

**MINUTES OF THE
NEW YORK STATE ENERGY PLANNING BOARD MEETING
HELD ON JUNE 25, 2025**

Pursuant to notice dated June 13, 2025, the eighteenth meeting of the New York State Energy Planning Board (“Board”) was convened on June 25, 2025, at 1:00 p.m. at the Albany Capital Center, Albany, New York. A copy of the meeting Notice is annexed as Exhibit A.

The following Energy Planning Board Members or their designees were present:

- Doreen Harris, President and CEO of the New York State Energy Research and Development Authority and Chair of the Board
- Richard Ball, Commissioner of the Department of Agriculture and Markets
- Marie Therese Dominguez, Commissioner of the Department of Transportation¹
- Sean Mahar, designee of Amanda Lefton, Commissioner of the Department of Environmental Conservation
- Kevin Malone, designee of Dr. James McDonald, Commissioner of the Department of Health
- Terrence O’Leary, designee of Jackie Bray, Commissioner of the Department of Homeland Security and Emergency Services
- Vincent Ravaschiere, designee of Hope Knight, Commissioner and President & CEO of the Empire State Development Corporation
- Roberta Reardon, Commissioner of the Department of Labor
- Kisha Santiago, designee of Walter Mosley, Secretary of State
- Colleen Smith-Lemmon, designee of Marie Therese Dominguez, Commissioner of the Department of Transportation
- Carter Strickland, designee of John King, Chancellor of SUNY and Governor Appointee
- Jessica Waldorf, designee of Rory Christian, Chair of the Public Service Commission and Commissioner of the Department of Public Service
- Richard Dewey, CEO of NYISO (non-voting member)

Assemblymember Didi Barrett participated in the meeting remotely due to approved extraordinary circumstances but did not count towards quorum in accordance with the bylaws of the Board.

Introductory Remarks

Doreen Harris, President and CEO of the New York State Energy Research and Development Authority (“NYSERDA”), and Chair of the Energy Planning Board welcomed all to the meeting of the Board and noted the presence of a quorum. Chair Harris provided an update from the last meeting in May. Harris started by highlighting the recent work of the Northeast States Collaborative on Interregional Transmission, a collaboration among northeastern nine states to improve transmission ties. She announced that the Collaborative released a request for information seeking to identify potential interregional transmission opportunities across two of the three control areas, including in the NYISO’s service area, with the goal of enhancing grid reliability, improving market efficiency, reducing costs, and expanding clean energy use. Harris also noted that Governor Hochul launched the Essential Plan Cooling Program, an affordability initiative to provide free air conditioners to eligible New Yorkers with asthma who are enrolled in the Essential Plan for health insurance. This initiative is part of the State’s Extreme Heat Action Plan to mitigate health impacts from extreme

¹ Commissioner Dominguez arrived after the commencement of the meeting during presentations.

heat on New Yorkers. Harris also acknowledged that the prior day was the hottest day in NYC in over a decade, with statewide peak electric demand reaching 31,857MW. She noted that behind-the-meter solar reduced this peak demand by 5% and reduced total electricity load by 6%, which shows the importance of these generators.

Chair Harris then invited Richard Dewey, President and CEO of the NYISO, to comment on grid readiness and the heat wave. President Dewey noted that this was the first hot weather of the summer and proved to be challenging, but successful. He noted that both solar and wind generation were instrumental in avoiding hitting an all-time peak. He discussed the tightly coordinated transmission operation among the Northeast States and Quebec and the need to not rely on any one resource.

Chair Harris then highlighted that on June 23, Governor Hochul announced a directive for the New York Power Authority to develop and construct a zero-emission advanced nuclear power plant in Upstate New York to support the electric grid and provide clean power generation. She noted that NYPA will be working with DPS to develop one or more plants that will provide at least 1-GW of power. This activity will be coordinated with the forthcoming Master Plan for Responsible Advanced Nuclear Development.

Consideration of Minutes - May 27, 2025 Meeting (Agenda Item No. 1)

The first item on the agenda was to accept the minutes from the Board meeting held on May 27, 2025. No changes were requested to the minutes on the floor. Chair Harris made the motion, seconded by Commissioner Ball. The minutes were approved unanimously.

Discussion of Initial Analysis for the State Energy Plan (Agenda Item No. 2)

Chair Harris then turned to staff discussion of initial analysis related to the State Energy Plan. In preparation for the Pathways Analysis, Harris explained that the information being presented today was different from the Integration Analysis which was completed by the Climate Action Council in relation to the Scoping Plan. Instead of being a top-down analysis like the Integration Analysis, the planning cases in the Pathways Analysis are a bottom-up assessment of energy supply and delivery systems to meet forecasted needs through 2040 and accounting for policies, available technology, and requirements under Energy Law to consider affordability, reliability, economic development, jobs, equity and the environment. Harris noted that changes in federal energy policy and other external factors may impact the state's ability to meet goals, but progress continues to be made.

Carl Mas, Senior Vice President of Policy, Analysis and Research at NYSERDA stated that since the initial presentation on the pathways analysis provided in March considerable progress has been made. He noted that a great deal of uncertainty regarding federal policies remains, which complicates the ability to develop projections. Mas introduced Nick Patane, Assistant Director of Policy Analysis at NYSERDA to present the techno-economic pathways analysis.

Patane explained that the pathways modeling utilizes two main modules to develop the analysis. The first is the economy-wide module, which takes key data from NYSERDA industry studies and programs, and models stock turnover and sales of key equipment across the building, transportation, and other demand sectors. This data then allows for the development of a perspective on fuel use, electric loads, peaks, and emissions. The electric load data is then used in the second module, which is the electric sector model. This model builds a least-cost electric system to meet the loads, maintain reliability and solve under various constraints such as policy goals. The electric system costs and

emissions feeds back into the economy-wide model to create an aggregated analysis of economy-wide benefits and costs.

Patane explained that, presently, fossil fuel is still the dominant source of primary energy in New York today, with petroleum and natural gas accounting for approximately 75% of primary energy. Gas provides the largest source of fuel for electricity, followed by nuclear and hydropower. Renewables represent a growing share. On the demand side, he explained that buildings, both residential and commercial, account for 50% of energy use, followed by transportation, which accounts for 40% of energy use, and 10% of demand is from industrial uses. Patane explained that the techno-economic pathways analysis contemplates five different potential energy scenarios. Scenario 1 is no action, which accounts for what would occur if State and local energy policies pursued since the Climate Act did not exist. This is a comparison point to better understand net benefits and costs of the remaining four scenarios. Scenario 2 is current policies, which layers current state and local clean energy policies over Scenario 1, incorporating policies across the economy such as all electric new construction, advanced building codes, energy efficiency and electrification programs, incentivizing zero emissions vehicles, and deploying clean electric generation. Scenario 3 calls for additional action, which layers additional adoption of clean energy technology and potential future policies such as environmental markets. Scenarios 2 and 3 are the core planning cases for the plan. Scenarios 4 and 5 are net zero cases that show a top-down view of what would be needed to fully achieve the 2050 economy-wide emissions limits from the Climate Act. These scenarios build upon Scenario 3 with new actions. Scenario 4 assumes limited use of hybrid heat pumps and more all-electric customers. Scenario 5 assumes expanded use of customers that retain a supplemental gas heating system.

Patane then provided an outlook related to the scenarios on the key demand sectors. He started with the buildings sector, which demonstrated various changes among the five scenarios depending upon adoption or deployment of new technologies based on natural uptake versus incentivizing policies. The next sector was transportation, which has transition already underway though changes in federal policy could disrupt uptake. The scenarios show that incentives and growth in market adoption, together with policy and additional actions, could contribute significantly towards vehicle electrification. Finally, he discussed the industrial sector, where the main driver for change is growth in industrial activity. The scenarios show expected increases in large load demands, which will create additional energy needs. Early planning to ensure sufficient abundant supply will allow for the harnessing of this economic growth. In the more advanced scenarios, the industrial sector would introduce fuel switching for difficult to decarbonize processes.

Patane moved to discussion of the economy-wide results, which show load growth annually through 2040, particularly due to new large loads and vehicle electrification in the planning cases. The net zero scenarios show the most transformational load growth, driven by further adoption of heat pumps and industrial electrification. He then discussed changes to annual system peaks based upon the results, which show similar trends in peak load growth among the core scenarios. Large load addition remains consistent across all scenarios, with vehicle electrification affecting peak load growth to varying degrees. Timing of peak load varies depending upon scenario, with summer peaks continuing in Scenarios 1-3, Scenario 4 showing a winter peak, and Scenario 5 being a dual peaking system where peaks could occur in either summer or winter depending upon weather variables. These results show significant value for flexible load use, where shifts are made in usage to mitigate peak growth.

Patane then moved to the use of the economy-wide results in the electric system model, which models an electric system to meet the projected loads, maintain reliability, and meet any scenario-

related policy constraints. He explained that the model shows achievement of a 70% renewable grid in 2033. Achieving zero emissions by 2040 would require a significant increase in deployment and use of a more diverse mix of system resources. Patane emphasized the need to preserve existing hydro and nuclear assets as major contributors to the system. The model also accounts for age-based retirements of old generators. The model provided for significant addition of renewable resources. A sensitivity modeled a relatively slower build out of solar and wind capacity due to recent federal actions. The model also showed continued reliance on combustion generators. Patane next discussed the modeling as related to the gas system. He explained that, while gas consumption is projected to decline, it will remain a significant resource throughout the relevant period. As such, the gas system will require continued investment to ensure safe and reliable provision of service. The next topic covered by the model was economy-wide emissions reductions, which show emissions reductions under Scenarios 2 and 3 hitting a 40% reduction between 2036 and 2038.

Patane then provide the key takeaways from the Pathways Analysis. He indicated that in the near term, through 2030, the energy system is continuing to evolve in meaningful ways, with State action accelerating this evolution. The incremental progress through 2030 is muted, as it will take time for the effects of these changes to translate into stock transformation. On a longer-term basis through 2040, the impacts of existing policies will be more fully realized over time. Scenarios 2 and 3 will show significant transformation of the energy system, with substantial increases in electric load and declines in gas consumption, though all major fuels used today remain important. Finally, Patane explained that the existing policies will establish a foundation for economy-wide emissions reductions, but progress on achieving 40% emissions reductions has been and continues to be impacted by external factors. Achieving a long-term net-zero economy-wide emissions goal by 2050 would require substantial incremental efforts beyond the currently envisioned policies.

Chair Harris thanked Patane for the presentation and the analysis team for its complex and thoughtful examination of these issues. She highlighted the need for multiple scenarios to assist in understanding uncertainty in long-term projections. Harris noted that adaptability is central to the State's longer-term needs, including the repowering of renewable and combustion generators. She emphasized that, even with these challenges, the analysis shows the State can continue to make progress towards a clean energy economy. Harris then invited questions from the panel. Carter Strickland, designee of Chancellor King, asked whether data centers are accounted for in these models. Patane indicated that 16 TW hours of new loads were accounted for in these models and stated that data centers are part of those additions. He emphasized that early planning is essential to accommodate load growth and economic development.

Mr. Mas then introduced the Household Energy Affordability Analysis. Mas explained this analysis provides perspectives related to the State's current affordability challenges as well as ways to reduce energy burdens. He introduced James Wilcox, NYSERDA Program Manager on the Policy and Analysis team, to discuss the analysis and results. Dr. Wilcox explained that energy affordability challenges exist throughout the United States and New York, with household energy and transportation spending as major contributors to affordability. While New York has higher energy prices than the US average, average energy consumption in the state is lower, leading to lower average combined household and transportation energy expenditures in New York overall. He noted that, while there is an overall pattern of lower expenditures statewide across all income levels, a disproportionate burden remains on households at lower income levels. Lower income and more vulnerable households in New York also experience energy insecurity at above average rates. Wilcox explained that the energy affordability analysis analyzes household and transportation energy expenditures for household profiles and journeys that are representative of the scenarios from the

economy-wide pathways analysis presented earlier. The analysis provides supplemental household scale data for 9 different profiles representing low-, moderate- and average-income households in New York City, and the downstate and upstate regions to analyze energy affordability for each representative profile. Each household profile analyzes future household and transportation energy expenditures for four different adoption models: a baseline of average existing equipment with fossil fuel heating and transportation, a conventional replacement model continuing fossil fuel heating and transportation but with more efficient equipment, a moderate efficient electrification model where some electrification and basic building envelope measures are adopted, and a high efficient electrification model where more electrification, greater envelope measures, efficient electric appliances are adopted. For the last two models, building weatherization and efficiency retrofits are included in the cost analysis.

Wilcox then presented on 3 of the potential profiles for families in 2031. The first was an upstate moderate-income family in a single-family residence with oil heat. This profile indicated that energy cost savings are seen from conventional replacement, with further energy cost reductions where moderate- and high-efficient electrification options are adopted. The next profile was a similar household which used gas heat. Wilcox explained that this household profile may see an incremental increase or decrease in energy costs with the adoption of a heat pump, depending on efficiency levels for electrification. The final profile presented was a moderate-income family in NYC with natural gas heat living in a multifamily property. This profile showed energy savings across all profiles, with higher costs savings for the conventional replacement or high-efficient models. Wilcox explained that these profiles and models focus on operating energy costs but cautioned that equipment costs need to also be considered. All profiles show higher upfront costs for the high-efficiency equipment necessary to achieve the energy savings and associated operating cost reductions.

Wilcox closed with key takeaways on household energy affordability. Across all profiles and models, households may see gradually declining rates of energy consumption and spending as more efficient equipment is adopted. Households that drive will also improve their transportation energy use through both conventional replacement and vehicle electrification. Households that heat with delivered fuels can obtain significant savings through efficient electrification. Households using natural gas for heat may increase their costs through adopting a heat pump alone but may lower costs if they also adopt envelope efficiencies and other efficient appliances and lighting. Households which pursue efficient electrification may result in lower combined operating costs, but net costs when including up-front costs of equipment may be higher. Wilcox closed by noting that low- and moderate-income households face the most affordability challenges for energy. He suggested that policy and market solutions which focus on lowering up-front costs and other barriers to adoption for a range of energy efficiency measures have the potential to enable households to realize lower, more affordable operating costs. This, in turn, helps to alleviate energy insecurity and energy burdens.

Chair Harris then opened the floor to questions from board members. Kisha Santiago asked how the model incorporates changing utility rates and accounting for those factors across fuel types. Wilcox explained that current rate projections are trend-based, so the assumptions extrapolate past trends and project them forward. Jessica Waldorf asked what state-specific data and assumptions were utilized in the assumptions behind the analysis. Wilcox answered that a variety of the assumptions are built in and drawn from underlying building system modeling for the economy-wide analysis as well as transportation data. He emphasized that the underlying information is specific to New York. Waldorf also noted that on the final conclusion side, the fact that upfront costs may increase also allows for drawing the conclusion that there is a need to be sensitive to this issue when considering the design of programs. Mr. Mas also noted that this analysis is a paradigm shift by including costs associated

with both the physical home as well as transportation as opposed to prior iterations which focused solely on the home itself. Santiago then asked how to incentivize landlords passing savings along to tenants. Wilcox noted that the analysis was mindful that some households do not pay for certain elements of these costs and the analysis was designed to show those types of variability in the illustrations. Assemblymember Barrett asked about the plan for explaining increased up-front equipment costs and how those will be met to the majority of residents who may be one emergency from becoming low-income. Wilcox state that the profiles developed were intended to show a diverse representation of courses of action for a wide variety of households and this data helps support the strong programs that exist in New York. Chair Harris noted that this analysis shows that there are gaps which need to be addressed. Jessica Waldorf also noted that these changes will be part of a phased and managed transition.

Presentation on Selected Energy Topics: Electricity, Nuclear, Natural Gas, Petroleum, Buildings (Agenda Item No. 3)

Following a brief recess, the Board convened to hear presentations on selected energy topics. The first presentation was on electricity, presented by David Coup, Assistant Director for Policy, Analysis and Research at NYSERDA, and Jessica Waldorf, Chief of Staff and Director of Policy at DPS. Jessica Waldorf started the presentation by noting that the electricity chapter is a comprehensive view of the system. She highlighted the continued need for reliable power at just and reasonable rates. This chapter was drafted to demonstrate how electricity demand and use have changed over time with significant system changes in the last decade. She noted that the pace of decarbonization and new sources of energy demand are new challenges that require continued planning. Waldorf explained that there are six key findings, with related State actions and recommendations. First, the State will continue to support clean energy resources including large-scale renewables, as well as distributed energy and community solar to meet demand and preserve reliability. Support for expediting development of clean energy zones and implementing the RAPID Act are related recommendations. The State will also need to be strategic in the pace retirement of downstate generator resources. Next, the State is encouraged to continue leveraging and expanding storage deployment and demand side resources, including energy efficiency measures and flexible technologies to lower the cost of the clean energy transition and enhance grid reliability. Waldorf noted that recent PSC approvals for bulk and retail energy storage may significantly increase deployment of these programs. She highlighted that New York needs to continue serving as a national leader in storage safety. The next finding emphasizes the State's need to be strategic in identifying and integrating clean firm technologies with the attributes needed to support achieving a zero emissions electric grid. This includes identifying technologies that can be deployed statewide and in the downstate region to address reliability needs and evaluate the financial mechanisms to support such deployments. She also highlighted the need to continue support of innovation and demonstration projects.

David Coup continued to present the chapter's remaining key findings. He noted the continued need for the State to enhance system reliability and make investments in the transmission and distribution systems. Coup highlighted the Coordinated Grid Planning Proceeding to facilitate planning coordination between DPS, NYISO, the utilities, and NYSERDA. He emphasized a need to find ways to coordinate distribution and transmission solutions to problems and foster adoption of advanced transmission technologies. He also noted the need to continue enhancing interregional coordination across states. The next finding Coup presented is the State's need to evaluate wholesale market and retail rate structures to value and compensate resources appropriately, prioritizing energy affordability for consumers. This included an assessment regarding whether current capacity market

constructs are providing the proper incentives and evaluate if the mix of ancillary services are adequate through 2040. This will also require identifying additional planning or rules to examine or adjust to support the zero emissions electric system. Coup concluded by stating that the State must ensure the investments in the transmission and distribution system are designed to withstand climate change. While the system currently maintains good metrics for reliability, additional metrics should be examined and when needed supplemented to enhance our current processes. This would include the incorporation of planning processes that are scenario based to fold in the impacts of climate change.

The next presentation was related to nuclear energy, presented by Rob Habermann, Senior Advisor for Policy Implementation at DPS. Habermann explained that the chapter provides an overview of the existing nuclear facilities within the State and the regulatory regime that governs them. It also provides an outlook for advanced nuclear development and the related regulatory considerations. The primary finding of the chapter is that nuclear energy has provided reliable, zero-emissions electricity for decades and has unique benefits which align with the scale of the State's emerging needs. The four operational commercial nuclear power plants provide 20% of the State's electricity supply. He noted that based on the expected load growth in the pathways analysis, the State will need approximately 20 GW of dispatchable emissions-free generation. Advanced nuclear technology is rapidly emerging, but most have not been deployed at present. The chapter recommends considering extension of the Zero Emissions Credit program to ensure continued operation of the existing nuclear fleet and advance towards statutory targets. Habermann also discussed the need to examine key considerations in relation to advanced nuclear for long term planning, recommending continued development of the Master Plan for Responsible Advanced Nuclear Development. He also discussed the possibility of multistate collaboration to move project development forward, achieving economies of scale and de-risking new nuclear development. Finally, Habermann discussed the need to pursue opportunities for early deployment action in parallel with ongoing initiatives. He highlighted the governor's directive to NYPA in coordination with DPS to develop one or more nuclear facilities capable of producing at least 1 GW of electricity.

Natural Gas was the next topic presented by Mr. Habermann and Seth Berkman, Senior Project Manager at NYSERDA. Mr. Berkman opened by explaining that natural gas accounted for 39% of New York's primary energy consumption in 2022 across residential, commercial, and industrial applications. He noted the natural gas sector has entered a transition period in which it will remain a crucial part of meeting the State's energy demands across all scenarios throughout the SEP planning horizon despite expected declines in use. Berkman explained that gas planners must continue to ensure safety and reliability by addressing existing and emerging risks. He highlighted that New York has a robust multi-stakeholder approach for managing gas system reliability, including advanced winter preparedness planning, intra- and inter-state emergency response coordination, regulations to ensure safe installation and operation of pipelines, and assessments of how utilities can harden their systems to threats posed by climate change. Gas transmission operators, utilities, and the State should continue to plan for a reliable and resilient gas system through strategies like maintaining a diverse supply portfolio and demand management. Berkman explained that gas planning and investment standards need to be evaluated to ensure that they maintain reliability while protecting affordability as the climate and patterns of consumer demand change. Gas utilities ensure their systems can meet peak demand for a design day, which typically reflects the coldest weather historically experienced in a utility service territory. Utilities will need to evaluate if the current planning standards properly balance reliability and ratepayer costs when considering the best available climate science and customer usage data.

In discussing declining gas use, Berkman noted shifts in State policy and customer preferences for cleaner alternatives. Considering these shifts, the State should plan through its programs, policies, and regulations to further reduce greenhouse gas emissions while also ensuring access to safe, reliable, and affordable energy. This requires utilities to invest efficiently in their systems, including pipe and non-pipe alternatives as well as demand management. Recommendations were made for gas and electric utilities to conduct infrastructure planning in an integrated fashion to optimize energy system investments. To aid in this, the State should assist in developing necessary analytic tools for such an endeavor.

Mr. Habermann then continued, noting that new approaches may be needed to give the Public Service Commission (PSC) and gas utilities greater flexibility to plan for a safe and strategic reduction in gas investments as customers adopt efficiency and electrification measures. If customer accounts begin to decline, limits on the commission's ability to direct and manage the gas system transition could create long term affordability risks for customers. He also discussed the need for innovative cost recovery practices as a solution to supporting the operational viability of gas utilities, ensure affordability and improve alignment between cost causations and allocations. In response to this, recommendations were made to conduct research into frameworks associated with innovative cost recovery practices and evaluate the risks and benefits of these approaches. With respect to renewable natural gas, Habermann indicated that it can reduce emissions in the gas system, but recommended sourcing from sustainable feed stocks. He stated that hydrogen should not be blended into the broader natural gas distribution system due to current safety, affordability, and operational challenges.

Habermann noted the importance of ensuring a just transition for workers and businesses, recommending continued work with utilities and labor organizations to ensure workers have access to economic opportunities throughout the transition. Recommendations were made for continued State research on the employment impacts related to the clean energy transition on fossil fuel workers to support the development of just transition policies. He explained that transition from natural gas must also ensure that disadvantaged communities (DACs) have equitable access to clean energy and are not unduly burdened financially or otherwise. It was recommended that the State adopt clean energy program design elements to ensure that DACs and low- to moderate-income households have access to clean energy upgrades. Habermann closed by emphasizing the need to develop a strategic gas system transition plan and recommended that the State work collaboratively with utilities and key stakeholders to develop transition plans to be published with the next update to the State Energy Plan.

Nicole Kerrison, Program Manager for Energy Markets at NYSERDA, presented the next topic area covering the Petroleum analysis and recommendations. Kerrison stated that petroleum fuel consumption has declined over the past fifteen years in New York but continues to constitute approximately 36% of primary energy consumption as of 2022. The most used petroleum-based products are distillates, which consists of heating oil, and distillate products. Other products consumed in the State include motor gasoline, aviation fuel and propane. Petroleum is also used in electricity generation, particularly as a backup fuel during the winter. Kerrison explained that New York has no refinery capabilities and minimal production capacity, necessitating that the state's supply be imported from other states and nations via pipeline, rail, and barge. She emphasized the need for resilience and reliability in the petroleum supply system as the state transitions to cleaner fuels. This will require continued support for monitoring petroleum fuel infrastructure, supply, inventory, and resiliency to keep New York fueled. Recommendations were also made to monitor and require reporting related to petroleum fuel inventories by bulk terminal operators and increased

monitoring of fuel markets and supply chain to provide updated information to consumers and policymakers. Kerrison closed by discussing support for alternative fuel use in the existing petroleum system infrastructure to lower emissions while maintaining reliability and resilience. She recommended exploring further bio-blending and development of additional policies with sufficient flexibility to ensure alternative fuel integration while minimizing costs and other impacts.

Chair Harris then opened the floor to discussion by the board members. She asked how the State Energy Plan (SEP) differs from typical utility planning for natural gas systems and how the board should think about the regional needs of utility planning versus statewide trends. Habermann explained that the SEP is developed to effectuate the policy goals of the state. Utility planning is related directly to capital investment proposals submitted to the PSC. As such, the processes are separate, but intertwined. Seth Berkman also noted that the SEP is performed on an economy-wide basis across sectors instead of individual utility needs. Nick Patane also noted that utilities have a more granular understanding of their local needs beyond what is captured in the modeling tools. There could be additional layers of information available from that level of detail that utilities can consider.

The next presentation was provided by Macy Testani, Senior Project Manager on the Policy Development Team at NYSERDA, on alternative fuels. Testani explained that low carbon alternative fuels are an important complement to electrification in the state's clean energy transition strategy. These fuels should be directed toward end uses which maximize greenhouse gas emissions reduction while minimizing cost and environmental impacts and avoiding impacts associated with co-pollutant emissions. The primary targets for alternative fuel use will be supplemental heating and difficult to electrify end uses such as industrial processes, long distance aviation, some medium- and heavy-duty transportation, and limited power generation. She explained that alternative fuels should be carefully managed to realize greenhouse gas emissions reductions. Emissions from alternative fuels are considered in two different frameworks. The first framework is life cycle analysis, which examines global greenhouse gas emissions from land use change, feedstock production processing, fuel production transport, and as well as biogenic combustion—all emissions associated with the alternative fuel, and the framework considers biogenic combustion as carbon neutral. The second framework is emissions accounting under the Climate Act. It was recommended that alternative fuels be carefully managed to realize greenhouse gas emissions reductions. Testani then evaluated the impacts associated with various specific alternative fuels. In evaluating impacts for alternative fuels, she noted that these fuels typically have equal or lower net co-pollutant emissions compared with their fossil fuel counterparts. She noted the importance of accurately and robustly tracking and accounting for alternative fuels and their associated emissions as they move from production either in or out of state to their end use point to ensure actual emissions reductions. The state must balance integrity and credibility of emissions reduction claims and the administrative burden associated with the tracking system to ensure emissions reductions and to accelerate alternative fuel deployment. The delivery of fuels to New York State for use within the State is of critical importance and the State should avoid double counting of emissions reductions where possible. Testani recommended a clear physical and contractual path linking alternative fuel production to its end use. She closed by emphasizing the need for a balanced approach to fuel tracking, which can support regional sourcing as well as local benefits and allowing alternative fuels to leverage existing infrastructure.

Finally, a presentation was provided by Ke Wei, Director of Strategy and Planning, and Leslie Green, Project Manager on the Policy Development Team, both from NYSERDA on the buildings chapter. Leslie Green started the presentation by highlighting the importance of modernizing and decarbonizing buildings to provide comfort, health and safety, climate resiliency, and economic

benefits to New Yorkers. She noted that the energy transition highlights the opportunity for us to invest in and expand access to quality housing with a focus on supporting low- and moderate-income households and residents in disadvantaged communities. She explained that there are 5 main strategies to support these goals: prioritizing energy efficiency and weatherization, advancing efficient electrification, continuing innovation and market development, enabling demand management and load flexibility at scale, and reducing embodied greenhouse gas and refrigerant emissions. The intention was explained as a phased approach for existing buildings as they make capital improvements to manage costs and disruptions associated with energy upgrades, prioritizing the most cost-effective measures first. She noted that up-front and operating costs continue to be barriers to adopting efficiency and decarbonizing, recommending the State continue to provide financial incentives and affordable financing to reduce costs and motivate New Yorkers to make the upgrades necessary for energy and cost savings with a priority placed on support for energy upgrades, envelope improvements, weatherization, and other load reduction measures to deliver both energy and cost savings. Green noted that the costs of upgrades constitute an acute challenge for low- and moderate-income households and residents of DACs, necessitating additional prioritization for state support. These programs should focus on weatherization and improving efficiency prior to electrification, which will need additional funding. Beyond individual home improvements, the State should continue to expand or modify energy bill assistance programs through opportunities to join community solar, pairing electrification with solar benefits, and allowing equitable electrification in affordable housing. Green also noted the need for State support of market development to expand the clean energy workforce and support the supply chain in adapting to provide these advances while increasing awareness and confidence in clean heating and cooling products.

Ke Wei then continued the presentation, explaining that the technologies presently available may not be the technologies available in the future. As such, it is critical that innovation and market transformation continue to expand decarbonization solutions across building types. She highlighted the need for State support of innovation and demonstration of drop-in decarbonization solutions and accelerating the testing and commercialization of new technologies. She noted that decarbonizing the building sector will require moving from a building-by-building solution to larger neighborhood-scale and community-based efforts. Such a shift requires coordination among utilities, municipalities, and communities for implementation of networked solutions such as thermal energy networks (TENs), which can provide larger scale decarbonization opportunities when deployed. She recommended the development of a TENs roadmap to identify key market barriers and potential solution sets to support broader development and implementation of TENs along with a clear regulatory framework for such projects. Further, Wei noted the need to expand mechanisms for further integration and to monetize flexible equipment load to aid in managing operating costs, optimize grid investments, and maintain grid reliability. This includes the continued development of product standards for flexible load capabilities. Additionally, continuing the development of building codes and regulatory frameworks which drive improved building energy performance will be critical. The State should continue to evaluate ways to reduce energy use intensity in the next code update. Wei concluded by recognizing that buildings across the State remain vulnerable to the impacts of climate change and emphasized the importance of ensuring that the equipment and investments made will last for their expected useful lives. This would involve pairing efficiency measures with resiliency measures. She also recommended the development of a resiliency first energy storage incentive for public sector facilities.

Chair Harris then opened the floor to questions and discussion. Richard Dewey noted that none of these chapters can stand alone, as they are all integrated and critical for load forecasting. He noted that as the plan moves forward, the members should be mindful that changing one piece may

necessitate changing other elements that are affected. Commissioner Ball compared this to a jigsaw puzzle being pieced together. He appreciated the focus on maintaining diversity in energy sources as being honest and accurate. Chair Harris agreed and noted that the interconnectedness of all the systems is a main priority that will be improved upon with ongoing planning.

Other Business

Chair Harris asked if there was any other business, which had no responses. She noted that the board will reconvene over the summer to issue a draft plan for comment to the public.

There being no other business, the meeting was adjourned.

A handwritten signature in black ink, appearing to read 'SES', with a long horizontal flourish extending to the right.

Sarah E. Simpson, Secretary to the Board
Senior Counsel, NYSERDA