NYSERDA'S 126th Program Planning Committee Meeting
January 29, 2025
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Sherburne Abbott:
Afternoon and welcome. I call this meeting to order. A notice and agenda for this meeting was provided to the Committee Members on January 17th, 2025 and to the press on January 21st, 2025. A revised agenda was issued on January 28th, 2025. This meeting is being conducted by video conference. The Authority will post a video and transcript of this meeting on the web. To confirm that we have a quorum, I would like to ask the Committee Members to introduce themselves. I'm Shere Abbott, Chair of the Committee.

Dale Bryk:
Dale Bryk Committee Member

Charles Bell:
Chuck Bell. Committee Member

JoAnne Hewett:
JoAnne Hewett. Committee Member

Jen Hensley:
Jen Hensley, Committee Member

Richard Kauffman:
Richard Kauffman, Chair of the Authority.

Lindsay Greene:
Lindsey Greene Committee Member

MarieTherese Dominguez:
MarieTherese Dominguez Committee Member

Sherburne Abbott:
I like to note. Thank you all. I would like to note for the record that we have a quorum, but that Lindsay Greene is participating by video conference as per the extraordinary circumstances exception under the Open Meetings Law and our By-laws, Lindsay's participation will count for votes but will not be included and count for quorum. Thank you. The first item on the agenda is approval of the minutes of the hundred and 25th Committee meeting held on October 23rd, 2024. Are there any comments on the minutes? Hearing none, may I please have a motion approving? The minutes

Sherburne Abbott:
Second.

Sherburne Abbott:
All in favor? Opposed Minutes have been approved. The second next item on the agenda is proposed revisions to the Regional Greenhouse Gas Initiative Operating Plan. John Williams, Executive Vice President for Policy and Regulatory Affairs will present this on

John Williams:
Thank you Chair Abbott and the Members are asked to recommend approval of an amendment to the RGGI Operating Plan. So this amendment process is our annual RGGI Operating Plan update process. As always, we will take a three-year perspective of this and that will be done in line with new revenue assumptions that we will be putting forward to you. So the proposal that we do have was presented to stakeholders at a hybrid meeting on December 5th. Both in person as well as on webinar stakeholders were also allowed and we had some input and some back and forth during that meeting. There was also an opportunity for stakeholders to submit written comments by December 23rd and all of those comments we received comments from four different entities. All of those comments were taken account of in the final proposal that is before you today. So just to get to revenue projections, taking our traditional approach of doing a lookback of the last 10 auctions that arrives at a value of $15.71 per allowance and we utilize that number in the revenue projections on a going forward basis.

This is also keeping in line with our approach to a conservative number. So we do maintain some flexibility and we will make any adjustments should we feel like revenues are coming in substantially deviated from that number and we'll certainly be back to the Board on an annual basis. But if significant changes then we would be back on a midyear basis. So with that revenue projection, we provided the proposal for what the program spending over the three years would look like just to give it in some categorical perspective. So we've got about $70 million going to renewable energy activity. That's both statewide activities for the NY-Sun distributed solar installation activities as well as looking at solar installations on public schools and public buildings throughout the state or maybe that's just on Long Island I should say actually other programs handling the rest of the state $641 million for energy efficiency and building electrification.

So these are additional allocations to the Empower+ low and moderate income efficiency program. Also allocations for energy efficiency and electrification in schools in disadvantaged communities. Some funds also go into the Buildings Retrofit Challenges programs which are looking for innovative approaches for new construction and new design approaches in the building sector. $357 million for innovative greenhouse gas abatement strategies. This is actually how we get to our charge New York Transportation program. So continued support for the infrastructure build out as well as the vehicle rebate activities that are supported there. Also additional funds to help us look at new policy activities that we have been working on and will continue to work on over the year. One of the examples of that is our clean transportation step analysis that we'll look at potential policy decisions for a clean fuel standard in New York going forward, $161 million for community clean energy.

So that includes a number of different activities including support for business development and economic development in New York State in the clean energy space and trying to build out supply chains. So New York State has an economic opportunity as well as the energy and environmental outcomes from the clean energy work that we do. Additional support for workforce development, certainly that is something that we need that trained and skilled workforce as well as our clean energy hubs which are located throughout the state and are designed to ensure that there is local awareness of the activities that individuals may be able to take advantage of. So additional support for the energy hubs program, additional fund allocations to the Greene Jobs-Green New York loan program as well as some other activities that you'll see in there. You've got the full menu of activities that are being proposed and that's really the entire portfolio was based on your packets. One more maybe data point to help with the consideration is that when we look at the portfolio of activity before you, we do estimate that if all of the investments went as planned, 43% of those investment dollars would benefit disadvantaged community areas. So that is keeping us in sync with the directions of the Climate Act in New York. So we think that's a good outcome there. So that is where we're at. You have a lot of other information and happy to take any questions.

Sherburne Abbott:
Thanks John. I'll leave it up to,

Jay Koh:
so three quick questions. One is, is it fair to say the RGGI funding is among the most flexible sources of funding we have at the agency?

John Williams:
It is flexible within our regulatory parameters, but I would say that we have the ability to look within those regulations and understand and capture those opportunities outside of say the investment planning process that a lot of our public service commission funds are really targeting that, so certainly we do want to maintain possibility.

Jay Koh:
Second question about results. So threaded through a bunch of these programs, activities, the zoning programs and so on are going to be implications for resilience in the context of installing heat pumps in a way that are not going to be destroyed if they're flooding or innovation problems. But I would just strongly encourage consideration tracking of the actual measurement of that value in the deployment of these funds if we are among more flexible that we have and just the sense of making sure that we're making good use of rate payer funding so that these corporate increasing physical risk considerations because we are going to see and hopefully be able to abate challenges like the LOS equivalent Los Angeles disaster that we're seeing right now and it would be just not to not account for those considerations in the deployment funds. Then the third question is what are the implications or what's the link we consider exercising over the next three or projected course here in the event that new objectives or concerns are broadly but specifically in the context of the resilience question. NYSERDA is involved with the statewide planning around adapt where the fire situation in Los Angeles has not been concluded. Extreme weather events which many times here in New York State including severe damage to infrastructure unfortunately likely to accelerate. And so I'm just wondering how if we need to consider reallocating some of priorities within the RGGI program, which is again one of the most flexible parts of budgeting, how we go?

John Williams:
Yeah, so I would say just to that annual sort of budget cycles as those types of opportunities do emerge, we want to take advantage of em. That can come either by taking account of revenue differentials that we might be experiencing, but certainly if there are certain opportunities that we say might be higher value than there is always an opportunity recalibrate what the portfolio looks like over that time period. So I think we would definitely do that. We should always keep an eye on what those opportunity spaces are when we walk cycles on the resilience specifically, there is going to be a lot of activity happening within the authority that as we are making the investments, we are going to be looking for some of those resilience characteristics and how do we just build that into normal business operations. So we'll hopefully be capturing a good deal of those resilience opportunities as we are putting that additional lens on the work that we do both on a generic basis but also what might be some of those specific activities that we should be encountering more so that is becoming an ever more focal point of the way that we deliver.

Sherburne Abbott:
Can I add to Jay's point for a second that the characterization of the resilience initiative funding in the way it's characterized and in the budget is currently under energy efficiency and electrification of buildings. I think one of the places that you're headed is to see that lifted out somehow into a category that recognizes the relationship between resiliency and some of the mitigation strategies. So there's a leakiness between adaptation and mitigation and this is the place and so to the extent that this is being tracked on a broader scale and the effect it has on communities all of our infrastructure and everything, it might be if there's some chance to pull it out and put it in its own place, it might have the advantage of being able to be monitored in a different way.

Jay Koh:
Is

Sherburne Abbott:
That where

Jay Koh:
Yeah, maybe to put the point more firmly, I would say a Member of this Committee, I will be very interested in a report within the next six months on what affirmative resilience strategies or programs could be experiment with or funded for two weeks. One is the risk is going to accelerate by a better physics of time and the gap at the federal level planning affirmatively for protecting communities, which is going to become much less certain now going forward will increase. Right, and so what keeps me up at night problem is my father-in-law lives about four miles away from the fires in Los Angeles. There is an equivalent series of scenarios that will impact people living in this state absolutely foreseeably, absolutely increasing frequency and the people that have the highest probability of the technical understanding of what that is this agency which is task leading the state cation assess now in the face of the increasing gap in that likely affirmative strategy at the federal level, which I think and the increasing risk with this most flexible part of our budget, can we not conceive of or is there a way that the management can come back with targeted approaches that actually not just incorporates resiliency as a thematic component of how we design our programs, but attempts to get in front of even the war gaming

or planning for enormously disastrous catastrophes which we should expect a higher probability and frequency.

So my directed question which is I'd like to see a permanent thought, take some of this funding and actually program that because we're going to see it if anybody knows how bad it's going to be, it's going to be this agency on behalf of the state, but they're charged with that. So we ought to have a couple ideas with flexible funding to get ahead of that and not just respond to it once it happens. Only put some time.

Sherburne Abbott:
Any others?

Richard Kauffman:
So I'd like to know how much all of these different initiatives connected to the market development overarching approach that we have as opposed to everything being broken up into little programs that aren't connected to a whole.

John Williams:
Yeah, well I would say Richard, that some of the little programs that you're seeing, those are actually probably the connective tissue too. A lot of the other activities it allows us to reach the entire those market development activities that other funding might have certain constraints around. So that's what I would say is the majority of the little funds is really connecting to those big market development activities. So we make them actually even bigger. Other ones I think are really just attempting to try to figure out when we look at certain spaces or gaps in those other portfolios, which I think we would all think are of as market development type activities. Those would be some of the larger ticket items. I think when I would say that Anthony may correct me if I'm over characterizing, but certainly when we look at our transportation activities, some of those RGGI has served as a primary funding resource. For the market transformation work that we're looking to make.

Richard Kauffman:
So there's been good integration and how you think about this with the market development.

John Williams:
Yep, yep yep, absolutely

Richard Kauffman:
What it's worth, it doesn't read that way.

John Williams:
Lots of little programs.

Richard Kauffman:
Well yeah, it makes it Seem like we're funding often funding projects or initiatives as Opposed to things that are connected together and hold.

Sherburne Abbott:
Any other questions or comments

MarieTherese Dominguez:
Hi, I think you just called my name. It's MarieTherese.

Sherburne Abbott:
I'm sorry,

MarieTherese Dominguez:
Just a quick question. Along those same lines with regard to the transportation funding, I understand what you just said in terms of the response that RGGI's been a good source, but obviously we've been relying also on some of the funding from the infrastructure bill which will expire here in two years and right now is under question as to whether or not the existing funding for NEVI and other programs is actually going to go forward. It's being called into question, so if there was discourse on that, I missed it, but I just wanted to make sure that if we're talking about how we're going to fund this going forward, I just want to make sure that we're talking about NYSERDA funding versus reliance on federal funding.

John Williams:
Yeah, so Commissioner, this is really just kind of our own NYSERDA based programmatic work. Certainly we are keeping very close. I mean we had initially been understanding the value proposition that the infrastructure law funds were providing and we were designing to that certainly we're keeping close attention about what potential impacts that might mean about that activity going forward. I think the thing we were thinking of is as we would be moving forward with those federally funded activities that would certainly inform future directions of where the NYSERDA based funds could also then be best utilized. So as we are pulling together this RGGI portfolio, it's done with an eye to understanding what all of the other various moving pieces are happening throughout the authority. Not trying to make that color of money be the driving force but understanding where are we actually looking to impact the market and then again, what is the money that we can actually get to that. RGGI allows us to best kind of design to those types of activities when we know what's happening, those other funding sources. So yeah, certainly we're keeping a very close eye on all that.

MarieTherese Dominguez:
As am I.

Sherburne Abbott:
May I please have a motion recommending approval of the amendments to the Regional Greenhouse Gas Initiative Operating Plan?

Lindsay Greene:
Second.

Sherburne Abbott:
All in favor?

Members of the Committee:
Aye.

Sherburne Abbott:
Opposed? The amendments to the RGGI Operating Plan are recommended for approval. Thank you John. The next item on the note as consideration of the Authority's fiscal year 2025-2026 budget to be presented by the Authority's Chief Financial Officer, Pam, Pam.

Pam Poisson:
Thank you Chair. And if I may, I'd like to just express appreciation to the finance team and particularly to for joining us from Albany our current VP Finance and Controller who will soon be retiring and as such we also have our incoming VP of Finance here in New York City today, Chris Russell. So really appreciate the work that they are all doing, the continuity that we have here. So reflecting back on their work and of course this is with input from across all of the organization, both policy and program teams as well as the strategic lens. We have the budget to be presented for the coming fiscal year. The Committee Members have requested to recommend the adoption of our resolution that will recommend Board approval of its portions of the Authority's budget for the fiscal year ended March 31st, 2026 we're fiscal year 26 for short. As context for this, we see NYSERDA the <inaudible> leader in the energy transition readying for the realities of climate change while also seeing growing energy demand.

So we're striving to play an integral role implementing the CLCPA and also turning charting a course for the future through the New York State Energy Plan, regaining momentum on renewable energy and exploring new options to diversify clean power services. In all of this work we seek to maximize marketplace impact, build engagement, reduce costs through scaling, coordinate with others to more efficiently achieve shared goals. So in that context, we believe that the fiscal year 26 budget presented today is a balance of being fiscally prudent while also supporting the clinical path activities needed to operate at scale and keep longer term progress on track. The budget reflects continued momentum on initiatives enabled by the Clean Energy Fund, the Clean Energy Standard Regional Greenhouse Gas Allowance proceeds New York State Environmental Bond Act and New York State appropriated funds for certain initiatives. It also reflects early stage expenditures for various federal grants including the HER/HEAR and the efficiency and appliance grants and EPA Solar for all of note.

While our federal grants are substantive, many have just launched and as a result only a relatively small slice is reflected in the fiscal year 26 budget. As we operate in a dynamic environment, I like to stress to opening points first. Consistent with past practice, this budget reflects only those funding amounts and sources that were at the time of this budget development. Essentially assured additional work scope and funding may materialize during the year through PSC orders that are not yet approved but under consideration and also through the billion dollar sustainable future program announced in the governor's budget. It is also possible that federal grant awards could just during the year should significant updates occur, we will present a revised budget for consideration and subsequent meeting consistent with past practice.

Second, this budget is informed by a combination of planned work scope, past trends and economic projections.

This operating model has ensured that funding commitments are made only after funding availability is confirmed. So while we would view financial risk as limited, the timing of expenditures and collections certainly may vary from budget due to external developments. The budget and three-year financial plan we've put forward is we believe realistic based on the best available current data fiscally, rigorous and sufficient to allow our work to proceed in line with approved orders and grants. Many details are summarized in your Board package and I would note that we continue to evolve that package in response to your feedback. For instance, this year we have redesigned it to better align with the Strategic Outlook, so certainly welcome your continued feedback on program improvements. I will highlight here just the most significant items. As a summary, some key drivers influencing this year budget, this year's budget are as follows.

The CEF programs are gaining ground through the combined effects of moderating inflation and continued progress on the work and process and there is a clear focus on committing all funds prior to the end of this fiscal year at which time, excuse me, the current order elapses and that is having the effect of increasing both expenditures and will naturally as we draw our reimbursements, the resulting revenues. Second payments for large scale renewable clean energy generation is also a factor with some increases this year as new projects come online and we also see larger draws of funding that's already been appropriated for related port and supply chain developments Progress there is ramping up. Third, as my colleague just described this fiscal year's atypically high RGGI proceeds in this current fiscal year are now translating into higher expenditures for next fiscal year as those funds are deployed on impactful and high interest programs.

Four expenditures for initiatives that are supported by several new and material federal grants at least in terms of their full lifespan. Again, the current years share of that being quite contained and then finally planned and phased investments to modernize operations and technology while also continuing to add new skills and bandwidth to the teams so that we increase our impact and our outcome quality. Last but not least, I should note that the capital budget includes investments at the level needed for office consolidations and updates previously shared with his body and updates to foster further productivity and compliance with Executive Order 22. In the context of those drivers, here are a few highlights of key data points you may want to be aware of. First, let's start with our net position that generally represents the difference between cumulative revenues and expenses. Per this budget it's projected to be approximately $2.4 billion as of the end of the coming fiscal year.

That is up just slightly from this current fiscal year's revised budget. You may recall that net position has four components, funds restricted for use on specific NYSERDA programs, Green Bank's net position, our net capital investment, and finally a small unrestricted portion that can serve as a limited temporary internal backstop should unforeseen the urgent financial needs arise. The first are restricted net position is projected to decrease approximately $20.9 million to $1.22 billion and that's primarily due to the timing of program revenues and expenditures. Green Bank's net position is also projected to increase to $1.2 billion and that is mainly due to higher amounts of capital deployed and the result of cumulative revenues exceeding expenditures over time. The unrestricted net position that I mentioned earlier as a bit of a backstop should end this next fiscal year close to $25.9 million at 1.2% of total funding. This is up slightly from last year, 0.8% and it's a level we see as prudent in light of two things, general economic and political terrain and also importantly this includes the capital investment necessary for the office consolidations that should reduce operating costs over time.

Moving on to revenues briefly again, revenues are largely a factor of the expenditures that are made on the various programs. They are structured to be reimbursements and so they will closely parallel the trend in expenditures. By and large, the revenues are projected to increase by just $2.4 million year over year to a total of $2.23 million. That increase reflects the offsetting effects of several factors. First, we're projecting to see increases in the large scale renewables portfolio with higher collections for both RECs and ZECs combined. We also foresee some additional increases related to the assessments for our clean buildings and innovation and research work as we carry momentum in the close of the CEF order window and aim to carry that momentum into the future period. Provided we see the approvals from the Public Service Commission, there is also some contribution here from federal grant funding. These increases are mostly offset by the natural expiration of what was a prior year appropriation from the state to launch Empower+ as an expand the program that has not been removed and also the RGGI allowance auction proceeds.

So they're actually projected to normalize this year after some atypical clearing prices that we've seen in recent months. Moving from revenues onto expenditures, you would note that the total expenditures increased by $270,000, $270 million year over year as budgeted. That's up about 10.4% and that comes to a total of $2.19 billion for the full expenditure budget. Of these, the program expenditures are by far the largest factor. Those are projected to increase by $193 million, so almost the full total and that is primarily driven again by the relative increase in the work progression over time. So we've got the offshore wind port and supply chain initiatives that are proceeding forward. We've got clean energy generation payments again, more things are actually coming online, so that is naturally translating into increased generation and with that resulting expenditures for those which are in turn passed along to the low cherry entities. The RGGI funded investments, again ramping up to make use of the proceeds recently realized and as I mentioned before, the upcoming closure of the CEF window with a conserved effort to make sure that we fully deploy those funds.

Those are all in part offset by the Empower+ and also just a slight reduction in projected new expenditures, which is really just mainly we do the project timing and that is an area that we often see a little bit of variation from year over year. Other factors to be aware of relative to salary and benefits NYSERDA naturally has increased given recent approvals of orders and the Scoping Plan and the Bond Act in commensurate with that trend. You may recall that last year's approved budget reflected new authorized headcount to be hired over the course of the year. As a result, this current year's budget includes now a full year of salaries for those authorized headcount previously approved. We also do include some additional new authorized headcount to be hired in stages over the coming year, primarily associated with new orders expected to be approved or recently approved, though I would note fewer planned additions than last year.

So it's ensuring that we are appropriately matched to the size of the work but making sure that we are conservative and doing so. And in light of turnover trends and still robust labor markets starting to change a bit. We anticipate that we will still have some turnover and we've applied an average vacancy rate of 5% based on past experience and outlook. You might recall, we continue to use rigorously quarterly resource planning efforts that are cross organizational in nature and we couple that with long range forecast to ensure that our staffing levels from appropriately to the funding outlook based on our needs and the funding assessment. This budget reflects an assumed average employee headcount for the coming year of 525 FTEs. Other aspects in the compensation budget to note simply is that we are seeing as a natural result of some trends and healthcare costs and otherwise that the benefits costs are slightly up year over year.

And also factoring in the retirement contributions based on staffing levels and actuarial models as we typically do, we've modeled salary increases consistent with what the state has signaled in terms of an anticipated 3% general salary increase or cola essentially effective April 1st of the coming year and we continue to use the state management confidential employee grade schedule as a frame of reference for rigorous alignment with state standards. Finally, the Roundout program operating costs are up just slightly an increase of $1.4 million year over year, primarily due to travel associated with increased volume and also the reach of our programs, onsite visits and so forth are necessary to ensure the work that's being completed per standards. Our G and A expenses are up to $1.6 million year over year and actually down as a percent of the total expenditures showing some greater efficiency in organizational operations and we've also shifted the mix there to ensure that we are making a proportionately higher investment in technology services to add for further automation and streamlining over time as well as professional services that are easily adjusted upward or downward as the needs change.

I would also just remind the Committee of two other points on our capital asset budget right now we have a budget that's proposed at $9.5 million. That is an increase of just $438,000 from our current year budget. The majority of that is associated with work planned to allow for an office consolidation here in New York City and that's informed by benchmarking provided from experts in the field, both as under NYSERDA employee and also independent experts. And we continue to evolve our fleet to ensure our fleet is electrified over time following the natural retirement schedule of the vehicles. Finally, with regard to allocations, I would remind the Committee that last year we worked with our investment advisor to group our funds into five investment portfolios differentiated primarily based on relative liquidity and need and so funds that turnover relative quickly are in the most liquid portfolio and thus will generally be invested almost exclusively in money market instruments.

At the other end of the spectrum, those that may not be accessed for six months or more and for which there are well refined forecast such as NY Green Bank are in a more diversified portfolio that targets allocation across five approved investment types. But I should reiterate that all of those allocations are in extremely conservative, highly liquid portfolios with short durations and you see some more details in the written report. So I thank you that was a lot of detail to listen to, but I hope that we've conveyed the most critical points that you would need in order to weigh in us. Let me pause there for questions.

Sherburne Abbott:
Thank you Pam. So just kind of set in the context of the overall year and the sense of our priorities. Maybe Doreen, can you remind us the sequence from now to the end of the year in which we revisit the integration of the strategic plan, the budget, the new, what happens with RGGI in October and those things just so we have a sense of an unknowable future and where the pressure points are going to be?

Doreen Harris:
Well certainly thank you for the question. I'd say first of all, the next step, you'll hear me speak to this in my President's report in the next meeting in April, we'll be taking up our Strategic Outlook, which necessarily is informed of course by our budget, but also the Governor's budget, which is now underway, which I'll also be referring to as we head into the fall. That's when the RGGI planning process moves forward as well. Obviously this culminated this past year's process with today's meeting. Are there other points though that my fellow officers would want to share on the cadence?

John Williams:
It could be episodic actions if there are commission activities that might not necessarily fall along our fiscal year, but I think just try to capture that on our annual kind of budgeting basis. But those could have mid-year,

Jay Koh:
There'll be a mid-year review,

Sherburne Abbott:
The midyear review and then we actually review the budget again if there's a re after the right. Okay, so I just wanted to get that on. Thank you. And are there any questions or comments?

Richard Kauffman:
So I'm trying to reconcile the budget, which is a sort of going concern business as usual with the fact that we are facing a lot of unknown and so I can understand why we would approve this budget, but I don't know what the tactical, what we're going to be doing tactically. So in other words, you have money in here for offshore wind for development if there's not going to be any offshore, we have a clear indication which we kind of do, but that may be on hold and what is the implication for that spending? So you must A or you must be in the process of preparing that more of a tactical plan of how you're going to be spending your money and you're not going to present that today. But I do think that maybe we can go back to the Committee for some subset of the Board to review that in the coming days, weeks.

Doreen Harris:
Certainly we can and will revisit the budget as needed as we did this past year. However, certainly as you're hearing from Pam, we are very conservative with respect to our overall investments around areas where we have uncertainty and of course we have various tactical plans underway to both influence the outcomes we seek, but of course also evaluate the realities that we're working within on a regular basis, which is why it maybe came through less directly, but we had a certain hiring plan for this year, we went back and cut that back rather significantly on

the basis of the risks that we see and frankly, the risks are largely taking a form of uncertainty right now. So as the sort of uncertainty becomes resolved, we will then know which direction to act. Yes.

Richard Kauffman:
So I did hear the conservatism and I appreciate that, but I think as a governance matter, I think that the Board needs to have a look in the tactical point, some subset. Thank you. Looking forward, to looking at that, okay.

Doreen Harris:
Yes, we certainly can and that's how we're thinking about it with certain actions, if you will. For instance, the positions that we are not hiring for when we see action in one way or the other tactically that will influence our decision, we can review those milestones with

Jay Koh:
You just to provide some additional possible clarification or something I think would be helpful from one of view of governance. One is if there can be an assessment done of what components and how material exposure is to federal programs. For example, there's line items in New York for federal grants. Those are obviously not forthcoming right now. At least we will see the offshore wind comes are being made, who knows what happens to RGGI volatility. And one critical component of this budget is the flexibility around RGGI, which might be different and opportunistically we have very different. So I'd say overall exposure, studying material reality, thinking about where there's flexible sources of funds. And then the last piece, which I think is one of the more difficult to assess

Would be helpful to get mention its recommendation, how the Board ought consider this is the overall ongoing potential for uncertainty which could suppress transactional activity in all of these sectors could disrupt and radically alter as we saw the previous years, the supply chain and reflect very different costs in terms of components for the products that do go forward that could impair ongoing products that are in process right now like substantial tar steel on aluminum, on PV panel, blah, blah, blah. All of which can have, I think from the Board perspective, it certainly wouldn't recommend trying to game on every single possible scenario, but would suggest from my own standpoint what would be to understand what the materiality of direct exposure is on the sources and uses side. You think the key components offshore wind, if there's a dramatic spike, just forget the wind. Let's say all of our solar programs and electrification programs, if there's a 25% impact on costs to implement this program, not only for ongoing activities that look very different by the pace, but ongoing face dramatically different uptake and execution capability we saw with increasing costs. So

Doreen Harris:
I agree with the or we collectively agree with the categories you're describing. Our direct exposure is actually relatively small but relative to our overall budget as on the order of $1.1 to $2 billion that we are directly deploying. However the industry impacts are those that are more difficult to quantify as relates to our budgets because those depend on the authorizations and the flexibility that they may have. But also fundamentally an industry slow down, it's hard to predict exactly what impact that will have on the budget. It is specific to the initiative and sector that

we're working within. But these are all points. And the second category of activities unfortunately is not going to have an end state, right? There will be knock on effects that could take years to manifest themselves relative to our budgets.

Jay Koh:
So completely understand. And then I think from a governance standpoint, the two or three things that might be done within the Fairview of Board's governance function will be first to understand that exposure and magnitude and that quantify second to consider a more subset discussion where there's more detail for those Board Members who are interested in understanding your contingency. The third is we understand the general normalized cadence for budget review and allocation and programmatic activity, reprogramming and changes in, I'm really glad we have a three-year RGGI budgeting process that was put in place because of surprises on a wonder budget proved out to the right approach strategy. So the exact opposite might be the case here where instead of simply planning out having a six month work back in the video, which traditional budgeting practice, given the uncertainty that we're facing right now, I would recommend that we permanently plan to have a specific review in a more detailed way, at least with employer certainly as opposed to waiting for the big care.

Because there I think will be ongoing information's direction of travel community clear I think. But that is matter. How big is the potential range of challenges? Where are the levers that we could provide input into in terms of resources? So management say, oh, we plan, we could hire this number people this fast, we allocate from these programs. We could not program the RGGI budget until halfway through the year because then we have the maximum flexibility for a good chunk of windfall RGGI proceeds to plug holes if we absolutely need to. And so to the earlier point discussion about retention and teams, if there are compensation structures that are incredibly dependent on and having RGGI used to allocate. So I'm just saying what are the levers that the Board state about what's the magnitude of the problem is that is what we're,

Doreen Harris:
It certainly is payments. Looks like you have something to add.

Pam Poisson:
Well just for, we have been doing some planning already that I think is in support of that. So about six months ago extended our financial plan outlook to go out 10 years stacking up all the different funding sources and matching the sources and uses. So I realize that is not the details of the operational adjustments, but that framework is there and we've already been working in some variations. So I think we've got a foundation that we could use to come back to this group.

Sherburne Abbott:
So harken back to one of our early, early conversations in this Committee when I joined this connection between budget tactics, goals, strategy and operations and governance. This Committee, one of our higher-level interests is the relationship between all of those and achieving our larger goals of greenhouse gas emissions. So if we have a different set of strategies and tactics that are reflective of the uncertainty of either the financial situation in which or the federal policies or other policies that change that trajectory, then we have to begin to reassess the impact of those activities on achievements and so they're all connected. Right?

Jay Koh:
I totally agree. I think that needs me to suggest maybe two other things, but one is counterparts.

Pam Poisson:
Yes.

Jay Koh:
Okay, so let's look at the Federal Green Bank strategy such as there was, you're going through CFDAs, those guys are under enormous pressure because a huge amount of their other funding sources may not exist. Maybe so dramatic be more uncertainty may reallocated to throw ahold in other areas and so on. So I think counterparty risk is going to be a really this. The other thing is beyond our current programmatic approach to Shere's point, one of the objective strategies that NYSERDA want to be involved in or what we called upon to execute in this uncertain context, right? So not just protecting what we're doing, trying to maintain our strategy now, but if you wipe out community resilience supported by federal <inaudible> bridge funding, then how do we serve those communities in ways that we haven't anticipated because it's in the overall objective of getting to the answer here. What we might assume exist in the rest of the ecosystem is faculty risking how do we think about having to fill gaps or step into appreciations.

Doreen Harris:
I think what I'm hearing, and Pam please help me if this is fair, and of course to the Chair, this is dynamic enough that a quarterly cadence for this reassessment is not only something we are doing but will be presented.

Sherburne Abbott:
It would be useful. Yeah.

Doreen Harris:
Yes.

Sherburne Abbott:
Okay. Any comments, questions, interventions, laughter?

Charles Bell:
Well, we seem to be in a moment where the pendulum is swinging back to states to be leaders on climate issues. I'm just wondering if we have thought at all about partnerships that might be ripe for this period that we're in.

Doreen Harris:
Yes, we certainly have. Of course, to some extent Americans back to the first administration in which the sub-nationals as they're known had really had to step up and in fact our own climate law and the work, I'd say our strategy with multi-state collaboration has taken a bit of a different form thus far. Course we like-minded states as we always do. In fact, just yesterday we had a very, very useful meeting with the California Energy Commission on a number of issues and impacts that we're all addressing together. Not just federal, by the way, just general transitional impacts. But of course, and you'll hear a bit about this in my President's report, we're also

working to advance solutions that technologies that are perhaps more akin to activities that would occur in red states. In part because this is really central to the work that we're doing now on our state energy plan and the commission zero by 40 proceeding, which is getting after technologies that might be perhaps considered from a more bipartisan perspective, but also because, and in fact much, much, much of the activity, the economic activity resulting from the Biden administration as accrued to those various states. And as such, when we think about the work we're doing, we think about it from an economic impact perspective and that's where we see the alignment of our work and the benefits that are coming to those states as being an area to build on.

Charles Bell:
Terrific. Thank you.

Sherburne Abbott:
Anything else? No. Okay. May I please have a motion for recommending approval of the Authority's fiscal year 2025-2026, budget.

Lindsay Greene:
So moved.

Dale Bryk:
Second.

Sherburne Abbott:
A little levity of day. All in favor opposed Authority's fiscal year 2025-2026. Budget is recommended for approval. Thank you, Pam., The next item on the agenda is an update on the Authority's various programs. So interconnected, the Authority's Chief Program Officer Anthony Fiore, will introduce this item with assistance from representatives to various programs.

Anthony J. Fiore:
Sure, yeah. So we're going to talk a little bit about some of our programmatic focus on and programs really geared at achieving market transformation across different market sectors. And the graphic here is not by mistake, really reflects market transformation that occurred in specific technology lighting that took decades to occur, but now we don't even think about it. But it took a lot to get there and I think that's part of what we want to spend some time talking about today. So if I could add the next slide please. So perhaps just restating the obvious complete market transformation is actually really hard and it takes a lot of time and it often requires multiple interventions throughout the value chain and market participants, including manufacturers and innovative product developers to distributors and contractors, all the way to end users. And this is just a taxonomy of different ways to interact with the market.

And we'll be concentrating today on those direct interventions that are aimed at animating the market. Some specific intervention type biologies representative of that include provision of data and information that will improve market transparency and reduce discovery and entry costs, product development support, providing proof of concept that will result in processes and technology becoming business as usual, supply chain development, contractor training and workforce development, financing solutions that reduce pre-development and first cost risks and allow for the attraction private capital codes and standards that send clear market signals and also targeted resource deployment aimed at building competence with residents to demonstrate demand and challenge product solution providers to bring needed tech to market. So we're going to go through a few different programs to showcase some of those market intervention strategies. So I'd like to start off in next slide please and turn it over to Andrew Kessler to President of the NY Green Bank and talk about some programs.

Andrew Kessler:
Great, thank you. Good afternoon everyone. Market animation as most, I think many of has been a core, core to our mission since deception. Animating, catalyzing, crowding in, we use those words a lot as we engage with the marketplace to drive private sector investment into New York State's clean energy markets. It's really been the center focus of ours for quite some time. Next slide please. I'm going to go through just four examples. They'll vary. Start with one associated with a more mature technology or more mature business approach to a technology, in this case solar that wasn't so new 10 years ago, but is I think a really terrific market transformation story that we think we significant role in. And we'll talk further about some examples that are more up and coming and emerging in nature. But lemme start here. When community solar launched in New York state in 2015, private sector lenders really shied away from investing due to lack of familiarity with the risk profile, how to assess that risk,

How to structure and price these projects and the required financing. And although now fast forward 10 years, we really have, and thankfully the hard work, not just from NYSERDA but across the state and not just within NY Green Bank, but with the NY-Sun program and others, we've got the most vibrant and robust community solar market really in the nation. Took a lot to get there. Even today on the financing side, we still see funding gaps in particular areas of that financing value chain in particular in the interconnection side, which I'll get to on the next slide. But overall in the early years private sector lenders were quite reluctant to underwrite projects in general and even today have been reluctant and hesitant to fund those with LMI exposure, which is another big challenge of ours, right? We want to make sure that we're ensuring that these benefits are making their way to all New Yorkers.

What have we done in terms of success factors in this area? It was really a leading by example, by transparently sharing due diligence, how we approach that, our underwriting approach, our structures. It really goes back to the knowledge sharing aspect that Anthony talked about earlier, educating lenders on specific key features of the overall risk profile, including what was then the emergence of feeder and how to think about it and how to model it, how to risk assess it, and overall just sharing best practices around how to build an underwriting team within some of our private sector lending partners around this use case. In total, since we started intervening in this space in 2017 when we closed our first transaction, we've committed about $830 million to community solar across 44 transactions mobilizing up to $2.4 billion in total infrastructure supporting capacity of about 1.4 gigawatts. So that is one example. I'm going to keep going and then we can Circle back with questions.

Anthony J. Fiore:
We could talk at the end.

Andrew Kessler:
Yep.

Anthony J. Fiore:
Yours,

Andrew Kessler:
Let me talk specifically about one aspect of what I just covered, which is the interconnection financing. Next slide please. Yeah, thank you. So the issue here is interconnection financing is an early need, early use of proceeds to get these projects moving and historically it's been funded by equity, the most scarce and expensive component of a capital stack. It was our goal to try to free up the scarce and expensive capital by demonstrating the viability of debt financing interconnection deposits through replicable and scalable structures. It's really been a persistent funding gap. Typical interconnection transaction sizes are small, $5 to $25 million that are really just too small for traditional lenders. There's also a perceived risk, really a disconnect from our perspective that we've been working to change. Most lenders view lending against inter connection deposits as unsecured development capital and are really not that familiar with the NYSIO IS Process and the granular detail necessary to get comfortable. So we've been, again, going back to success factors, really leading by example, transparently sharing our due diligence, our underwriting approach, our structures, educating lenders on important features here, refundability of deposits, how and when does that happen?

How to structure mandatory repayment triggers. It's really an education as well as a prove out by doing effort. Since we interviewed in interconnection financing again back in 2017, we've committed about $155 million across 23 transactions mobilizing over $2 billion worth of infrastructure that ultimately got built. So imagine just providing us providing the interconnection deposit doesn't mean we were involved in the construction, doesn't mean we were involved in the term helped drive that ultimate result. Let me turn to the next slide, please. Switching gears to a more emerging asset class or sector in the clean transportation side, animating New York State clean transportation market by providing creative financing solutions to support the development of electric and zero emissions vehicles and the build out of the necessary infrastructure. Charging infrastructure has been a core focus of ours for several years now. There's certainly limited availability of financing by private sector providers for this early stage in nascent asset class.

There's a real lack of familiarity with the new business models coming out, whether they're related to vehicles or charging or related services. There's limited availability of data to really determine, to really risk assess key issues such as the residual value of electric vehicles. We've got blue books that people feel very confident about what the value of their vehicle is at any given. We just don't have that right? And so that makes it hard for folks to really commit real dollars into this sector. And so building that data and building confidence around that has been a key focus. And then there's in many cases a significant upfront cost to kicking things off, particularly on the charging side without contracted revenue to support the payback. So lots of challenges we've been doing to try to drive this market is again, leading by example, working with folks to develop creative and innovative structures that we think could be importantly replicated and adopted.

We like to be as creative as we can, but not so creative that no one would want to follow suit. So there's a balance there and dialogue with lenders and other stakeholders to make sure that what we're doing is something that directionally they may eventually want to get into is a core feature of our decision making. We look for experience management teams in a sector like this to really make sure that the technology and approach is being executed by as high quality of a team as possible. And then we look for ways to provide capital where there may be opportunities to, for example, bridge incentives and create some liquidity into the capital stack. So looking for opportunities, whether they're utility incentive programs or otherwise, to get cash upfront in the hands of these sponsors so that this infrastructure can get developed. We've got close five transactions in this sector, $132 million with total project cost mobilized of about $380 million. We just closed our $60 million transaction that we'll be announcing I think next week. So we're making good progress here, but this is an example of one that we're actively working on as opposed to community solar where we can do a look back and feel pretty confident about what the art of the possible is in this type of activity. A next slide please. Another example of market transformation that we've been working hard on is in connection with building electrification.

Sherburne Abbott:
Lindsay has a question.

Andrew Kessler:
Oh, I'm sorry.

Lindsay Greene:
No, no, it's okay. I had a question. If you collaborate, and I apologize if I missed it. Are you seeing traction on EVs, on passenger vehicles and on commercial things like buses? I think a lot about buses. I always sort of hear about tortured school bus pilots, but are there any conversations with the MTA about the future of their bus fleet or

Andrew Kessler:
Yeah, absolutely. The answer is yes on both those counts and what I'll ask maybe is that our NY-Sun team, we can get into more detail on that with our clean transportation team.

Lindsay Greene:
Great.

Andrew Kessler:
That's okay.

Doreen Harris:
Yeah, Lindsay, we've had, I'd say good market growth on the light duty side. We had about 10% of sales be all electric vehicles last year, and I think when you add and plug in hybrids, it's more like 17 or 18%.

Lindsay Greene:
Okay, that's great.

Doreen Harris:
Yeah, I'd say medium and heavy duty remains more elusive for various reasons. Not the least technology readiness and charging infrastructure of something that we're putting some funds against, but definitely not as advanced.

Anthony J. Fiore:
I'll just add though to Andrew was talking about the creativity and we're really bringing back is doing a lot more of this and connecting with other program teams, bring that expertise together, but on buses in particular, looking at what type of product might we create that provides some risk mitigation against residual value, there's for electric buses and so forth. And so they've been teaming up with our clean transportation team and really trying to think about creating a new product that can mitigate some of that unknown risk by putting some colors around that value. So that's just one example of that. Yeah,

Andrew Kessler:
So if it's okay to continue on this third element here really in relation to building electrification, particularly in disadvantaged community use cases, this is Anthony said, market transformation. It's hard work and this in particular is hard. You're talking about buildings in some cases over building stock. And we've been at this quite a while and realizing the role that partnership plays, particularly with community lenders. And so a couple years ago we launched the community decarbonization fund in $250 million wholesale lending pathway targeting building decarbonization projects that benefit disadvantaged communities by providing, directly providing to these CDFIs, these community lenders capital at a very subsidized rate that would enable them to effectively in some cases stand up new green lending practices in some cases even, and expand existing ones. Market barriers that we were seeking to address here is access to low cost capital and generally incentivizing building decarbonization measures, particularly those in disadvantaged communities.

I think this is an example of, we're sort of two years into this program or just about there, and I think we're already seeing some really clear indications of market animation. First of all, we wanted to make sure we covered a wide spectrum of CDFI borrowers covering a variety of different underserved communities across New York State. The second, again, was really making sure that we were delivering capital that was deeply concessionary that would provide the necessary first dollars into these community lenders to enable them new initiatives. And then really the framework of this was making sure that we went into it where they having had a very deeply collaborative design process. So we had about a two year design effort to make sure that we were putting a product like this together that would actually have demand. So we took a lot of time to do that. The results we've now committed about $133 million across seven transactions of that commitment, $61 million has actually been advanced into 11 specific projects with a total project cost mobilization of $1.5 billion. So imagine $133 million of commitment to these CFIs, many of which are participating in club like transactions, but ultimately through that capital getting into the business, learning how to underwrite into these use cases and delivering lower cost capital because of the support stationary nature of the capital we're providing to begin with was able to mobilize a $1.5 billion of building improvements state. I'll just add

Anthony J. Fiore:
Andrew, and I've been talking a lot and going to stand up a new team within the Green Bank on innovative business development. And that's really looking to do a couple things. One is to help other private financial institutions really better understand the New York state landscape and how it might or might not be impacted by federal policies. It may or may not be similar to other states so that there can be larger projects. And it's also to look at some of these financial barriers that they're seeing. It's not always just a financial solution. It could be a programmatic solution, it could be a policy solution, it could be a regulatory solution, it could be a legislative solution. And when they're seeing that it's coming back and connecting with the rest of NYSERDA so that we can look at each of those potential areas of intervention and you'll find a holistic solution. I think that that's going to be really important advancing some of these more nascent market segments like clean transportation storage.

Richard Kauffman:
So Andrew, on this, given what Anthony said, are the trending wheels eventually going to come off or is the market mobilization always going to depend on providing subsidy and records?

Andrew Kessler:
Some use cases I think just don't pencil out without some form of support. It doesn't mean it has to come from the Community Development Fund, but a lot of these affordable housing use cases have historically required some level of support. That being said, there are many other cases where the economics of these improvements do pencil out, and by getting these CFIs in the business and understanding how to risk assess these and getting comfortable with a history and track record, I think we're going to be able to take wheels off of quite a few of the examples that were funded, but I suspect there'll always be a portion that's going to need some of intervention.

Charles Bell:
Yeah. The question I had is the geographic coverage of the CDFIs, do they reach all parts of the state or is it also possible over time? Maybe they could expand their scope just

Andrew Kessler:
That's exactly right. Look, we tried to begin with to cast a wide net, right, to make sure we're covering the state well, and I think we have done that, but there are, of the seven, there are a few that have historically been quite focused on a particular smaller subset of New York State, but through growth and getting comfortable with putting money to work in these types of use cases, I wouldn't be surprised that they would see opportunities elsewhere and chase them. And that's really the goal.

Charles Bell:
Yeah, that's great.

Jay Koh:
Have you seen any impact on CDFIs from this situation?

Andrew Kessler:
It's pretty early to be able to make a determination like that, Jay, but I would say that the CDFIs, if you look at their conferences compared to four or five years ago, the sort of the content, it is a huge portion now is focused on clean energy, energy efficiency, building electrification. So the focus I we've seen progress in terms of focus of where these community lenders, how they're trying to deploy capital. We're going to have to wait and see how successful that is, but certainly directionally it's going the right way

Anthony J. Fiore:
And I think you've seen good diversity in the size of CDFI lenders. That

Andrew Kessler:
That was the other thing,

Anthony J. Fiore:
Which I thought was really,

Andrew Kessler:
That was the other important aspect to make sure that we were casting a wide net in terms of the size of sophistication of some of these borrowers and then connecting them. So we're working on, for example, putting together all seven and soon we expect there to be 10. So we have three actively being worked on right now. We have a critical mass now to bring them together periodically, and so these larger more sophisticated ones that are in some cases national, but have a very significant focus in New York can talk to some of our borrowers that have been micro-focused in a smaller region and really create that knowledge sharing marketing animation isn't just about deploying capital for NY Green Bank. As Anthony said, knowledge sharing is a key goal, teaching how to fish or whatever the, that's an important element of this and it's just not enough to do a few transactions and say, look, we did it so you can too. We have to help folks get there.

Anthony J. Fiore:
Thanks. Thanks slide. I'm going to ask Susanne DesRoches to come up and give some examples in the building sector.

Susanne DesRoches:
Thank you. Great to see everyone. I'm going to focus on three examples of market transformation in the buildings portfolio. The first is really around how are we accelerating heat pump adoption. I'm going to talk about how do we scale clean retrofits in large buildings. And the last is a market transformation strategy that really aims at the supply chain. So the first one is clean heat for all, and this theory of change was really around spurring manufacturing investment into new and scalable technologies that had a minimum purchase through a minimum purchase guarantee and then demonstrating that demand and the return on investment. So what we saw in terms of market barriers was really a complex engineering and custom design that was needed for every heat pump project, especially in a multifamily setting. We also saw the need for increased electrical upgrades, which can be time consuming and expensive, and in New York City, really multifamily buildings looking for a way to comply with Local Law 97.

So I'm not going to talk through the whole trajectory of the timeline here, but basically we went out to the manufacturing market and said, give us a heat pump that fits in a window. It can do heating and cooling and plug into a regular outlet. We worked with NYPA who was in charge of the procurement and NYCHA our New York City Housing Authority was really going to be the recipient and they said, we're going to purchase 30,000 of these units eventually once we get through the pilot stage. So we had two manufacturers. We did a pilot where we installed them over last winter. It was great results from that pilot. And you can see here under 2024, an 80% decrease in heating load and really an increase in occupant comfort. So showing it through this new technology. So we're looking to deploy 30,000 of these units.

This has really spurred a lot of activity in the market. It's gotten a lot of national news coverage. There are two other manufacturers that are now in this space. So we've gone from the two in this program times two more. And really this has the to be a national product that started in this small way with the right partnerships as they're seeing here under key success factors. Really the focus here was on scale. We want a plug and play solution at the end of the day that's also affordable. And so what we're going to do next is look for other opportunities here. So next is on PTACS. These are units that typically slide into a sleeve underneath your window, and so we've started replicating this same program design with PTACS and talking to obviously building owners across the city and the state.

Anthony J. Fiore:
Just to mention one thing that based on this EPA energy store created a new product category for room heat pumps based on products.

JoAnne Hewett:
What are the BTUs or room size of these units cover?

Susanne DesRoches:
So the initial units for NYCHA, it's typically two units per apartment. So you'd get one in the living space and then one in a bedroom space. Depending on the size of the apartment, it can be three per unit, but they did have a cap on the overall cost.

JoAnne Hewett:
Great,

Susanne DesRoches:
Great. Okay, let's go to the next slide. Oh, Richard.

Richard Kauffman:
Is this a, trying to pick my words carefully No, I think this is fantastic because the idea of creating an end market and challenging the industry is absolutely right. What I'm thinking about is, and I appreciate the fact you're thinking about the next thing, but with respect to this product, is it in the appliance industry there's usually good, better and best because they're different market segments. So is this just a good product? Is there a potential for it to be a better and best product? Because if we're going to get really broad adoption, we have to do more than just good products, right?

Anthony J. Fiore:
Well, I mean, I wish we had one in the room to show you because it really is a best product. It's absolutely amazing to see how, I mean, you could tell from the picture there that it's very, very low profile, but it requires no skill to install or take out. It ramps up hydraulically on a slide. So the piece that sits outside the window just slides and it's an track. There's no risk of your window AC falling out and hitting somebody. There's no risk of that. And the sleekness of it that allows you to still be able to use your window, I think makes it so

Sherburne Abbott:
Is it applicable to all these different window types.

Anthony J. Fiore:
So that's the advancements that they're making is applicable to more and more window types, but it is already applicable to many, many windows window types.

Richard Kauffman:
So I guess what I'm saying is how are we going to scale it across other market segments? I'm thinking there are plenty of other departments around where they still have funky radiators and stuff like that. What's the strategy for, as it were, the commercial market?

Susanne DesRoches:
So I think the first step is to show it at scale within NYCHA, right? So we've done the pilot, we've tested that through a winter season. They're still in testing this winter season as well, which is good because a colder winter this winter. So we want to make sure we're working out those kinks while they move into manufacturing. And I think when we get to a scale at NYCHA, they eventually want 155,000 units. So that's pretty big scale. We're going to get 31st and then move into there. By the time we get into that 30, we're really going to see how well these work and how they progress over time. The hope here is that the manufacturers take that on, that they take on other segments that can utilize a plug and play option. If that doesn't look like it's happening, this program can do the same thing again with a different segment. We don't necessarily, we're not stopping the program, we're moving for a new opportunity, but certainly this is an ongoing program type that we want to continue utilizing.

Anthony J. Fiore:
I think Richard, to your point, there's always supply chain interventions that also can help with this. So it's making sure that the distributors and contractors are familiar with the product and understand the value that it brings. I think when you talk about on your third slide, some of the supply chain initiatives that we're doing there, they all apply to this type of product.

JoAnne Hewett:
My questions just to follow on, is there a plan to target office buildings as well as apartments?

Susanne DesRoches:
So let's start to the next slide because we do have a different program that's really looking at large buildings, commercial multifamily, and that's our Empire Building Challenge and our Empire Tech prides, depending on the type of office building, this one could have window heat

pipes, but lots of them are not going to be able to do that because they're either sheer glass or the windows are inoperable. So what we saw here was how do we take a public private partnership specific to New York State and with New York leading real estate owners and provide solutions as a group to get them to commit to carbon neutrality and provide them with ways to demonstrate cost-effective methods to do so? That was really statistic that the team always talks about is in 2020, there were no examples of large buildings that had retrofit and removed all of their fossil fuel equipment.

So that's a real problem statement and a big barrier to decarbonization in particular in New York State. There also were no case studies that were applicable to these types of buildings or data that could really show how it could be done cost effectively. And then there were no technology solutions either for large seam buildings, large hot water systems in these very large buildings. So all those market barriers combined. We launched the Empire Building Challenge in 2020, and again, you can look at that trajectory, but now about five years later, we have 27 real estate portfolio owners that collectively control 400 million square feet of space out of the 3 billion. So it's a pretty big chunk of New York State real estate. Obviously, we continue to take new cohorts every year and add additional partners. So we also provide a market driven framework for resource efficient decarbonization, right? This is really important in this market is that it's done efficiently and it's done in a cost-effective way that aligns with their capital plans for their buildings.

So it's a phased approach and as well really starts to capture some of the heat in the buildings for reuse as a specific focused technology. So we also couple this with the Empire Tech Prize. So these go hand in hand and that's administered by the clean pipe. We're working with six heat pump manufacturers and they are currently developing new high temp heat pumps, including steam heat pumps that can serve as drop-in solutions to these large buildings. So you see a kind of theme here where we're really looking to make these decarbonization strategies as efficient and easy as possible to these hard to decarbonize buildings. At the bottom here, again, just talking about our key success factors, it's about partnerships and it's about really getting the real estate portfolio owners interested by providing value to them. We also have been leveraging key associations. So you see their ASHRAE as well as the US Green Building Council, and they've been really leaning into the tools and resources.

We have a really great website that's really slick and shows how all these projects have through case studies and data, have been able to plan and do some of these decarbonization strategies. So this is also a program that is really focused on scale. We want replicable changes that can apply across portfolio owners and then the portfolio owners themselves can learn from each other. A little bit of healthy competition there in terms of showing each other, but as well proving out that this can be done. Our next step here, we went from, we started with commercial, then we did affordable multifamily housing, and next we're going to do hospitals as our next kind of sector to dig into in terms of building a cohort and leveraging best practices. Oh, questions.

Richard Kauffman:
This is great. So it's just so that I catch the thread, it's the same idea of trying to aggregate demand and challenging manufacturers. So I guess the question I have here is in terms of cost, the cost reduction or the economic price that's created, I hate to use this as an analogy given

what's happened, but is there the equivalent of what we did with offshore wind, which is to enlist other northeastern states to join in this to create even a larger price? When I mean a project, I don't mean an enterprise, but market.

Susanne DesRoches:
Larger market. Yeah,

Anthony J. Fiore:
We've not done that yet, Richard. I think that's a good point though, is to look, and we're in pretty close contact with our counterparts in Massachusetts and could absolutely see a corollary to this in Boston in other cities. I think that's something that we should take a hard look at. So yeah, good point. Other question, I will just say, I'm sorry, Jay. The association that we have, I think that word is getting beyond New York, especially with ASHRAE and the engineers. That's not a New York based thing, it's national, and so that word is getting out, but I think closer coordination with some of our counterparts in other states is well with the effort. Sorry, Jay.

Jay Koh:
My question is on capturing the resiliency benefit and try to make sure you manage it right. I don't know if in the prior slide your heat pumps are networked, you are going have electric cooling and heating and different temperature spike situations. The ability to bait at that time fleet basis can be really helpful to the health of grid operations. The failure to do so might make this a great example for people to point to and say what a disaster this is, for example. And certainly if you're trying to aggregate this kind of scale, the ability to throttle back and forth energy demand of peak moments could be extremely helpful if built into it.

Susanne DesRoches:
Absolutely. And the NYCHA program will be doing that. They are networked. There's BMS system that NYCHA will be monitoring and managing. So that is part of that program when other large building, so the technology is capable of that. So building owners can take advantage of that networking possibility.

Anthony J. Fiore:
And then I think you're talking about how might you bring in aggregators to go across portfolios and bring a size pool.

Jay Koh:
Or if you're doing a fleet deployment of 30,000 units, the ability to change your temperature target for booming in the middle of a giant heat event, which causes massive amounts of deaths within populations. These could be very useful, particularly you're deploying this all at once anyway,

Susanne DesRoches:
And that is definitely part of the plan with the NYCHA program.

Richard Kauffman:
Two other questions. One, have you been thinking about how to put low control devices in this so that we can be connected to demand response? And the second thing is the manufacturing. Is there any possibility that these could be manufactured within state our residents of these health?

Anthony J. Fiore:
That's where I was on the demand response part. That's where I was going, Richard, is the units themselves have the technology embedded in them that then you could connect with an aggregation. That's what I meant. I'm sorry that wasn't clear on built in New York State. Sure, we would love to do that. One of the companies that was awarded this was a startup company funded through our innovation team. They were interested in doing production here in New York State. Unfortunately, they wound up going to Michigan because they got much higher incentives to locate there. But I will say more broadly speaking with our economic development team and working with ESD, those are just the examples that we're pointing to and why we may need to look at the types of incentives that the state is putting on the table to keep clean energy manufacturing here in the state.

Dale Bryk:
Can I just add one thing while we're interrupting you? So this is great, and understanding this level of detail of how the market transformation theory of change for each component in future conversations. It would be great. And this is part of what we're talking about with the performance metric conversation, which I'm very excited about. What do we have 7 million units in the state or something? How are we, you're talking about, okay, here we go from a pilot of 70 to 30,000, that's a huge leap. So following that, how do we get there? Or here you're like, they represent 400 million, but they're not doing 400 million, but you can see, okay, those guys are now fishing and so they're going to be able to do that, but then how do you leap from that to the whole sector of whatever, this is hard to electrify large commercial buildings or something like that.

But now we have 14 building sectors within the world of all the buildings that we have. So it's just that storyline of understanding where we are relative to the ultimate prize of all net zero buildings are 80% reduction by 2050 and how we're making those leaps from 70 to 30,000 or whatever. I know that's a huge amount. You can't even really imagine speaking at all, but I think that's to be able to keep referring back to some North Star would be helpful for all the presentations that you give quarterly to us. We have something like that as a touchstone.

Susanne DesRoches:
Thank you for that. In the interest of time, I have one more slide and then I know I have other colleagues. So wanted to talk a little bit about our residential supply chain initiatives. So here really we're looking to develop supply chain relationships at scale across the whole value chain here from manufacturers to distributors to contractors and end users. And what we want to do here is provide access to an experience with the technology to build confidence and increase demand. So in the center of the slide here, you see three different activities. Just to set this in some context. In 2020, heat pumps for heating had roughly about a 2% residential penetration across New York state, right? So we've launched these three different activities here to address a

number of key market barriers. Those include a lack of confidence in heat pump technology and cold climates among consumers and contractors and suppliers.

So really across that whole chain competition with existing and traditional fossil fuel HVAC solutions. And then a lack of effective engagement channels that could really influence key supply chain actors and contractors at scale. So these three activities here, and you can see growth across time. The Clean Heat Connect Network really is a trade ally network. So it's manufacturers and distributors that we set up and continue to see more and more members join us. So we've seen growth over that time. We've also developed really an enormous number of important tools and resources. I know the images are small there on the upper right, but we have installer reference materials that really come to us through these networks. We don't understand how to size the heat pump properly for this particular type of installation. We have really quite a number now of tools and reference materials that we make available to our networks, really to anyone but promoted through our networks.

You're also seeing on the far right image, that's our heat pump planner. It's an interactive tool. It's really for residents, contractors, and other parts of the supply chain to show how these things can be installed in a building depending on the building type. So those are just two examples of those tools and resources. And then we have our New York State Clean Heat Pump Contractor Network, kind of a mouthful there. We're also seeing a good increase in activity there really showing a year over year about a 50% growth in qualified participating contractors. So that's what we want to see is contractors that are in our programs that are qualified, that we know are doing quality work. So again, just a couple of key success factors, right? Partnerships is one that you've heard me talk about a lot today. This Trade Ally Network, 26 suppliers, covers 80% of the HVAC residential supplier market.

So it's a really strong cohort and we're seeing those partners increase at about 5% in 2024. We've had some new folks join like Midea that opened six distribution centers in the last six months in New York state. So Richard, back to your question, while they're not being manufactured, we do have these manufacturers opening new distribution centers across the state. Lastly, really, we are targeting these tools and resources to be responsive. They are things that we hear from these networks that they need, and then we are creating those tools with their input so that they can be more comfortable and more knowledgeable about this technology. The next step here is to provide business support to contractors. And that is really intended to help grow specific types of heat pump businesses for these contractors that the majority of their business is still in fossil fuel HVAC equipment. So how can we help them grow their heat pump, their heat pump business? And then the last piece I'll say, in terms of getting folks comfortable with the technology, we continue to support public spaces that have heat pumps deployed with educational tools and training for staff breweries is one example there where they've got heat pumps throughout the brewery. They've got signage that says this is a heat pump, this is what it's doing. Really trying to meet people where they are to get folks more comfortable with the technology on a day-to-day basis. I think I'm passing it on if there are no questions to

Anthony J. Fiore:
Max,

Susanne DesRoches:
Max,

Anthony J. Fiore:
Max Joel for NY-Sun.

Sherburne Abbott:
We're running really short because the Board meeting starts at 2:30.

Anthony J. Fiore:
All right. So what we'll do is there's two examples here we'll go through quickly. We'll save the last one, come back and talk about that in another time.

Max Joel:
Alright, good afternoon everyone. My name is Max Joel. I'm the Director of the NY-Sun Initiative at NYSERDA. So as Anthony said, we have two examples for you from the NY-Sun Initiative. From Distributed Solar. First is the program design itself. NY-Sun was created to be a market transformation initiative that's core to the program design, which is a declining incentive block structure. So as illustrated in the graph on the upper right, our incentive rates, the public funding going into solar projects in New York State represented by the line decline as market deployment represented by the vertical bars goes up. You can see we've really compressed public costs over the years, even as we've seen deployment rise steadily, including our record breaking 2024, where it tops off a bit of the top to y axis there today.

So this of course is really only part of the story and part of NYSERDA's comprehensive market transformation approach. You've heard the financing side of the story from Andrew. We've really worked hand in glove with the Green Bank team to deploy solar state and grow the market. And the other side of that is the regulatory side have some really significant regulatory innovations in New York, specifically community distributed generation and the value stack, also known as the value of distributed energy resources that have enabled the cost effective growth of the market. So I'll highlight on this slide some of the key market barriers we've addressed. It hasn't all been about grant funding. Of course, I'll be speaking in the next example a bit about our solar energy equity framework and one example of programs in our efforts to serve disadvantaged communities. But I also just wanted to highlight here, a really important part of our program has been quality assurance and our quality solar installer designation.

We have a very sophisticated inspection protocol. We send inspectors out to homes and to building sites to really ensure that safety and quality standards are met. That of course there's very important public function, but in terms of making sure that our dollars are well spent. But it's also been really key to building consumer confidence in solar. In New York, the quality solar installer designation is something that our installers really seek and compete for because they know it's recognized by their customers. And then on the commercial side, some of the projects Andrew was talking about, we hear from financers that our quality assurance and inspection protocol really helps them understand what they're investing in New York State. So this has all come together. I think, as you know, we hit our six gigawatt Climate Act mandate a year early last year. And my personal favorite data point, which Doreen shared in her testimony yesterday, is that this summer during peak electricity demand distributed solar reduced that peak by 6%.

And we estimated that translated into rate repair savings of $90 million during that period. So we really start to see where our renewable energy strategy and energy affordability strategies come together. I think we can go to quickly. Next slide. Next slide. So just to go deeper into that point about affordability being at the center of our efforts alongside market transformation statewide, solar for All is a newly launched initiative, at least at the statewide level. But it's something we've grown over the last eight years through a series of pilot efforts, including a large pilot with National Grid, it's illustrated on the bottom right, our expanded solar for all pilot. So this program delivers cost savings from community solar deployments directly to all of the energy affordability program participates, participants at our state's investor on utilities. That's about 800,000 households that starting this year will be directly benefiting from this program.

So without getting into too much detail, I'll just really focus on some of the same themes that Andrew and Susanne hit on really is that probably key to our success has been our close dialogue, listening to both customers, low income program participants and the developers and private investors, and really trying to meet all their needs. We heard from people who are participating in the states energy affordability programs that they needed our programs and our products to be simple, safe, accessible, and we heard from project developers and investors that when it came to community solar, they still were facing a significant market barriers in customer acquisition and customer turnover costs, especially serving low income customers. So what we did with this program design is try to address all those concerns, all those barriers by really coupling together our distributed generation strategy and our energy affordability strategy. And I hope you'll all be hearing more about this program in the years to come as it scales up. Thank you.

Anthony J. Fiore:
Thanks Max. That will conclude our programmatic report for today.

Sherburne Abbott:
Cool. I wish we had more time. It's really great, but can I make just one little point that is a conceptual thing. Go back to your very first slide.

Anthony J. Fiore:
The student slides, well keep going

Sherburne Abbott:
Because it's about the theory of the case, right? Because you have market technology, pull and push and to divorce from each other. And I think now we've moved to a place where they're connected and we have to show that they're connected and in ways that now begin to tell the r and d folks like myself that in fact the conversation needs to head in that direction as well. That it is not just all your good ideas, just travel up the food chain. You need to close that loop.

Anthony J. Fiore:
That's the hazard of putting up the beginning of a conceptual model with you, Shere.

Sherburne Abbott:
No, no, no. This is a modeler. This is the world in which I,

Anthony J. Fiore:
No, you're right.

Sherburne Abbott:
How we approach it, how it's shown really does. That's how people start to conceive of the relationships and the partnerships. RPE was designed on a model that closed this loop

Anthony J. Fiore:
Point well taken.

Dale Bryk:
Yeah. Maybe we talk about a logic model. When you show a logic model and you're showing the causation of you get to this, then that allows you to get to this. And some of them it's like three dimensional. But that enables you to do that. Not in a circular way, but just from where we are now to where we're going.

Jay Koh:
Thing I would add, this has all been defaulted, a lot of the center of gravity for the carbonization. So this whole market is going to exist over the next five to 15 years in an incredibly dynamic, evolving in a very bad way environment because of climate change. And so if we can, with Richard's point design, a technology transition that gets you to a better outcome, despite the fact that you're going to have way more heat events, freezing events, flood events, storm events, if you can show that if you not only replace your thermal generation, these solutions, and you end up being better off when the storm comes, that is the transformation. Although it's going to be retrofitting all of this because this seems a static model of where the environment's going to be, but we absolutely now know this agency is not going to. Yep.

Sherburne Abbott:
No, this is all great stuff. Okay. So this was just an informational item, which we wish we could go on with. Thank you so much. It's really great and it really helps us. Any other business? Do I have to do a motion? Can I have a motion to adjourn the meeting?

Lindsay Greene:
So moved.

Sherburne Abbott:
So moved. Yes. All in favor?

Members of the Committee:
Aye.

Sherburne Abbott:
Opposed? Meeting is adjourned.

Dale Bryk:
Thank you.