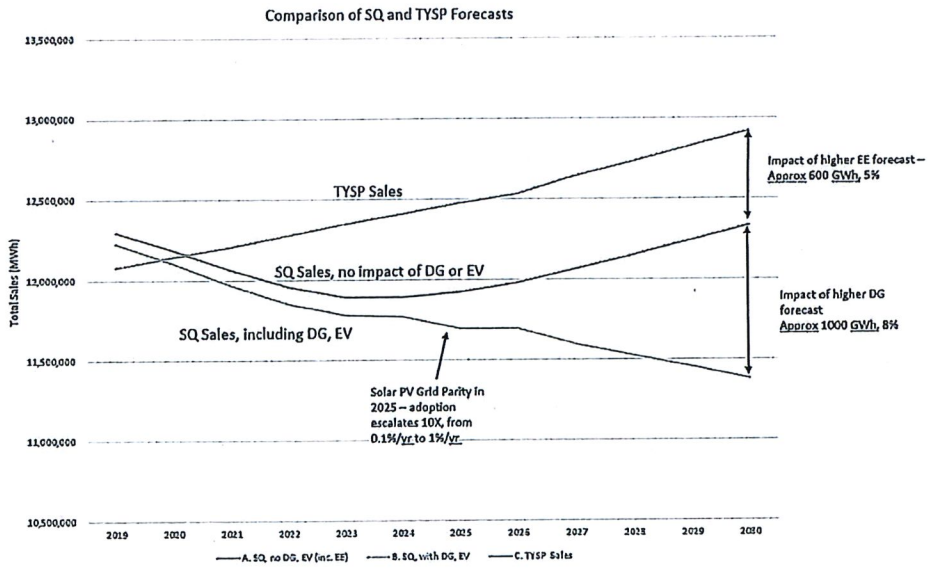
- The lighting energy forecast was developed using the historical actual energy, number of luminaries and JEA's estimated High Pressure Sodium (HPS) to Light-Emitting Diode (LED) street light conversion schedule.

Energy efficiency, EV and electrification forecasts are developed separately and combined with the base forecast described above. JEA's forecasted Annual Average Growth Rate (AAGR) for net energy for load (NEL) during the TYSP period is 0.57 percent.

For the TYSP projection, the projections of energy efficiency and distributed generation reflect historical adoption data. In other words, we do not assume improvements in technology or changes in cost curves might change adoption rates in the future. This assumption is consistent with the intent of the forecast: to conservatively project future capacity needs to ensure there is adequate generation capacity in the future. It is intentionally conservative in these assumptions, and these assumptions are the largest difference in the two forecasts.

The Bottom Line:

- The TYSP and SQ forecasts are intended for different purposes. The TYSP is intentionally conservative to ensure adequate future generation capacity. The SQ forecast is intended to capture our best predictions for the future impact of changes in technology and cost curves that will continue to impact the business.
- The forecasts differ primarily due to higher levels of *energy efficiency and DG* in the SQ forecast, and the effect of the multiple regression analysis in the TYSP compared to individual forecasts for each factor in the SQ forecast. The following page shows different sales forecasts and impact of key variables.



Energy Forecasting

SGM, October 4, 2019

From: Dykes, Melissa H. - President/COO <dykemh@jea.com>
Sent: Monday, October 7, 2019 9:40 PM
To: McInall, Steven G. - VP & Chief Energy & Water Planning
Subject: Fwd: Forecast Review copy.docx

Did you send me another version of this? Sorry if I missed it but not finding in my email.

Begin forwarded message:

> **From:** "Dykes, Melissa H. - President/COO" <dykemh@jea.com>
> **Date:** October 3, 2019 at 10:57:52 PM EDT
> **To:** "McInall, Steven G. - VP & Chief Energy & Water Planning" <mcinsg@jea.com>
> **Subject: Forecast Review copy.docx**

Energy Forecasting

The purpose of this memo is to describe the different forecasts currently in use at JEA: the JEA developed Ten Year Site Plan (TYSP) forecast; the JEA developed Florida Energy Efficiency and Conservation Act (FEECA) forecast; and the JEA and McKinsey developed Status Quo (SQ) Forecast. Both energy (MWh) and peaks (seasonal MW) are forecast – this memo concentrates on the energy forecasts.

Common elements

Both methodologies begin with actual sales data from FY18, the most recent full fiscal year for which we have data. Both then weather normalize and adjust the sales projections based on a number of common variables: economy, population, housing, [which other ones are common to both analyses?]

Status Quo Forecast

The SQ forecast starts from the same point as the 2018 TYSP, by setting the kWh/customer the same as in 2018, and then forecasting growth based on population. From this SQ base forecast, McKinsey and JEA applied individual forecasts for energy efficiency, distributed generation (DG) growth, electrification, etc. The SQ and TYSP forecasts, not including DG and electrification, differ by about 5% in 2030 (SQ is 600 MWh lower than the TYSP forecast). In addition, the SQ forecast for energy efficient and distributed generation reflect expected continued evolution of technology and improvement in cost curves rather than a static look assuming no technology or cost improvements. This is consistent with the intent of the forecast: to incorporate the best available information into a projection that can be used for strategic planning purposes. The SQ DG forecast is based on an adoption rate of 0.1% of customers/yr until 2025, increasing to 1%/yr from 2025 until 2028 (2025 being the year that Solar PV achieves parity), and 1.5%/yr after 2028 (as batteries become economical), which reflects expected technology and economic changes.

[what is the apples-apples comparison of methodology since that seems to drive some of the delta? Did SQ not use a regression analysis? If not, why does that make sense for that purpose?]

Ten Year Site Plan Forecast/Florida Energy Efficiency and Conservation Act Forecast

The FEECA forecast used the 2018 TYSP energy forecast. Methodology of forecast development was unchanged from 2018 to 2019, however the 2019 forecast utilizes actual 2018 results rather than forecast. The 2018 TYSP forecast an NEL of 12,586 GWh, whereas the 2019 TYSP reported a 2018 actual NEL of 12,813 GWh, a difference of approximately 2%.

In its forecast methodology, the ten year site plan utilizes a multiple regression analysis of historical data. This approach is conservative in that it captures the impact of all variables, whether or not the precise impact of the variable on the forecast is known. JEA begins this forecast process by weather normalizing energy for each customer class (residential, commercial, industrial and lighting) using NOAA historical weather data.

- The residential energy forecast was developed using multiple regression analysis of weather normalized historical residential energy, Total Population, Median Household Income, Total Housing Starts from Moody's Analytics, JEA's total residential accounts and JEA's residential electric rate.
- The commercial energy forecast was developed using multiple regression analysis of weather normalized historical commercial energy, commercial inventory square footage, total commercial employment, gross product and JEA's commercial electric rate.
- The industrial energy forecast was developed using multiple regression analysis of weather normalized historical industrial energy, total industrial employment, proprietors' profit and total retail sales product for existing industrial accounts. JEA then layers in the estimated energy for new industrial customers on the forecasted industrial energy.

Energy Forecasting

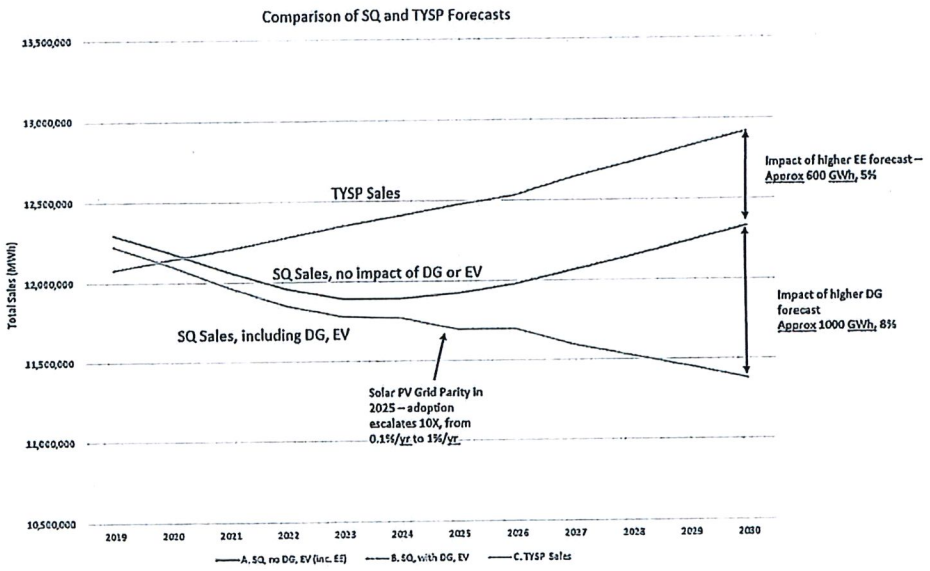
- The lighting energy forecast was developed using the historical actual energy, number of luminaries and JEA's estimated High Pressure Sodium (HPS) to Light-Emitting Diode (LED) street light conversion schedule.

Energy efficiency, EV and electrification forecasts are developed separately and combined with the base forecast described above. JEA's forecasted Annual Average Growth Rate (AAGR) for net energy for load (NEL) during the TYSP period is 0.57 percent.

For the TYSP projection, the projections of energy efficiency and distributed generation reflect historical adoption data. In other words, we do not assume improvements in technology or changes in cost curves might change adoption rates in the future. This assumption is consistent with the intent of the forecast: to conservatively project future capacity needs to ensure there is adequate generation capacity in the future. It is intentionally conservative in these assumptions, and these assumptions are the largest difference in the two forecasts.

The Bottom Line:

- The TYSP and SQ forecasts are intended for different purposes. The TYSP is intentionally conservative to ensure adequate future generation capacity. The SQ forecast is intended to capture our best predictions for the future impact of changes in technology and cost curves that will continue to impact the business.
- The forecasts differ primarily due to higher levels of *energy efficiency and DG* in the SQ forecast, and the effect of the multiple regression analysis in the TYSP compared to individual forecasts for each factor in the SQ forecast. The following page shows different sales forecasts and impact of key variables.



Energy Forecasting

SGM, October 4, 2019

From:	McInall, Steven G. - VP & Chief Energy & Water Planning <mcinsg@jea.com>
Sent:	Thursday, October 10, 2019 6:07 PM
To:	Dykes, Melissa H. - President/COO
Cc:	Coarsey, John B. - Director, Electric T & D Planning; Moran, Mary L. - Mgr Electric Generation Planning; 'Sarah Brody'
Subject:	Forecasting - Short Version
Attachments:	Forecast Review short version.docx

Melissa: Depending on the audience (i.e., non engineer/scientists), this explanation may be more straightforward.

Steve

Energy Forecasting – Short Version

The purpose of this memo is to describe the basic differences and purposes of the JEA developed forecast used in JEA's 2019 Ten Year Site Plan (TYSP) and the JEA and McKinsey developed Status Quo (SQ) Forecast.

The TYSP is primarily intended to ensure that JEA has adequate capacity to serve its peak loads (winter and summer), plus a reserve margin. The Florida Public Service Commission reviews individual and state aggregated utility TYSPs to ensure that the state as a whole has adequate generation resources. The forecast used in the TYSP and the Florida Energy Efficiency and Conservation Act (FEECA) primarily produces peak demand and is not intended to be a sales forecast, although it does include a forecast of sales.

The SQ forecast is intended to be a forecast of future utility sales, incorporating developing trends such as an accelerated adoption of solar distributed generation which is not individually accounted for in the TYSP forecast, as well as accelerated energy efficiency.

The Annual Average Growth Rate (AAGR) for net energy for load (NEL) during the TYSP period is 0.57 percent, which is barely above a flat forecast. As a result, any change in forecast methodology can change this modest rise into a declining forecast. The SQ forecast is captures the potential impacts of future technology changes (such as solar and storage achieving parity with grid power) that are not reflected in historically-based forecasts. The historically-based forecasts developed for use in the TYSP are accurate in the short-term (i.e., 1-3 years), but will not pick up large-scale changes that are not yet reflected in the energy and peak statistics for the system.

SGM, October 8, 2019

From: Wannemacher, Ryan F. - Chief Financial Officer <wannrf@jea.com>
Sent: Thursday, August 15, 2019 3:53 PM
To: McInall, Steven G. - VP & Chief Energy & Water Planning
Subject: Fwd: Project for Strategic Planning

Get Outlook for iOS

---------- Forwarded message ----------
From: **"Quarterman, Kristina M - Manager Operating Budgets"** <quarkm@jea.com>
Date: Thu, Aug 15, 2019 at 3:06 PM -0400
Subject: FW: Project for Strategic Planning
To: "Wannemacher, Ryan F. - Chief Financial Officer" <wannrf@jea.com>

FYI

From: Quarterman, Kristina M - Manager Operating Budgets
Sent: Friday, August 9, 2019 3:49 PM
To: Jones, Madricka L. - Executive Staff Assistant <joneml@jea.com>; Taylor, Brandi N. - Mgr Business Operations <taylbn@jea.com>; Begue, Kandi R. (Randstad) <begukr@jea.com>; McDonald, Nancy M - Executive Assistant <mcdonm@jea.com>; Stevens, Celeste A. <stevca@jea.com>; Luster, Jill R. - Executive Staff Assistant <lustjr@jea.com>
Cc: Bartley, La'Trece M. - Mgr Executive Administration <bartlm@jea.com>; Crawford, Juli E. - Director Financial Planning & Analysis <crawje@jea.com>
Subject: Project for Strategic Planning

Please utilize the following information for all recapitalization/strategic planning expenses:

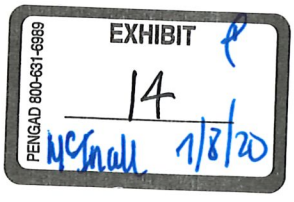
Project Number: 8005764 Project Name: PA19E-OM-Strategic Planning-E
Users will have to pick the ET when they create the POs/check requests.

Tasks:

003.1 – Holland & Knight – 021.50001.00000000.00.923101.2070.0000 (Pick Legal as your Expenditure Type)
003.2 – McKinsey – 021.50001.00000000.00.923101.2002.0000 (Pick Professional Fees as your Expenditure Type)
003.3 – Foley & Lardner – 021.50001.00000000.00.923101.2070.0000 (Pick Legal as your Expenditure Type)
003.4 – Morgan Stanley – 021.50001.00000000.00.923101.2002.0000 (Pick Professional Fees as your Expenditure Type)
003.5 – JP Morgan – 021.50001.00000000.00.923101.2002.0000 (Pick Professional Fees as your Expenditure Type)
003.6 – Pillsbury Winthrop Shaw Pittman LLP – 021.50001.00000000.00.923101.2070.0000 (Pick Legal as your Expenditure Type)

If any new vendors are added, we will add them as a new task and I will communicate them via email.

Thanks,
Kristina 6513



Daniel Nunn, Jr.

From: McInall, Steven G. - VP & Chief Energy & Water Planning <mcinsg@jea.com>
Sent: Thursday, March 7, 2019 10:53 AM
To: Van Aartsen, Randall D. - Mgr Fuels Mgmt Services
Subject: FW: Status Quo 2 - Please Complete Initiative Template by March 15
Attachments: JEA initiative templates.pptx

Randy – can you look at the attached with respect to the natural gas sales? Don't send me anything. This is a what-if exercise. Try to capture where we are now.

Thanks

Steve McInall. P.E.
Vice President, Energy and Water Planning
Direct: (904) 665-4309
Mobile: (904) 312-0739

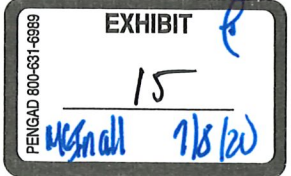
From: Romero Aguero, Julio E. (Chief Inno. and Transformation Officer) <romeje@jea.com>
Sent: Wednesday, March 6, 2019 5:08 PM
To: (Mgmt - JEA Senior Leadership Team (SLT) <Mgmtslt@jea.com>
Cc: Jones, Madricka L. - Executive Assistant <joneml@jea.com>; 'Anton Derkach' <anton_derkach@mckinsey.com>; Aaron Bielenberg <Aaron_Bielenberg@mckinsey.com>; 'Sarah Brody' <Sarah_Brody@mckinsey.com>
Subject: Status Quo 2 - Please Complete Initiative Template by March 15
Importance: High

Dear colleagues,

Thanks for your time on Monday as we kicked off our work on status quo 2 – initiative development. As we discussed, over the next two weeks (through March 15) you will be working with your teams to develop initiatives to reduce costs (or generate additional revenue) within your business area.

You'll find attached a template for recording these initiatives (page 1), it includes the items and categories discussed on Monday. We ask that you fill out this template as completely and thoroughly as possible over the next 1 ½ weeks for each initiative, knowing that many details are still to be developed at this stage. Page 2 of the template is a lighter template to fill out ideas that are currently outside of JEA's current charter agreement or that involve addressing governance constraints, which we would encourage you to think about and fill in for future discussions, these ideas will be developed further in the next stage of the process. Pages 3-5 of the template provide additional guidance for initiative development: a guide to advancing initiatives through the implementation funnel (page 3) and examples of initiative templates that have been filled out (pages 4-5), for illustration purposes only. Please send your templates by **March 15**.

We'll be hosting optional "office hours" on next Monday March 11 (between 3 and 5 PM) and Wednesday March 13 (between 2 and 4 PM) for you to stop by to ask questions as you develop initiatives and fill in the templates. We will be



setting up individual meetings with each of you, the finance team, and any representative from your business area whom you'd like to invite, for the week of March 18, to review the initiatives you have developed and develop a path to refining these initiatives before the SLT offsite on April 4. Finally, I'll be contacting a subset of you individually shortly on additional data we'll need from your business areas so we can develop the "opportunity sizing" we discussed on Monday that will also form part of the April 4 discussion.

Please let me know if you have any questions. I'm excited to work with all of you on the next phase of our journey.

Thanks,

Julio

Julio Romero Agüero, PhD, MBA
Chief Innovation and Transformation Officer
JEA
21 West Church Street
Jacksonville, Florida 32202-3139
Phone (904) 665-8898
Fax (904) 665-4238
Cell (919) 208-4885
Email romeje@jea.com

E NAME]

Details

[Brief description of initiative]

[Brief explanation for why this initiative will provide financial value to JEA]

Mark low / medium / high for each risk category that applies:
☐ Environmental ☐ Customer satisfaction ☐ Reliability ☐ Safety
☐ Financial ☐ Compliance ☐ Other

[brief explanation of level of risks shown]

☐ Minimal effort to implement ☐ Significant effort to implement
☐ Major operational change required to implement

[brief explanation of level of effort]

☐ No-regrets ☐ Trade-offs ☐ Difficult (risks > rewards)

Stakeholder Perspective

- [Viewpoints of relevant directors, business area leads, and SMEs who have been consulted on initiative]

Expected impact when fully implemented

Source of impact:
☐ Increased revenue ☐ Reduced costs

(If reduced costs) What is the source of sav
that apply):
☐ Internal labor ☐ O&M ☐ Capital
☐ Contracted services ☐ Other

Is impact one-time or recurring?
☐ One-time ☐ Recurring

Fill in boxes below in '000 (impacts are ann
recurring impacts, total for one-time impac

Estimated total impact: ☐

Estimated cost to implement: ☐

Estimated net impact (total impact minus c

d supporting data

ort impact assessment, rationale for initiative]

ce of data]

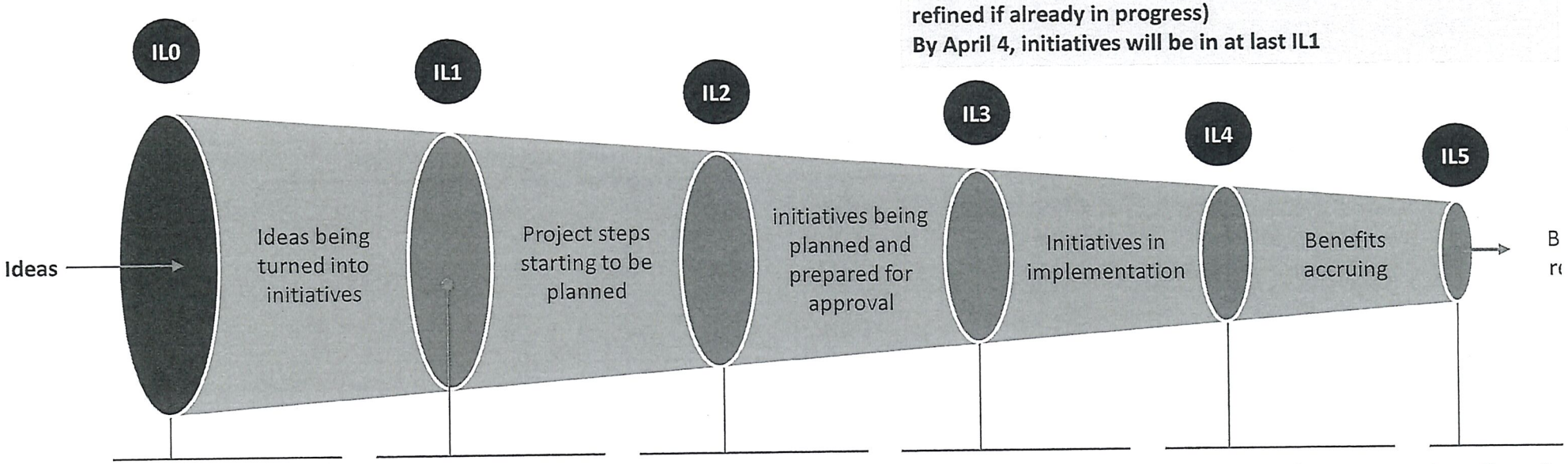
xplanation if needed or available of steps to implementation, current status of initiative]

ɔt" for initiatives outside of JEA's current charter and/or that involve addressing governance co

nitiative	What would need to change
	▪ Text
	▪ Text
	▪ Text
	▪ Text
	▪ Text

move through an "implementation level" structure from inception to completion

Initiatives should be at least IL0 by March 18 (Some initiatives m
refined if already in progress)
By April 4, initiatives will be in at last IL1



	Generated	Refined	Planned	Approved	Implemented	Benefit realiz
ı for ɐl	**Idea** generated with high level estimate of savings benefit	Idea is **likely to proceed**, estimate of savings is more refined	Idea **analyzed** for feasibility, and high-level **implementation plan** developed	Initiative **approved** and signed off by relevant parties, all milestones defined	All **implementation steps completed**	**Run-rate savi** impacting **bot**
	±50%	**±20%**	**±10%**	**±10%**	**Final**	**Final**
iative	We think there is opportunity to save up to $2M on filters	We spend $10m on filters, and we think we can get 10% ($1m)	We have checked pricing across sites and believe a 15% improvement is possible	We confirmed the applicable baseline (both volume and price) and estimate value of opportunity is $1.4 million	We have firm price commitments from suppliers and have changed operations practice to begin buying	We are only b lower cost iter or following n process

:e Administrative Clerk IV position

Details

Consolidate 1 Administrative Clerk IV position from the Production Engineering department

- Position was originally developed to provide assistance on NERC and CIP requirements
- Requirements fulfilled and now load is not justified

Mark low / medium / high for each risk category that applies:

☐ Environmental ☐ Customer satisfaction ☐ Reliability ☐ Safety
☐ Financial ☐ Compliance ☒ Other

Increased workload on department

☒ Minimal effort to implement ☐ Significant effort to implement
☐ Major operational change required to implement

Requires minimal new skills or training

☒ No-regrets ☐ Trade-offs ☐ Difficult

Stakeholder Perspective

- Leadership agrees these positions can be consolidated

Expected impact when fully implemented

Source of impact:

☐ Increased revenue ☒ Reduced costs

(If reduced costs) What is the source of sav that apply):

☒ Internal labor ☒ O&M ☐ Capital
☐ Contracted services ☐ Other

Is impact one-time or recurring?

☐ One-time ☒ Recurring

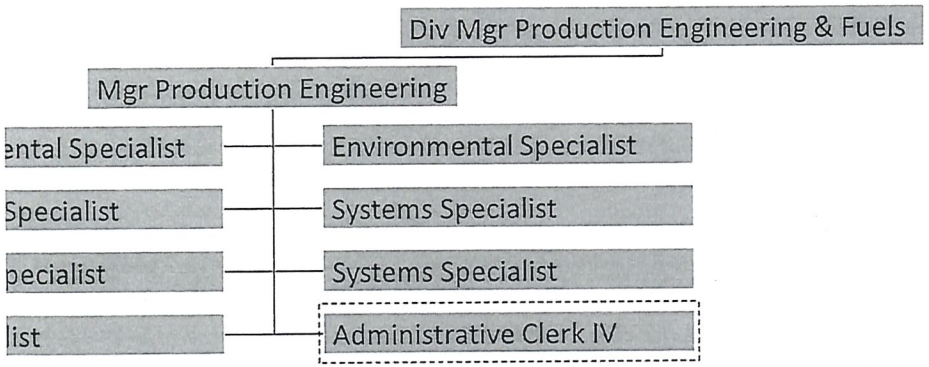
Fill in boxes below in $'000 (impacts are an recurring impacts, total for one-time impac

Estimated total impact: 85

Estimated cost to implement: 0

Estimated net impact (total impact minus c

d supporting data



Current state

- Limited clerical work needed for the division as tasks for N requirements have been completed
- Supports fuels analyst
- Shares some duties with division secretary
- Managers are having to seek work for the position

Proposed future state

- Consolidate the position and do not backfill
- Not detrimental to the workload and output of the divisio

Data source: 2015 employee database, annual benefits inclua on manager interviews

oduction Engineering & Fuels OS spend

Details

- Consolidate spend for environmental consulting service
- Reduce spend on ground water by conducting in house
- Reduce budgeted amount for fish entrainment study as a part of 316B

- Additional spend on environmental consulting is not necessary in today's rate environment and current environmental affairs staffing
- Statistics portion of ground water testing can be done internally at lower cost than outsourcing; expect frequency of analyses needed to increase in the near future, increasing savings through insourcing
- Fish study budgeted for $407K, however, cost estimate at ≤ $370K

Mark low / medium / high for each risk category that applies:

☐ Environmental ☐ Customer satisfaction ☐ Reliability ☐ Safety
☐ Financial ☒ Compliance ☐ Other

Lack of experience when conducting statistical analysis of groundwater reports

☐ Minimal effort to implement ☒ Significant effort to implement
☐ Major operational change required to implement

Need to cancel contracts and develop capabilities in-house

☒ No-regrets ☐ Trade-offs ☐ Difficult

Stakeholder Perspective

Leader A & B:

- Consulting: believed to be a useful service
- Groundwater analysis: agrees that it can be done in house
- Fish study: vendor price lower than budgeted amount and re-negotiating for lower price

Leader B: Possibly use RMB consulting every 2 years

Expected impact when fully implemented

Source of impact:

☐ Increased revenue ☒ Reduced costs

(If reduced costs) What is the source of sav that apply):

☒ Internal labor ☒ O&M ☐ Capital
☐ Contracted services ☐ Other

Is impact one-time or recurring?

☐ One-time ☒ Recurring

Fill in boxes below in '000 (impacts are ann recurring impacts, total for one-time impac

Estimated total impact: 73

Estimated cost to implement: 15

Estimated net impact (total impact minus c

d supporting data

ı of outside services ($ '000)

	FY16	**Proposed budget,** FY16
onsulting	18	9
alysis	18	6
	407	370
	443	385

Comment

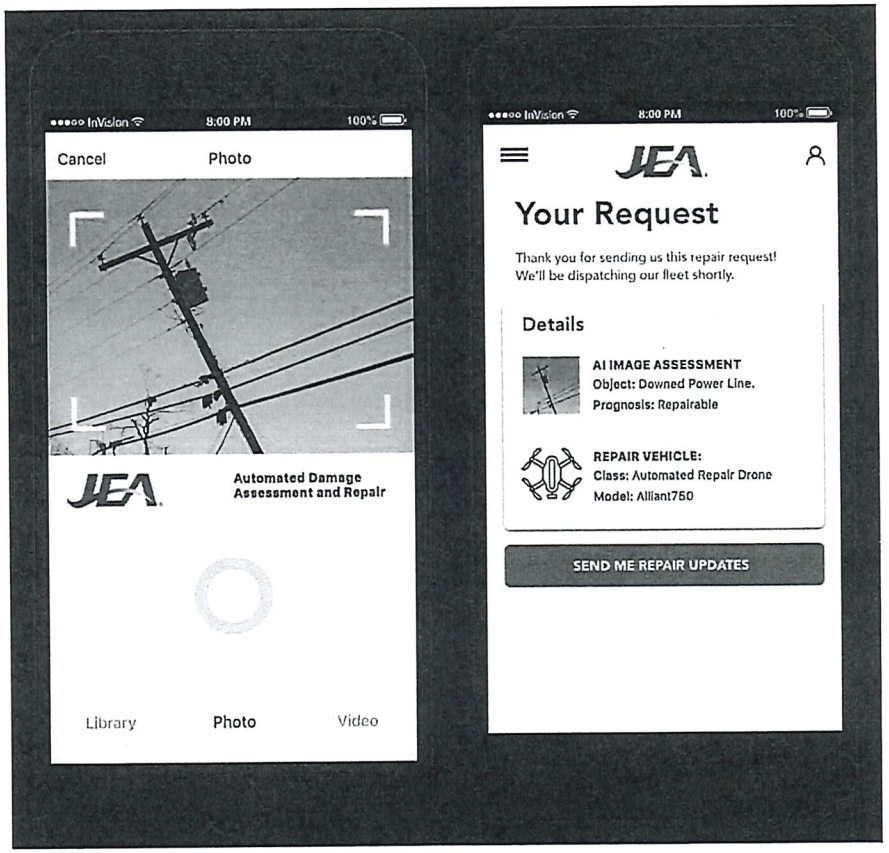
- RMB environmental consulting used as needed
- Environmental Specialists can be trained on groundwater analysis with ap software ($4k) and training ($2k)
- FY16 cost estimate updated; additional opportunity through vendor nego ongoing

Source: Department Manager and 2016 budget

INSPIRATION

Drone Inspect & Repair App

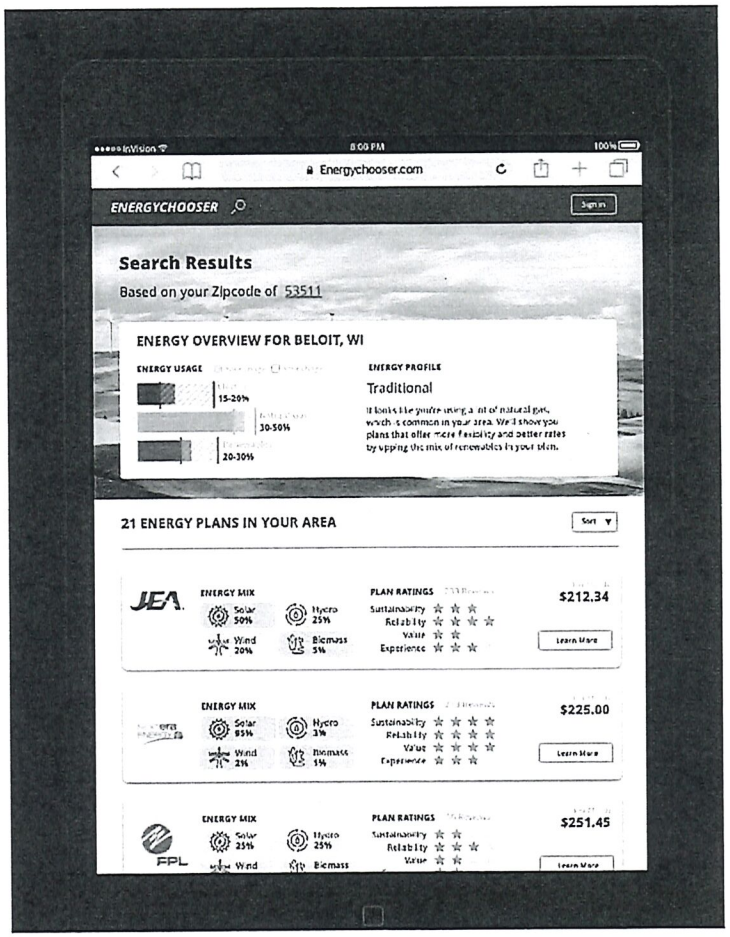
How might JEA use new technology and digital platforms to revolutionize the workforce?



INSPIRATION

Energy Providers Comparison Website

How might third party competition for new products and services impact our relationship with customers, as well as our financial position?



INSPIRATION

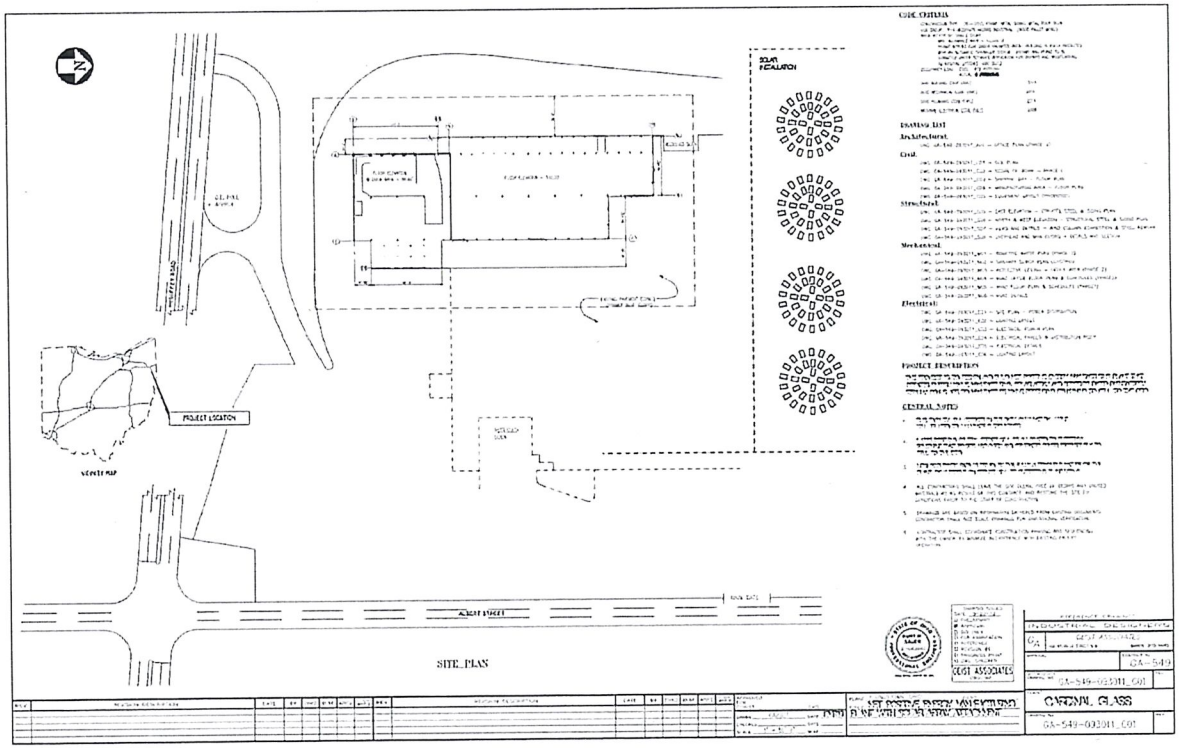
ZipCar and JEA EV Charging Solution Partnership

How can JEA build or grow existing partnerships and take advantage of new revenue opportunities?

INSPIRATION

Blueprint for net positive energy manufacturing facility

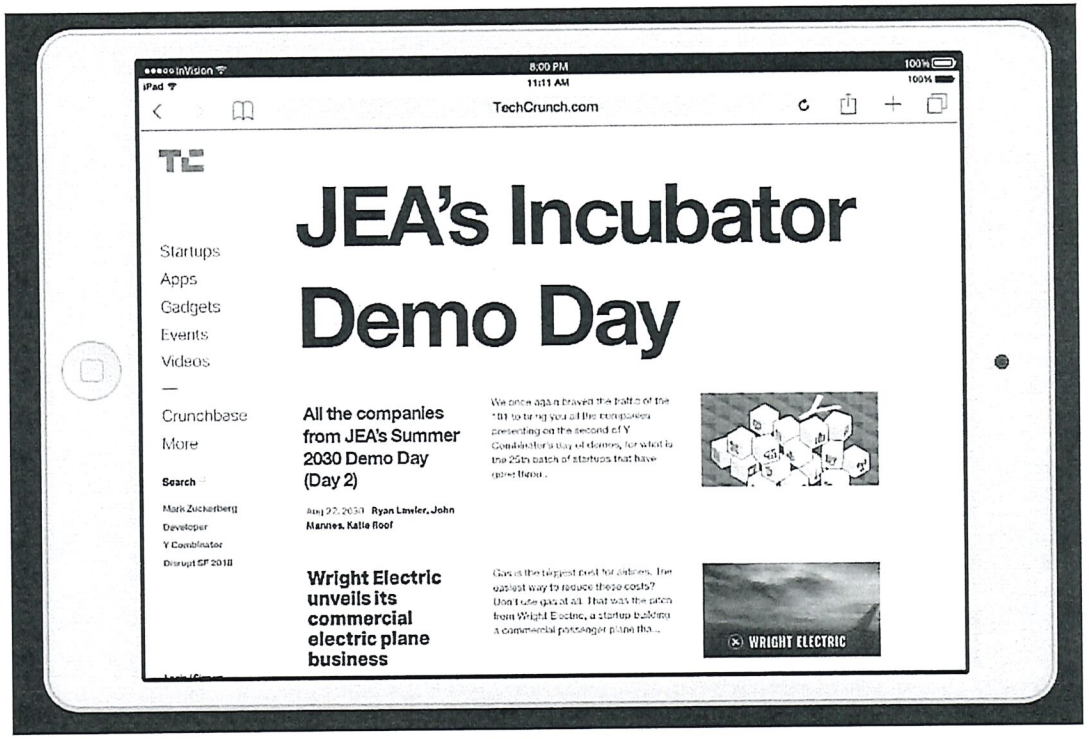
What would it take to drive deep decarbonization?



INSPIRATION

JEA New Tech Incubator

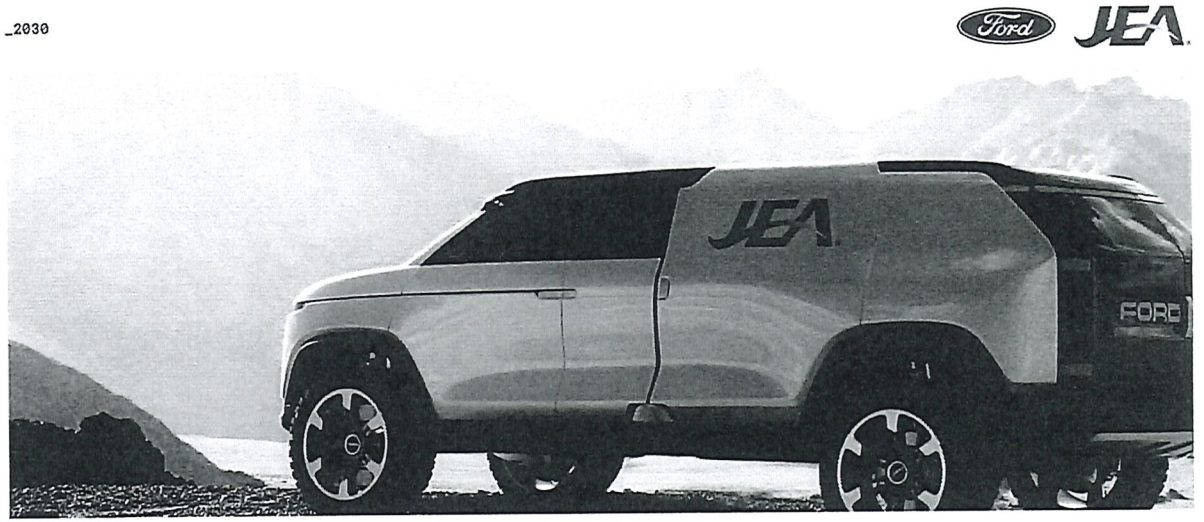
How can we work with start-ups to develop new water and energy solutions?



INSPIRATION

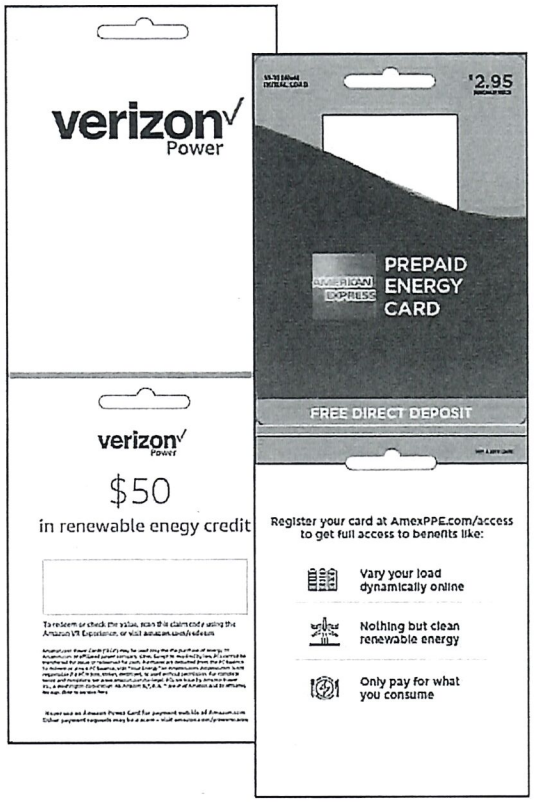
JEA and Ford Triple Play EV Solution Partnership

How can we help facilitate the future of transportation?



INSPIRATION

How might other infrastructure players cut into our core business?



Statement of Steven McInall – July 7, 2020

I have worked in various capacities at JEA for the past nine years. It has been my greatest professional pleasure to lead the groups that I have – Generation Planning, Fuels, Byproducts, Energy Planning, Water Planning, and Real Estate and Economic Development. The people that I worked with at JEA are among the finest I have ever known.

I am proud of all that my teams have accomplished over the years:

- Implemented solar plans that added 27 MW of utility scale solar and another 250 MW of solar currently being developed.
- Led negotiations with FPL for the closure of Scherer Unit 4 and replacement with a Power Purchase Agreement, saving JEA $200M NPV over 20 years and cutting CO_2 emissions by 500,000 tons annually.
- Part of the team that negotiated the closure of the St Johns River Power Park. Identified and secured alternative power sources via power purchase agreement. Closure saved JEA customers $450M NPV.
- Reduced CO_2 emissions by over 40 percent.
- Launched a company-wide innovation forum, "Watts Up?," to share initiatives across business lines.
- Investigated the integration of battery Virtual Power Plants, Reciprocating Internal Combustion Engines (RICE) and utility-scale battery storage as methods to aid the increase in solar energy on the grid.
- Started the redevelopment planning of the former SJRPP, so that JEA and the City can benefit from this valuable resource
- Planned for large scale purified water system on JEA's south grid, to offset future Consumptive Use Permit challenges.
- Prepared fuel hedging strategies to reduce fuel cost risk, as part of a $400M annual fuel budget.
- Developed and implemented Distributed Generation and Battery Incentive programs.

Through all this I have always acted ethically, impartially, fairly and honestly.

My greatest accomplishment at JEA was assembling the highly qualified team of individuals who worked for me, and without whom I could not have accomplished anything. I wish them and all my former colleagues all the best in the future.