Mark Willis:
Good afternoon and welcome. I call this meeting to order and notice an agenda for this meeting was provided to the Committee members and press on June 10th, 2020. This meeting of the Program Planning Committee is being conducted by video conference, the authority will post a video and a transcript of this meeting on the web. And from that we have a quorum. I would like to ask Sara LeCain, Secretary to the Committee to conduct a roll call of each of the Committee Members in attendance.

Sara LeCain:
Thank you, Mr. Chairman, and I will first note your attendance and now take the remainder of the roll call. When I call your name, please indicate present.

Authority Chair Richard Kauffman.

Richard Kauffman:
Present.

Sara LeCain:
Shere Abbott.

Sherburne Abbott:
Present.

Sara LeCain:
Chuck Bell.

Charles Bell:
Present.

Sara LeCain:
Ken Daly.

Ken Daly:
Present.

Sara LeCain:
Kate Fish.

Kate Fish:
Present.
Sara LeCain:
Jay Koh.

Jay Koh:
Present.

Sara LeCain:
And Gil Quiniones.

Gil Quiniones:
Present.

Sara LeCain:
All members are in attendance. Therefore, we have a quorum.

Mark Willis:
Thank you, Sara. And thank you to the Committee for everybody being able to be on this call. So, the next item on the agenda is the approval of the minutes of the 109th Committee meeting held on January 28, 2020. Are there any comments on the minutes?

Richard Kauffman:
I have none.

Mark Willis
Okay. Hearing none and hearing directly from Richard.

May I please have a motion approving the minutes and I'll just point out I found a slight typo which I will send to you guys. So, may I please have a motion approving the minutes?

Ken Daly:
So moved, Ken.

Kate Fish:
Seconded, Kate.

Mark Willis:
Okay moved and seconded. When Sara calls your name, please indicate whether you are in favor by stating “Aye” or opposed by saying “No”, I guess we can't say “Nay” Sara, please, call the roll here.

Sara LeCain:
Thank you. When I call each name, please indicate your vote.

Committee Chair Mark Willis.
Mark Willis:
Aye.

Sara LeCain:
Authority Chair Richard Kauffman.

Richard Kauffman:
Aye.

Sara LeCain:
Shere Abbott.

Sherburne Abbott:
Aye.

Sara LeCain:
Chuck bell.

Charles Bell:
Aye.

Sara LeCain:
Ken Daly.

Ken Daly:
Aye.

Sara LeCain:
Kate Fish

Kate Fish:
Aye.

Sara LeCain:
Jay Koh

Jay Koh:
Aye.

Sara LeCain:
Gil Quiniones.

Gil Quiniones:
Aye.
Sara LeCain:
The minutes have been approved.

Mark Willis:
Yeah. Thank you, Sara.

Okay, the next item on the agenda is the review and approval of the [Program Planning] Committee Charter. This we do annually, I believe. And this item will be presented by Peter Costello. Peter, please?

Peter Costello:
Thank you, Mr. Chair. Pursuant to the Public Authorities Accountability Act of 2005, each of the Authority’s Committees adopted charters setting forth each Committee's responsibilities. One of those responsibilities is to periodically review its charter and determine what if any amendments need to be made. These recommendations would then be presented to the full Board for approval at its meeting later today.

A copy of the current Program Planning Committee Charter was included in your meeting package. While management is not recommending any substantive changes to the Program Planning Committee Charter at this time, in reviewing the Charter prior to this meeting, I did notice there's a discrepancy between the number of members composed in the Committee and the Bylaws. And so, what I would recommend is that we make sure that they align such that the composition of the Committee is no fewer than three, no more than ten as the Bylaws do state.

Mark Willis:
I appreciate that you're noting that Peter, because I was going to ask here, we do encourage all Members to attend, all Members of the Board, to attend whether or not they are Committee Members because that saves or allows us to have a full discussion with PPC without having to repeat all that discussion for the full Board. So, I assume we don't need to do anything that Charter if people, Board Members come in as guests, so to speak, but I liked the idea of expanding it. I don't even know why we should limit it to 10. I'll leave that to you as to why there needs to be a limit on less than total number of potential Board Members.

Peter Costello:
Yeah. So, with respect to that, the Bylaws do read a maximum of 10 and so we could consider for a future meeting recommending a Bylaw change, certainly.

Mark Willis:
It's up to you. I, you know, I just think it's important. People attend. I don't think they're official Members or not is the most important thing.

Peter Costello:
Yeah, I will note from a legal perspective that, you know, the more that you officially have as voting Members, the higher the quorum requirement. So that would be a consideration.
Mark Willis:
That's certainly is a good point. So, I'll leave it to you. We just want to make sure that everybody feels comfortable attending the meetings, or the value of the conversation and the briefings. Whatever you think makes sense. So maybe 10 is too high. What is a quorum is it 50%?

Peter Costello
It's a majority. So, it's more than 50%.

Mark Willis:
Yeah. So that would be a, that might be a challenge. So maybe 10 is actually too high.

Peter Costello:
Okay. I am concerned with now that there is the discrepancy with the, let me just look at the Bylaws quickly while we're here. Well, it says no more than 10, so we can certainly keep it at six because we don't have to go up to the max so fine. I will note though, that we show in terms of our, in terms of our official Members, one, two, three, four, five, six, seven, eight, right now. And we are probably adding, you know, with your approval adding another one at the Board meeting. So, we should, with that in mind, I think expand to meet the Board, the Bylaw number.

Mark Willis:
I'm good, I just wanted to reconcile this and have this discussion, so I’m happy to follow your wisdom on this.

Peter Costello:
Okay. So, in terms of the vote that we're about to take, what I'm going to recommend is that we align with the Bylaws so that it's no fewer than three and no more than 10.

Mark Willis:
Sounds excellent, so Peter, thank you. Are there any questions or recommended, other recommended changes to the Charter? [Pause]. I'm not hearing any, somebody want to raise their hand or whatever. If not, I'm gonna assume that there are no additional recommendations.

So, may I have a motion recommending approval of the [Program Planning] Committee Charter, as modified, as Peter has suggested?

Jay Koh:
So, moved by Jay.

Gil Quiniones:
Second Gil.

Mark Willis:
Okay. Having heard the moved and seconded. When Sara calls your name, please indicate whether you are in favor by stating “Aye” or opposed by saying “No”. Sara?
Sara LeCain:
Thank you. When I call each name, please indicate your vote.

Committee Chair Mark Willis.

Mark Willis:
Aye.

Sara LeCain:
Authority Chair Richard Kauffman.

Richard Kauffman:
Aye.

Sara LeCain:
Shere Abbott.

Sherburne Abbott:
Aye.

Sara LeCain:
Chuck bell.

Charles Bell:
Aye.

Sara LeCain:
Ken Daly.

Ken Daly:
Aye.

Sara LeCain:
Kate Fish.

Kate Fish:
Aye.

Sara LeCain:
Jay Koh.

Jay Koh:
Aye.

Sara LeCain:
Gil Quiniones.

**Gil Quiniones:**
Aye.

**Sara LeCain:**
The Charter has been recommended for approval.

**Mark Willis:**
Thank you, Sara. And thank you the board. So, the next item is…

**Marie Therese Dominguez:**
Can I just add, sorry this is Marie Therese Dominguez, I apologize I joined the call, but I wanted to make sure that you knew that I was on and I vote “Aye”.

**Mark Willis:**
Terrific. Thank you. So, the next item is going to absorb the bulk of the rest of the meeting here. The item is an update on new directions for clean energy programs under the CLCPA, and a response to COVID, obviously. The Authority’s Senior Vice President for Strategy and Market Development Janet Joseph will start the discussion. Janet?

**Janet Joseph:**
Great. Thank you, Mark. Good afternoon. Just want to check that everyone can hear clearly. Yes. Okay, wonderful. So, this discussion today at the PPC will be focusing on future directions and emerging issues for our major clean energy programs at NYSERDA. 2020 is a big year for our clean energy programs. We are looking at the first triennial review of the Clean Energy Fund. We are substantially ratcheting up the goals and the aspirations under NY Sun. And we are ushering in a whole new chapter of renewable resource development in New York State. And those are the topics that we will be discussing over the next 80 minutes or so. So, I'm going to kick off the discussion with a focus on the Clean Energy Fund and looking at 2020 and beyond.

Next slide, please.

So, I will very quickly highlight the performance to date for the Clean Energy Fund. I'll tee up some emerging policy issues and strategic adjustments that we are considering, and time permitting, we'll touch on our response to the pressing and emerging issues associated with both the COVID health crisis, as well as the economic impacts.

Next slide please.

So, the Clean Energy Fund is comprised of four major portfolios that work together to meet our ambitious, clean energy and climate goals in New York State, the market development portfolio is the largest portfolio at $2.7 billion. And that portfolio is focused on decarbonizing buildings with a heavy focus on energy efficiency and electrification. And it also supports initiatives that benefit low- and moderate-income households. We have an innovation and research portfolio. That's a little under $1 billion that is providing direct investments in research and development
and clean tech startup companies, as well as providing support to build the innovation capacity in New York State to support a clean energy economy. We have our $1 billion Green Bank that is focusing on increasing confidence in financing for clean energy technologies. And we have our recently expanded NY Sun, which David Sandbank will talk shortly.

Next slide, please.

So, we have made significant progress under the Clean Energy Fund from its inception back in 2016 through 2019. And we are generally on track to achieve the original goals, but you know, the world is a different place today relative to where it was back in 2015 when we were scoping out these programs. And that's really what we want to focus on here today. Just very briefly, the chart that you're looking at, you may have seen this before. We use this in our standard annual reports and our quarterly reports. It shows the primary metrics and goals that we're focused on in the Clean Energy Fund. So, if you start on the left hand side of this chart, you can see our tenure budget at $5.6 billion, of that $3.9 billion of programs have been approved and the dark blue line. And that first bar shows that approximately $2.7 billion worth of projects have been committed to date.

So, what this shows from a cashflow perspective here, we are about four years into the tenure program. So, we're about 40% through the Clean Energy Fund from a time trajectory. And we've committed about 50% of the funds. So that represents, I would say, a healthy trajectory in terms of moving money into the market. Now, looking at the performance metrics that we care about, you can see the large bar in the middle annual mm BTU efficiency that essentially represents our fuel savings goal. We have already achieved that goal and moving on to the right, looking at the megawatt hours of renewable resources, as well as the CO2, we're making very good progress toward both of those goals. The annual electric efficiency to the left is a little below pace. And this is, this is something that we are looking at in terms of the composition of our future portfolio.

The only thing that I will flag or the remaining point on this chart is that the dark blue aligns, or the dark blue stacks do not present our, estimates of indirect benefits. There are the direct benefits alone. So that means that the benefits from the direct consumer, participant in a program, and as you may know, market effects and indirect benefits are really the hallmark of what we're trying to drive in the Clean Energy Fund. And we have just recently this year started several evaluations to characterize and quantify those market effects. So, we'll be reporting more on those market effects in 2020 and 2021.

Next slide please.

This next slide provides a little bit more color at the portfolio level on some of complements, I'm providing this as background, but given the time constraints we have today, I'm going to keep the conversation focused at the higher portfolio level. So, let's move on to the next slide, which highlights some of the emerging policy issues that are factoring into our orientation for the Clean Energy Fund over the next five years. So certainly, CLCPA or climate leadership and community protection act is a significant driver in how we formulate our programs going forward. We've talked about this a few times, but it certainly has raised the bar for the level of
ambition that we need to deliver in the Clean Energy Fund. The CLCPA very appropriately also places an increased emphasis on serving disadvantaged communities and the low-income consumers. It shines a light on the need to create quality jobs in the green economy.

And it shines a light on the sectors of the economy that really require deeper decarbonization transportation, for example, and buildings. So these policy objectives in the CLCPA will be considered, significantly as we assemble our Clean Energy Fund investments going forward. So that's a major driver at the State level at the local level. There are also enabling opportunities that will help us achieve our clean energy goals. Probably foremost among that this is the action in New York City with Local Law 97, or the Climate Mobilization Act, which sets similarly ambitious greenhouse gas goals. And we also have action at localities across New York State. So, we just hit a milestone this year, 300 clean energy communities across New York State and even amidst this pandemic. We've had two communities sign on to doing something like adopting the stretch code. So, while we may see a little bit of a pause in terms of local government engagement, perhaps over the next year, I don't see this local trend subsiding in terms of really driving a clean energy agenda forward.

Next slide, please.

So, we are in the midst of a transition from dependence on natural gas and this transition really needs to be accelerated in light of the CLCPA requirements and also in light of onto the ground natural gas supply and demand constraints. And this is something we're also be factoring into our programs in terms of new efficiency, New York, which represents a major and accelerated commitment to energy efficiency. One that was also codified through CLCPA. One of the results of New Efficiency New York is that utilities will be investing substantially in energy efficiency and in some cases doubling and tripling their budgets.

So, this is a great thing. It's also another enabler for success, but from a strategic perspective, it really underscores how important it will be for NYSERDA in the 2020 to 2025 period to sort of pick our spots. There are regions of New York State where the utility investment in energy efficiency will dwarf what NYSERDA has available for investments for example, in the downstate area with the planned Con Ed, National Grid budgets. So we need to be really smart about where we put our limited Clean Energy Fund investments, given that now, you know, last but not least, the COVID health crisis and the resulting economic recession has clearly created numerous challenges that need to be considered as we pull together our programs, going forward. And Alicia has talked briefly about this at our last Board meeting.

Certainly, we have seen significant effects of both of these. Sort of the one, two punch of the health and the economic crisis on low and moderate income households and on small businesses. And we need to be addressing this in the portfolio going forward. We've also lost 20,000 jobs in the clean energy sector in New York State. So, as we stand here today, we have a slightly diminished capacity to deliver on our goals. We've got to build those jobs back if we are to achieve our ambitious, clean energy goals. And that very much kind of relates to the last point on this slide. And that is one that we're very committed to that clean energy can be a, needs to be part of New York's economic recovery going, going forward
Mark Willis:
Real quick questions before you leave that slide, if you don't mind. One is decreasing capacity is all building clean energy or are we actually seeing less clean energy being produced?

Janet Joseph:
So, the 20,000 figure that I cited is for the totality of our clean energy industry. So that includes solar and energy efficiency as well as the rest of our clean energy industry. But from what we gather, the majority of that job loss is in the consumer facing side. So, we have less laborers to deliver on the programs. We have seen a decrease in uptake over the past few months, but we're in early days of tracking that data. And this is something we'll be paying keen attention to.

Mark Willis:
Thank you. Another quick point here is an economist kind of thing. I'm sorry, Kate, I see you maybe want to talk here, just one second. Somebody is making a lot of noise. As an economist here. The fact that Con Ed, National Grid are doing a lot downstate is obviously important to take into account. It's also important to think about other things and the sort of things that NYSERDA can do that they cannot do so. You know, if we can have a marginal impact then using economist language here, that's very high downstate. I wouldn't want to see that not done, just because there's a lot of other things being done downstate. So, what do we get the kind of investments that we can make versus climate and, and National Grid? It seems to me important. Well, just take that observation.

Janet Joseph:
That's a great point, Mark. And I think, an illustration of that is our ability to build the workforce. You know, if Con Ed and Grid are investing a lot of money in doing projects, we need to have the labor workforce. So, I think a really good synergy is to have NYSERDA to focus on the training and the workforce development and Con Ed and, and Grid are delivering on some of the programs. So those are the types of sweet spots that we're looking for.

Kate Fish:
I just think that, you know, with the, emergence of racial inequality becoming front and center, and the fact that we have so many disadvantaged populations who've been exposed to, you know, excess amounts of pollution, as, you know, as a result of where they live and, and that kind of thing, you know, which exacerbated their vulnerability to COVID-19, it, it just seems like there's an opportunity here to kind of link rebuilding the economy to the clean energy component. That's going to really significantly decrease the disadvantage if you want to put it that way, too. The folks who've been incredibly, devastated by COVID-19 and, you know, and are also front and center in terms of racial injustice.

Janet Joseph:
I very much agree. So, moving on to the next slide, please.

Richard Kauffman:
I'm sorry, Janet, it's Richard, just one other question. When you talk about the utility investments, these are funded, these are utility, resource acquisition, traditional resource
acquisition programs funded by rate payers, how much cause in the past we've talked about the different programs that utilities have done in terms of, you know, pay for performance and things like that. So, can you just talk a little bit about that?

**Janet Joseph:**
These are generally rate payer funded programs that the utilities will be advancing. I would say Richard, you know, the majority of them are of a resource acquisition nature. Although the utilities are trying some new models that are more, more market based, and those are kind of, those are under development. There'll be part of the mix.

Okay. So, I'm moving on. So, 2020, as I mentioned earlier, is the first triennial review of the Clean Energy Fund since it was established. So, this will include a review, that will have a public comment on our annual Clean Energy Fund performance report. NYSERDA will produce a synthesis and a summary report of the Clean Energy Fund market impacts. And, you know, this is our opportunity to take what is 60 different initiatives and sort of boil it down to something that is compelling and understandable to a broader market audience. And we will be teeing up some issues that we believe need to be addressed going forward. Some of the things we've just talked about and we expect to the PSC will issue an order on the continuation of the Clean Energy Fund, including any modifications.

So, the next slide highlights the issues that we expect will be deliberated in this program review. So, there will be financial issues that are evaluated looking at the collection schedule, looking at uncommitted funds, we expect the performance metrics and goals will be revisited going forward. We certainly will be looking at the requirements regarding disadvantaged communities under CLCPA. And we'll, we will be looking at that across all four of these portfolios, the market development, Green Bank, certainly NY Sun. We'll talk about that, as well, and even in our innovation and research portfolio, and we will be making some strategic and programmatic adjustments going forward, teeing those up in the review and getting stakeholder feedback on those. So, the next slide sort of summarizes what we see as the major strategic directions for the Clean Energy Fund. And I'm just going to read the statement on the left because it really kind of encapsulates what we think is important going forward.

So, you know, the need to build an inclusive, clean energy economy to support the economic recovery and accelerate the transition away from natural gas looms, very large in the future of the Clean Energy Fund. So, we certainly have to deliver on our climate goals and carbon will be an absolutely critical metric going forward, but these other public policy priorities loom very large in our, in our world today. And, and Kate, some of this connects back to the point that you raised, which we very much agree with. So, you know, to take this to the next level of granularity, some of the adjustments that are under consideration, so both.

**Ken Daly:**
Just a quick question or comment on your, a lot of point, you know, completely agree and support. Just one ring, have you on any analysis or do you prepare to do analysis on the potential headroom in the bill that could get lost over time as you transition from natural gas to be more expensive alternatives, hopefully down the road, you know, more economic, but is there any thought as to how do you manage that launch pad to ensure that the customers we're trying to
serve with the clean energy, have the head room, that bills to fund the investments it's in an organized manner?

**Janet Joseph:**
Yeah, so Ken I think that, so we have not comprehensively done that quantitative analysis to date, but that kind of a framework will need to be part of the climate action council deliberations. As we work toward producing a scoping plan that works for New York State works for consumers and the like.

**Ken Daly:**
Thank you.

**Janet Joseph:**
So, as we touched on, you know, both the…Yeah Richard?

**Richard Kauffman:**
I was just maybe gonna jump ahead a little bit, just a little about gas. I was wondering when you say comprehensive, I know in the past, NYSERDA has begun to start doing work on, carbon harvesting or carbon devalue. And, so when you say non fossil fuel solutions, I'm wondering whether you're also what you're thinking about in terms of, of things that may might be used to offset the emissions from natural gas as well as to displace natural gas.

**Janet Joseph:**
Yep. So, certainly within the market development portfolio, we're very focused on advancing electrification solutions as alternatives to fossil-based heating. So that's a key priority through New York state clean heat, working with the utilities in our innovation portfolio, we are planning to make investments in a range of I'll call it offsetting strategies, whether it's carbon to value, whether it's use of lands and forest. So, this again is kind of the beauty of the Clean Energy Fund. We are positioned through the resources in the innovation portfolio to try to drive some progress on the offsetting side of the equation. You know, so we've got, we very much need to work on both sides. We need alternative solutions for heating and cooling, and we need to push as hard as we can on the offset side of the equation. And those will both be in our plans going forward, you know, in different parts of the Clean Energy Fund portfolio.

So just one other point that we haven't touched on this slide, certainly, you know, the economic recession, calls for programming to maximize the job creation and stimulate the green economy. We can strategically use our workforce development investments to help build that labor market position, the market for success and strategically focus on disadvantaged populations and priority populations, which we are very focused on with, with our future workforce development investments. But we do need to get projects, moving things and need to be built. So we have to similarly look at how we reposition our programs to make sure that customers are making capital investments in building things, going forward.

And the first point, I think we've, we've touched on a few times here and do agree both CLCPA COVID impacts as well as the current discourse on racial inequities, all steer us toward...
increasing our investments in low and moderate income consumer programs and disadvantaged communities going forward. So, the next slide, just tees up a couple of final, big strategic,

Mark Willis:  
Sorry, Janet, just for a second. So there are a lot of other workforce training programs that are obviously gonna, I think, be more visible now because for the same reason do you coordinate with what is happening more generally or do you just look at this responsibility for workforce development within the energy or within the NYSERDA world?

Janet Joseph:  
No, we coordinate very closely with the department of labor in particular on our workforce development initiatives. We, we have a really good working relationship there, as well as, as SUNY. So, we do our best Mark to try to do that coordination and not just get siloed in the clean energy space. Right. So a couple of other big issues, for us as we look to the future, you know, when we were scoping out the Clean Energy Fund in 2015, we were looking at the best ROI return on investment that we could deliver. And in many cases that could be delivered with an energy saving project that gives you a 10% savings and a 15% savings. And that couldn't be a good project, but that is just not enough for the CLCPA world that we live in. So, as we look to the future portfolio, we're going to need to deliver those kinds of good projects that have great customer return on investments.

But we are going to need to have to show, we're going to need reference cases and business models that can demonstrate how to get to net zero carbon buildings. And that will be a big part of our future portfolio going forward. The other point to raise, and this is one that COVID really brought to bear. We will need to, as we look to the future, figure out how to optimize building systems for indoor health, as well as a carbon constrained world. So, you know, the movement toward well, buildings have been rising slowly and the green buildings field, but COVID just accelerated that. So real estate owners, property managers are all trying to understand that interplay between their energy management systems, between their heating, cooling, and ventilation systems and indoor health. And this is an issue that will be with us, you know, for a few years and something that we have to consider in our future programming.

And the last point on here, the need to adopt and pioneer and best to protect clean energy from climate resiliency risks. Again, this looms very large. I think it was Chuck Bell at our Committee meeting yesterday, pointed out that, you know, Siberia hit a hundred degrees yesterday. So, despite the best efforts that we might advance to transform our power system and reduce energy consumption, we have to prepare for this. There's really no way around it. So, these are the big policy drivers that we are thinking about as we look to 2020. And beyond. I'm gonna skip the next slide.

Richard Kauffman:  
Hey, I'm sorry. I'm going to ask another question here. I, you know, listen, I understand the issue of the change in focus away from a highest ROI or looking beyond that, but what I guess it goes again to the issue about historically the kind of ROI approach, often led us down the road of resource acquisition and the problem with that, the, a ROI approach can tend to crowd out the private sector based. So that's the places with the highest ROI or where entrance would start. So
that's, so when you talk about different approaches, I want to, I can like thoughts on how much you feel the CLCPA increased the focus on market based solutions or, or by virtue of the, of the channel. It means we have to do more things based upon, sort of mandated approaches. That's the first question. And then, if you just go back to slide out a second question, sorry. Sort of, finance related things. So, when we talk about indoor health as an example, you know, the there's some amount of money that is spent in healthcare with not very good outcomes. And so I'm just wondering as we talk about improving healthcare systems, I know that there was a, there was one, trial, I believe, or pilot project that talked about using some of the Medicaid money or some of the, I don't really remember, but I'm just, wondering whether in a broader way we can think about helping to, find provider health care dollars to provide a revenue stream for creating scale in improving building systems.

Janet Joseph:
Okay. A lot of, lot of meaty questions and issues there, Richard, but in terms of the interest in need in bringing in health care dollars to drive some of our broader clean energy objectives, we are still endeavoring to do that. You may recall that we had a healthy homes, pilot that was in collaboration with department of health. I think that's the program that you're mentioned that was slightly delayed because it has been delayed given the, the current health crisis, but we hope to get that back on track. So we are still pursuing that objective, over the course of the next year. And I will say in terms of looking at indoor health, as well as energy efficiency and carbon systems, and we are partnering with some major institutions, Northwell Health, Sloan Kettering. So, the healthcare community is, is really starting to look at this.

So, I think this issue is going to grow in importance going, going forward. On the question of does CLCPA bring in more market based or more command and control. I very much believe that we are going to need a portfolio of interventions to achieve CLCPA goals with a hefty dose of command and control. I'll call it market signals. And by that I'm talking about building codes and standards and product standards and the, like, which sends a signal to the market. I don't see a way to get there without having that kind of, regulatory certainty. Now that doesn't mean that the individual market actors will not be motivated by other objectives around return on investment. So, the magnitude of what we need with CLCPA is so great that I think we're going to need both the kind of command and control approaches as well as enough sort of market motivators that compel people to act. I just don't see how, how we get there at the pace without that sort of combined approach.

Marie Therese Dominguez:
Can I ask a quick question, can you just briefly, on the last bullet, adopted pioneer best practices, to protect clean energy investments from climate resilience risks, can you just elaborate a little bit more on that?

Janet Joseph:
Yeah. So, a couple of things, we are investing billions of dollars in building out, for example, a renewable energy power system, enduring is going to talk about that. We need to make sure as we are investing those systems in those systems, they are resilient to the future erratic climate that we project. That's one example on the building side, we're similarly investing substantial resources in green buildings. We want to make sure that those buildings are also resilient to
climate risks and other disruptions in potentially our energy systems. So those are the kinds of things that, that we are working on.

**Sherburne Abbott:**
I just want to go back just a quick point on the indoor health. One of the things to take a look at is, some of the impediments and R and D funding for indoor health work, because in fact, it's, it is incredibly silent. And so, some of the objectives, long-term objectives just can't be met with the way that the money flows. And so, it would be a good place to take to, to focus some effort.

**Janet Joseph:**
Okay. Thank you. Let's jump to the last slide, just being mindful of the time slot. Okay. So this is the last piece I wanted to tee up on this discussion and just to really highlight the COVID impact that we've seen and the responses that we are putting in place to both the health crisis, as well as the economic and suing economic crisis in the near term and the mid to long term. So, I mentioned earlier that we had a job seeing 20,000 clean energy jobs lost in, in New York State and many of those in the energy efficiency area. We moved very quickly at NYSERDA with a range of near-term responses to help our business partners, changing program rules and requirements providing increased flexibility and cash flow. We also provided enhanced investment in business development types of programs. So, these are programs that could bring in the next customer.

So, for example, cooperative marketing, we also provided a limited time offer 0% financing offer and kind of double down on our audit programs, Flex Tech Program to stimulate project development. And we've seen a pretty strong response across the board. The other thing that we did was really focusing on workforce. We moved to, primarily digital platforms for a lot of our training offers. We provided in some cases free training for dislocated workers, and we increased flexibility and duration of on the job training and internships and provided even more incentives for focusing on priority populations. And we made all those changes in a matter of weeks, on, for low and moderate income consumers. We've increased project funding caps. So, consumers get a little bit more benefit. And so clean energy businesses get a little bit of a chunkier, a chunkier project, but, you know, looking to the mid and the long-term, and at least in particular, in the energy efficiency area.

And I think across NYSERDA to where we're very much trying to build back stronger. So we are partnering with real estate companies, as well as ASHRAE to optimize indoor air quality and energy use and Sherry, maybe we can follow up on, on this, your, your observation about research, where we're hoping that ASHRAE can help, to some degree in terms of mapping out and conducting some of the research that needs to happen. And we are partnering with the Museum of Modern Art, Lincoln center, Pratt, Ruden, major real estate companies right now who are trying to look at how to optimize for carbon and indoor air quality. And we've put all that in motion in, in less than, you know, the hundred days that we've been dealing with the COVID situation. We are also trying to use this to sort of accelerate the energy efficiency movement industry's movement into the 21st century.

The solar industry can do a lot of customer acquisition from their desktop. They can use Google Earth; they can use some standard analytics. They, energy efficiency industry has been here too
for slow to do that. So, we are trying to use this current crisis to challenge the industry, to move forward with things like virtual and remote audits. And we think there was a lot of room in in that space and a lot of opportunity for energy efficiency businesses. And then lastly, and maybe, you know, I'll close on this point, we are exploring a range of programming options that can have a stimulative effect in terms of our economy and jobs. So, let me pause here. I want to make sure we have time for the other topics and see if there are any comments or reactions questions.

Jay Koh:
Well, I want to just quickly, just on a previous discussion that was raised by Marie Therese and others, you know, I applaud as you guys know the emphasis and the extension of the strategic focus on climate resilience, particularly the energy system, whether it be water or economy. I think we're in a very vulnerable position right now because of the COVID, more fragile environment, both economically and from an operational healthcare and other perspective. And that's exacerbating a lot of the issues we're talking about from an equity perspective had already been discussed. but what I would very strongly encourage her and love reaction from the management team is that the focus on climate resilience be actually quite robust and that means quantitative. And that means harmonized. And so we're not simply, you know, just giving more lip service to the idea that we think about resiliency in the context of climate change, but actually think about seriously considering specific stress testing scenarios, differences in engineering and building standards and specific that then can actually generate a measurable and potentially quantifiable through credit risk or other kinds of risk analysis and upside benefit for the agency.

I think it's taken a while for folks to begin to think about the effect side of climate change, which unfortunately are here. It was obvious effects, you know, and Ken and others and utility sector, you know, it's like 80 plus percent of fiber is, are weather related. We're seeing a lot more of that going forward and a lot more dependency on the criticality of our energy systems. So I would really hope that this is not merely another set of buzzwords that are added to the agenda of the agency, but there are very specific quantified mechanisms that are used to change the programming and design of our activities and interventions, whether it's increasing flood plain, you know, standards or changing our engineering requirements, or looking at capturing the resiliency benefits of micro grids, or storage. But that, you know, this be done relatively quickly. We will see five to 10 years of accelerating climate impact, unfortunately, and I really would like us to have a quantifiable way of capturing what that increased risk looks like and what the increased benefit of our programs are. So, thank you.

Janet Joseph:
Thank you, Jay.

Ken Daly:
Yeah. And certainly, second Jay's motion given my experience, but again, go back to my earlier point about the head move in the bills. That's probably the part that worries me the most. You really want to make sure as we go forward, that the customers who need it the most can't afford it. So I would just really encourage the team to do a lot of thinking through that glide path, as we do the electrification of heating and transportation, to ensure that the source of all that power is not going to just be fossil fuels because as you know, it's a much lower level efficiency than it would be using the same fuel for direct heating. So I think just getting that mix right, going after
things like oil, I still think of big opportunities, you know, well conversions, either to natural gas in the interim or ultimately to a cleaner fuel. But I think really understanding the bill impacts, is going to be in my opinion, the key to really, you know, getting a lift to the future.

Janet Joseph:
Okay, thank you.

Mark Willis:
Janet, this is Mark. I just want to, as the chair here, I just want to make you the chair here. You obviously have presentations from a bunch of your staff here, so, I hope you will monitor the time and let them know how long each of them have. So they all get a fair amount of time.

Janet Joseph:
So let's move on to the next presentation. David Sandbank will be highlighting the ratcheting up of the NY Sun, so we'll pass directly on to David.

David Sandbank:
Alright, thanks Janet. Can everybody hear me okay? Okay, great. So as I take you through this slide show I think I’m going to pause or just interrupt me please at the end of each slide, if you have a question and I think it might be easier for me to answer questions along the way, rather than me going through the whole presentation and then moving backwards. So feel free to jump into the conversation please.

Next slide.

All right. So right now I just wanted to provide you with a snapshot of where we are today with, our statewide installations, as well as our current pipeline. You can see that our statewide installation is 2.4 gigawatts that statewide that's NY Sun plus what's installed in, in Long Island pretty much and you can see that our current pipeline is, is pretty, fairly large and sizable 1.5 gigawatts, that pipeline. We have a lot of confidence in because of our high project maturity within the New York sun program. I am very confident in that pipeline. A lot of it is under construction now or soon to be over the next couple of years. So, we, you know, that doesn't feel like just signed contracts. It feels very good that those projects are going to move forwards with limited amount of attrition. When we dig into the pipeline on the right-hand side, you'll see a far, a vast majority of the projects. 1.3 gigawatts are community solar projects that is, was permeating through our distributed side of the shop solar projects. Those that's most of the capacity that is being developed right now. And you can see remote net metering projects, we have 90 megawatts and 100 megawatts of onsite. So it really is a community solar, you know, play for the distributed solar in, in New York state. So I’ll pause there and see if there's any questions

Mark Willis:
I'll just ask a quick question since the pipeline is so much community solar is a potential for in the future to continue with the vast majority of new so what should be community, or is there some kind of limit as to how much you can do in the community and need to look at other ways?
David Sandbank:
Yeah. And I'm going to dig into that a little bit later, but I would say that it deserves an answer. I'd say the direct answer is we totally expect this ratio to continue. We would like to see more remote net metered projects and onsite projects, but the best bang for the buck end, the most benefits we see in community solar are there. Plus it is such an amazing vehicle for the opportunity to reach low income customers and environmental justice communities. So it works on so many different levels with participation and financier is now we're preferring community solar over onsite or remote net meter because it's such a balanced approach with many customers and the ability to swap customers out. So it's a proven business model that I think will, Mark remains the same. If there's no other questions, I'll go to the next slide.

All right. So this is a great slide. This is one we could all be very proud. This is solar capacity that is built to the day and this is through, you know, all state solar. You could see that, you know, this is a different number than the prior slide, because this is the end of 2019. And you could see what a difference of, of just a few extra months did, you know, cause the last slide had had a March numbers and it was 200-300 megawatts more. This is just to the end of 2019. So the last two quarters have been pretty remarkable as far as just projects being built and interconnected. But what this is really demonstrating is clearly what we all understand is if, if you build it, the more capacity you build, the lower the costs will be right.

So the PV cap cost of a project is going down substantially. Albeit some of that is due to the community. Solar projects are really building on economy of scale. They're larger projects than what used to be primarily a residential program. So that has influenced the, the decrease in costs, but I've seen a real big decrease in costs in community solar projects, across the board for many, many different reasons. So that's a really good, this is a great metric to, to look at, to see some success. We've had costs coming down, deployment going up, any questions on this?

Okay, let's go to the next slide please. All right. So now this is, you know, a high-level summary of our transition from three gigawatts by 2023 to six gigawatts by 2025. The Public Service Commission order was approved on May 14th, to expand from three to six, a couple items to really call out one is we really transitioned from looking at just what NY Sun incentivizes to let's look at what New York State is deploying statewide. So we went from a NY Sun budget perspective in three gigawatts to a full on just everything that's interconnected statewide in the six-gigawatt goal. So that there's a, there's a big difference there. What that means is the total new incentivized capacity to reach six gigawatts, isn't another three gigawatts it's taken into consideration what's already been built outside of NY Sun and what we suspect will be built outside of NY Sun.

So what that means is we have budget to get us another 1.9 gigawatts of capacity should get us from three to six. And as I said earlier to Mark, most of the additional capacity is going to the large community. Solar projects is a matter of fact all the additional capacity is going to rest of state at this point, you know, subject to anything changing some of it going to rest of state residential and the majority going to this commercial industrial market in the rest of state. Of course, now that I've un-muted, my dog is going to bark and want to go outside. That's just the way it works, I suppose. So the total budget that was approved is $573 million. That includes a
The order authorized expenditures of $230 million to come from currently uncommitted funds. And then we need to figure out where the remainder of the balance is going to come from after the triennial review and the CEF review process, this $573 million budget, $200 million of that total budget or $200 million of the $573 is going to go to environmental justice communities and you know, low income or low to moderate income recipients. We have a carve out of a mandatory, $135 million to dedicated for grants and project adders. And we also are forecasting that we're going to spend no less than $65 million towards the same demographic, you know, from our base incentives. So when you add the $135 and the $65, that's how we get a total spend of $200 million to low income demographic and environmental justice communities. And we're going to dig into that a little bit on the next slide of where we're going to spend that money. So I will do that, but I'll stop and see if there's any questions here.

**Mark Willis:**
Your technical questions, you said rest of state, what does that mean? And also, can you give what a typical community solar project would look like if there is such a thing sure, sure. Of a certain size and nature or whatever.

**David Sandbank:**
Yeah, absolutely. So when I say rest of state, sorry, it's sort of inside game talk, it's really anything but con ed and long Island, is what we call it.

**Mark Willis:**
It wasn't downstate, but I just want to make sure.

**David Sandbank:**
Yeah. Yeah. It's the rest. Who's the primary part of the state, right? The community solar project makeup, we're really seeing a five-megawatt AC project, which really is about a 7.5 DC megawatt project is your typical project. Most of the projects are landing in National Grid and NYSEG territories. They probably could provide enough, you know, credits to about 500 to 700 customers. I would, I would save a makeup of those customers are at least 60% of the credits will go to households or renters. And then there probably be a decent portion of projects that have an anchor tenant where 40% go to. So if they're go a hundred percent, you know, households, then it'll be a 700, you know, customer list. If it's, you know, 40% anchor tenants, it'll be less.

**Mark Willis:**
If they sign up the customers in advance or that they build this thing with the assumption they'll be able to get a lot of customers?

**David Sandbank:**
They start signing up customers when they begin construction. Otherwise it's too hard to get customers with an esoteric sort of piece of paper. People want to see a real project and some projects are having shooting fish in a barrel, getting customers and doing really well. And some
projects are having difficulty getting customers. There's going to the, we had a recent order that's a complete game changer, which allows consolidated billing, which is gonna completely change the market, make it much easier to get customers, allow utilities, to really play a role in that, and also, really benefit and, and increase the reach to low income customers substantially. As a matter of fact, I could see community solar being a majority low-income play.

All right. So I think we can go to the next slide. All right. So when talking about the equity highlights, energy equity highlights I think we gotta do a better job with our stakeholder engagement process. Chris Cole, Janet and myself, are having really good conversations on how to do that and feel confident that we'll be able to engage where, you know, low-income stakeholders feel they're a part of the process and get proper engagement so that we can work on this together to come up with a, an effective program or programs. A lot of the environmental justice communities as we know, are very much affected by COVID-19 more so than most other areas. So we feel like that is even more of a reason why we should not only be mandated to concentrate it, but really feel that it's our duty to concentrate on, economic recovery within, you know, the energy, community, the environmental justice communities, some key programs to point out that we have in mind.

We're very excited about one is community planning and pre-development grants. We have a press release going out shortly that is going to talk about $10.6 million program that has been very successful to this point. And we're going to go with round two on that. So we're very excited about that. We are dramatically expanding our adders for incentives, for homeowners and affordable housing and just community solar projects in general to increase the participation for low to moderate income participants. And I'm very excited about why, as I said earlier talked about consolidated billing and the ability for that to open up a whole new game here and opportunities and engaging with utilities partnering with utilities to figure out what their role can be in this so that their customers can benefit from community solar credits and then a real challenging task, but one that needs to be done, which is really scientifically trying to figure out, where we can strategically place distributed energy resources, so that we're backing down peaker plants, you know, in the city in long Island. So we're looking into that to see if there's an opportunity for us to further incentivize projects that are in particular areas that we can see it minimizing the use of peaker power plants. So those are a few that we have on the agenda to discuss with stakeholders, and we're excited about moving forwards in the very near future. So that was a mouthful I'm almost done. So I'll stop and see if there's any questions. Perfect.

Okay. Next slide please. Okay. I'm going to skip this slide for the sake of time because Janet ran through it on her presentation. It's just talking about the COVID support, but Janet covered all these. So I'm going to skip this slide if that's okay.

We were required to file a coven report based on the commission's order of the six-gigawatt expansion. We submitted the COVID report on June 15th, not too long ago and I'll just give you a real quick summary of our findings of what we knew at the time with the information that we had available. And it's pretty simple. We felt that the residential solar market was definitely affected the most out of all the solar markets, customer acquisition. We were hearing as much more difficult especially for rooftop and community solar, because they rely on door to door and in person meeting to adopt customers for the, for projects.
So customer acquisition was paused as so, so as much was the construction of being paused. We heard that thousands of employees were laid off and we were uncertain about the rate of recovery. I feel pretty confident that a rate of recovery of employees being rehired is going to be certain and fast. So I'm not terribly worried about that. There will be casualties like there are in any sort of recession, but I feel like the industry will fully recover and component pricing has not significantly increased, because it sounded like our, you know, the supply chains were interrupted a bit, but so was the demand for those supplies. So they sorta went together, dipped together. So it wasn't a major issue and we're going to keep an eye on project financing. We think it could take a hit, not sure though.

I did hear there's increased uncertainty and possibly higher interest rates, but that remains to be seen. Our conclusion is to do nothing right now and really monitor the market and make sure that we're going to be able to obtain our and reach our goals that we set out to do prior to the COVID-19 pandemic. And we feel we can do that, but we're going to have to really maintain our vision and communication along the way with the stakeholders and getting there. So that concludes this presentation. And I'll pause to see if there's any questions.

**Charles Bell:**

David, could I ask? I know a lot of our focus here is understandably on lower and moderate-income communities but I'm just wondering, what is, how are things going with uptake of solar by middle income families? And one of the contextual things there, I feel is the, we do live in now, how have a high-class situation for many homeowners in New York State. So at the margin, they don't necessarily have a lot of extra cash being pressed in the consumer community to possibly accept pace financing for a pilot account, which our groups are very concerned about. Cause we don't see that as a particularly safe form of financing. So I'm just wondering are there things that could be done to speed uptake of solar by middle income customers that like I see the 0% green jobs in New York thing and that's very positive, but I'm just, just wondering your sense of how that's going as a market development thing.

**David Sandbank:**

Yeah. I don't have tons of insight into exactly the breakout of low income, moderate income, and just mass market, you know, subscribers and or solar recipients. But I can say that I really try to maintain a balanced approach where we're not totally reliant on community solar to reach everybody. And that rooftop solar has a, a great role to play here because, you know, we have this Green Jobs - Green, New York loan for low to moderate income customers as well. That, that is very beneficial. And I think that community solar there's going to be such an abundance of it, that we're going to be able to reach a decent portion of subscribers that it's not only going to be low income only, but I don't have a real issue prioritizing low income, but I agree with you. We don't want to lock out anybody else from participating in this. And I feel with a balanced approach, we'll be able to get there. And Jeff Pitkin, myself are reaching out to the industry to really look at financing for residential to see what kind of barriers they have right now. And what, if anything, the state role should be in playing to help out in that area.

**Charles Bell:**
Oh, that's terrific. Yeah. I just know from my work on consumer issues, there's an awful lot of middle-income people that live paycheck to paycheck also, you know, so I, you know, I appreciate it. We want to dedicate our resources to bond moderate and I strongly advocate for that as well. So, but thank you for your efforts to, to think about those things.

David Sandbank:

Richard Kauffman:
I have a question, but I don't know how long I'm going to be able to verbalize it. So NY Sun had an original objective of 3 gigawatts, right? And it was going to be a long-term commitment that gave the industry a line of sight so associated with, with the declining grants. And so, and the idea was that after, after that, after with the investments that the industry would make us that the residential solar industry would be able to stand on its own without further support things have changed, but maybe you can sort of describe how much of the extension of New York sun is based on that it, that the original objectives of NY Sun needed to be, you know, weren't going to be achieved with the old NY Sun or that the, of New York time reflects really the program to go on these other artists. And again, I haven't asked the question very well, but out of what I've said,

David Sandbank:
I know exactly the question you're asking and it's a great question. I think Richard, the easiest way to answer that is number one, if you go from, if you're given 10 years to go to 3 gigawatts and two years to go to 6 gigawatts, there has to be, some momentum to get there. I'm going to let my dog out. I'll be right back. Give me two seconds. Cause the barking is probably annoying everybody.

Mark Willis:
Richard, this is Mark. Is part of your question as to what the ultimate goal here is on this? Are there any subsidy will be needed over the long run or this will still set them on this glide path to market?

Richard Kauffman:
That’s where I want to get is the, was the basic philosophy of giving a, a NY Sun is a as a mechanism for getting an industry to a sustaining basis. Is that, still the underlying philosophy here?

David Sandbank:
Yes, it is. And I'd say that if we did an expand six gigawatts to play it out, and it was three gigawatt programs, self-sustaining we would have a certain portion of the market that was self-sustaining. And another part that really wasn't right, it would have to be the best bang for the buck projects that can continue on and it would be fairly limited, but it would, but it would work. I'd say that going to six gigawatts is giving us more time to really dramatically lower soft costs as well as there was a lot of regulatory improvements that have been made in the past a year that made a substantial difference, for community solar, especially, and, and other, you know, the value stack and everything else. So it bought us some time to be able to allow projects and
financier's developers to adopt the new regulatory, rules and really use it to their benefit and everyone else's benefits and move forward.

So it still was self-sustaining program. It still is a self-sustaining program, but I think it lets us evolve more into something that's much better. That is going to be okay. At three gigawatts we could have gotten to, we would have gotten to three gigawatts by 2023 and a portion of the state would be, would benefit as a self-sustaining market. Now we have a better time horizon to be able to build projects that are going to be much more beneficial to the grid because of the value stack and deliver time and place benefits that I'd say ordinarily, we wouldn't have gotten to, if we didn't do this.

Janet Joseph:
Mark can do a time check here. I'm just a question as to whether we could run through maybe 2:10, and that would allow an opportunity to tee up some of the issues on renewables. We could take it as a part, one discussion and, and pick it up in the next Program Planning Committee meeting for a deeper, deeper dive.

Mark Willis:
Alright, well, what are, whatever I say is not relevant, it’s what other people's times are, and do they have that available? So I would try and do what you can by two, and then if you need to go over and people can stay, then that would be great. But we should move as quickly as possible here to probably meet the to two o'clock and then to get the bulk of what you want across, and then we can have the conversation or whatever afterwards, whatever you think. But I think we have to be respectful people to schedule here.

Janet Joseph:
Okay, well, let's move on then to the next topic, at which Doreen Harris will tee up on the next generation of renewable energy development in New York. And we can take this as a part, one of the discussions to follow in, in a deeper dive at the next PPC. It's a pretty meaty topic. So Doreen please.

Doreen Harris:
Sure. Yes, thank you Janet and good afternoon to the Members of the Committee. Again, I'm Doreen Harris. I expected this to happen. I am ready for you Mark. I'm happy to have a briefing with any of you who may have particular interests in the topic of how we get from here to there, which is the subject of a white paper that NYSERDA staff and the department of public service filed jointly. Just, just recently and, and really that's, that's the topic of the white paper it's, it's focusing on the CLCPA goal specifically of 70 by 30 and how we can explicitly meet that goal from the perspective of real projects with real deliveries toward the CLCPA objectives. So we've all seen this, this table, and I just wanted to sort of calibrate your interest, your attention with regard to that particular aspect of the paper.

Next slide please.

Several aspects of this white paper that is now subject to public comment, and most notably I had indicated it defines the pathway to get from now to 70, by 30, along with several policy
proposals that are integrated in that, in that, effort. I'll focus on just one today though, on next slide, please.

So this is a chart that describes where we would anticipate that we will be in 2030, which is I'm an expected New York state load of 151,000 gigawatt hours. We can talk about the various countervailing factors that would raise or lower load in future years, but that is our base case for this analysis. And essentially what we took is the various wedges the dark blue being the current renewable energy that is delivering to New York, the light blue being the amount of renewables that is under contract with the state now and ready to be constructed in deliver. And then the goal being the prize, what do we need to advance between now and 2030 to get up to that 70% number? And really the focus of the paper is on really all of these wedges in different ways but focusing on the yellow as the most tangible aspect of our goal.

Next slide please. Next slide please.

So when we look at how we get from here to there, it is important to note that on the left side of this graph, you can see the products of our work to date. We've run many competitive solicitations successfully for both land-based and offshore wind all of which will expect to contribute to our 2030 goal. And in addition, this paper sets forth, future procurement targets, to add to that add to that volume, notably an estimate of a procurement of about a gigawatt of offshore wind, annually between now and 2027. And then also, the real increase in advancement of land-based renewables on the order of about a 40% increase over historic procurement. And when one looks forward, you can see that our option when policy actually advances beyond 2030 to the full nine gigawatts by 2035 goal. So this is setting forth, a clear pathway to get from here to there.

Next slide, please.

The paper does analyze the costs and benefits of these procurements. The big headline is the levelized bill impact of the program for tier one, which is land-based renewables and offshore, which is about 1.4%. However, when you add the carbon benefits alone, we see a combined net societal benefit of over $11 billion over the life of these projects. And obviously we know in addition to carbon, we can certainly count on many other societal benefits that are not quantified in this analysis.

Next slide, please.

Richard Kauffman:
Doreen, I wanted to ask a question about the societal benefits without getting into much in the weeds. I know that, you know, that, just where the, who's calculations are we using for societal benefits.

Doreen Harris:
Sure. Richard, so this analysis was, was first of all our own staff analysis, but we conducted it in accordance with the commissions benefit cost analysis framework order from 2016, which essentially takes account of electricity electric system values as well as carbon externalities. So
it does sort of note the other pollutant benefits, as positive health benefits, but are not part of the framework.

**Jay Koh:**
Just a resilience point from before. I mean, so components of large scale, including hydropower will obviously be affected over some period of time by changes in the climate, right? So we've seen some, several instances and there's a report released last year, but the European bank for reconstruction and development on hydropower shortfalls due to increased drought, frequency and severity and volatility of hydro resources. Similarly, you might think it might be adjustments that need to be made in the design projections or confidence intervals around offshore, especially with large scale offshore, which would be deployed as a major component of our achieving our goals. So can you comment on what the current plans are to quantify and systemically approach these issues around resilience, including around obviously, you know, some of the land and power transmission issues that will be generated by offshore but specifically in the hydro and in sectors, I think is limited more limited. In fact, typically in solar, we may have increased cloud cover issues generated by, changes in weather patterns, but I'd love to see if there's some systematic approach that we're taking to either getting better data for proforma or risk or design or something along those lines that actually can quantify some of these increasing climate related risks.

**Doreen Harris:**
Sure. Yeah. Thank you, Jay. It is true that we would end the paper notes. The fact that the baseline that is the renewables that are delivering now to New York are subject to fluctuation. By virtue of obviously the fact that the majority of them are hydroelectric sources as it exists today with a small amount of wind and increasing, solar as well. So it, it speaks to the fact, although, resilience is mentioned from the perspective of program design, as Janet had mentioned, the program itself is designed to have for the sales CPA biennial review process. And the reason for that is just that, that the there's an acknowledgement that the baseline that is today is susceptible to change for multiple factors. And therefore, you know, this panel I'll review is intended to allow us to look back at new data and new information.

So as to inform the trajectory of the amended trajectory that we need to hit, I will say this tier four proposal that I am not going to be able to say much about is explicitly looking at the value of renewables delivered into New York City which I think is, is actually quite critical when we think the flexible grid that we're looking for, but also the grid that focuses on this downstate market, which clearly is propagated by fossil fuel fire generation right now. And so we've proposed a tier four with specific conditions for azure power resources as noted here, as a potential flexible resource that could bring in significant renewables into this downstate market. So, so I mentioned that just as a related issue around hydropower I will skip all the way to the final slide. There are several other elements of this proposal that we won't go into, including a repairing proposal, which would allow existing renewables as they reached the end of their useful life to be repaired and deliver to New York.

We also have a program under consideration by the Commission for the support of these baseline renewables known as tier two and, and ultimately this package, which, which I would like to characterize as a very critical implementation step in the seal. CLCPA is now going to be
subject to a notice and comment process. Certainly a technical conference will ensue and ultimately commissioned orders, which would address the various elements of this white paper. So this was a huge lift by the entire NYSERDA and DPS team. And I certainly want to acknowledge my colleagues and both agencies too, for a, what was a really groundbreaking work, really, looking to achieve these lofty goals of our state. So, with that I'll conclude my presentation and, and re offer the briefing. Should anyone have particular interests?

**Mark Willis:**
Janet, do you want to say a few words at this moment?

**Janet Joseph:**
No, I think we can open it up to any questions or discussion. Thank you.

**Mark Willis:**
I think what we're gonna do is yeah. I, there's no way for me to, other than ask everyone if they can stay for a few minutes. So I'm going to interrupt here and just ask if there's any other business, and if there isn't, I’m going to I don't know if I need to officially adjourn the meeting, but then we can come back and let people ask questions. So maybe if I can get some advice here from Peter, shall I just adjourn the meeting at this point and then allow for discussion or do we have to do this session within the context of the meeting?

**Peter Costello:**
So you're going to have a quorum present, so you should keep the meeting open.

**Mark Willis:**
Great. Okay. Very good. All right. So, why don't we, why don't I just ask if there's any other business, I’m not going to adjourn, but I just want to make sure people, if they have something that I know we need time for, if I don't hear anything. We will go back to the discussion we were just involved in. [Pause].

Okay. Not hearing any Janet, why don't you open it up again?

**Janet Joseph:**
Yeah, I would just pass the floor to the Board members to see if there are any additional questions or comments on this last presentation on renewables, which we covered very, very quickly.

**Jay Koh:**
Maybe just one simply here, which is like worst all digesting as we sat on the Audit and Finance Committee earlier today to kind of add to the facts of both the healthcare crisis from COVID operationally and then Similarly and pretty limited impacts on some of the lending activity that we have done across the agency and specifically in NY Green Bank. I'm just wondering if there's any additional thoughts about look backs or how programming is going to more deliberately shift either towards a focus on employment. I know that there's some of this one's covering the equity component here, or anticipations on timing given the fact that we may be facing quite different statewide budget and also potential stimulus at the federal level and that's being programmed,
and you know, if you had any kind of high level comments on that and in the attainment of our objectives here, that would be really useful to understand.

**Janet Joseph:**
And Jay, just to clarify, was that a question across the broad portfolio of what we'll be advancing or were you speaking specifically with respect to our renewables work?

**Jay Koh:**
I'm thinking about the renewable side of it. I mean, you know, New Jersey just announced the opening of a major attempt at a port for offshore. We should be doing some similar things, I think, to support job growth and like an execution of our strategy here in New York state. But I would assume there might be some slow-down in some of the procurement process or some of the operational pieces of it's hard to anticipate what the conditions are going to be like even after reopening and other potential implications. So just would love thoughts on the renewable side.

**Doreen Harris:**
Sure. Jay, you know, per the tone and the substance that Janet and David delivered earlier, you know, we specifically see these types of resources, these, what are essentially large infrastructure projects as a driver of economic activity around the State. And, and it is true that I'm in the midst of the COVID pandemic. You know, we did not feel the time was right to issue our 2020 solicitations until such time as the work could safely continue and people could do their work effectively. There are actually, we are, we have pending our land-based solicitation for this year and our offshore winds, lots of teaching for this year, coupled with a commitment from the governor in port investment for offshore wind as well of at least $200 million. And so we're, we're ready, really. We see the markers improving to the point where we believe, you know, the conditions are much different than they were a couple of months ago to move those solicitations forward.

But as part of those, we very much expect this is our buying power at work that these companies are going to make a firm and serious commitment to New York. Both from the perspective of, you know, the, the projects themselves, but also the economic development potential that will ensue. And so this paper, and, and in fact in general speaks to our continued commitment to economic development activity as a result of our commitment, both from the perspective of long-term jobs in short-term investments and now infrastructure investments as well. So, so it is a priority of ours as we advanced in 2020 and beyond.

**Jay Koh:**
Yeah, that's helpful. Thank you.

**Mark Willis:**
Let's see if there's one or two more questions, and then I think we will we'll turn off.

**Kate Fish:**
I just have one comment, one, this is, it's so exciting to see this and, you know, to be part of this whole enterprise, you know. The Governor and his comments every day, talked about the fact that we're not going to go back to normal where this is good. This is a reset, and, you know, we
need to do things differently. And I think CS clean energy is one of the drivers for, kind of jump starting the New York economy. But I just want to make sure that we are, you know, recognizing that in any press releases in any communication about this, for NYSERDA that this presents a, a really game changing opportunity for the people of the state of New York kind of led by the Governor and being implemented and led by NYSERDA.

Doreen Harris
I couldn't agree with more Kate. This is, and in fact, that's exactly the framework that we're thinking about as we, again, as we pivot to look forward and are now able to. It's a, it's a huge time of reflection and of recalibration and, and our intent in our, in our purpose is to stand behind the governor's intent, which is that clean energy is a vehicle for this rebuilding and that resetting our thinking around the value that it provides is indicative of the many changes that we've for the last few months. But as all the more in sharper relief, obviously given this stance in our state.

Kate Fish:
I tried to share with the group, but there's no chat option here, a report from the New York Times recently, that just said that you renewable is shattered coal in terms of generating electricity for 90 days in the first couple of months of the year. So, you know, back to the question of, at what point do we, are we having to continue to subsidize this transition it's happening.

Mark Willis:
Okay. I'm just waiting to see if there are any other comments from any of the Board Members, if not cool.

Richard Kauffman:
Mark. I have one, if you're looking for one.

Mark Willis:
No, go for it, right. You'll be the last appropriately.

Richard Kauffman:
No, no, no. I just, so Doreen, I'm pleased to see the zone J for, and so I'm just wondering, this really now creates the ability or the potential vulnerability into a where there's a, wherever there's a big, demand. So I'm just wondering what you're thinking about hot in terms of utilities now highlighting, I'm thinking about the offshore wind coming in and paid the ability to where we are and how utilities can think about, demand side resources to its all of these renewable certainly becoming in zone.

Doreen Harris:
Yeah, it is true. And in fact, you know, our, our initial assessment is this isn't as much of a 2030 issue, but it is a, it's a potentially very significant issue as you move past 2030. I will tell you that as part of the various efforts that are underway to this year's budget amendments through the accelerated renewable energy growth and community benefit, there are a number of different assessments underway around both from the bulk and the distributed side as to how our grid functions, you know, from a planning perspective under these scenarios. But in addition, it's of increasing importance to NYSERDA, to think about how our contracts influence bidding
behavior in the wholesale markets as well. From the perspective of the particular mechanisms that we use to pay for the wrecks that we're buying. So, all of this is actually noted in the paper as an area of priority as we advanced through the next decade.

Richard Kauffman:
Thank you. Yup.

Mark Willis:
Okay. Janet, we're now at 2:10, so, if you're okay, I'm going to suggest that I entertain a motion to adjourn. Are you okay, Janet?

Janet Joseph:
Yes.

Mark Willis:
Okay. So unless there is other business, which I did not hear before, unless somebody come up with a sense, they have a motion to adjourn this meeting and let me just thank Janet and the whole group it was just terrific mission. Thank you very, very much. Thank you to the Board. Great questions. So, we have a motion to adjourn this meeting, somebody wanting to speak?

Jay Koh:
So moved.

Sherburne Abbott:
Second.

Mark Willis:
Okay. Thank you everybody. Right? All in favor.

All Members:

Mark Willis:
Okay. Thank you all. We'll regroup shortly. Bye.