Summary of Climate Action Council Advisory Panel Strategies

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Panel	Strategy tag	Strategy/Initiative	Strategy type	Description	Emissions impact
Ag & Forestry	AGF-S01	Soil Health Management Practices (also referred to as Regenerative Agricultural Practices)	Mitigation	Reduce net GHG emissions and increase carbon sequestration/storage and other environmental benefits through adoption of soil health management practices (e.g., cover/double crops, reduced tillage, perennial crop systems. Also referred to as Regenerative Agricultural Practices).	Low (2030) - Medium (2050)
Ag & Forestry	AGF-S02	Nutrient Management	Mitigation	Nutrient Management - Reduce nitrous oxide (N2O) emissions while achieving desired crop yield and quality through continued and expanded nutrient management planning and implementation on crop fields, hay fields, pastures, orchards, vineyards, and other agricultural lands receiving nutrients.	Low-Medium (2030) - Medium-High (2050)
Ag & Forestry	AGF-S03	Alternative Manure Management	Mitigation	Alternative Manure Management - Reduce methane emissions by implementing practice systems specifically planned and designed for each farm, such as cover and flare systems, anaerobic digester systems, and other/innovative systems that collect, capture and combust methane from manure storages or prevent methane production from manure storage.	Medium (2030) - High (2050)
Ag & Forestry	AGF-S04	Precision Feed, Forage and Herd Management	Mitigation	Precision Feed, Forage and Herd Management – Reduce methane and nitrous oxide emissions while achieving desired ruminant growth and lactation goals. Strategy acknowledges that additional methane emission reduction may be realized from feed additives developed in the future.	Medium (2030) - Medium-High (2050)
Ag & Forestry	AGF-S05	Agroforestry	Mitigation	Agroforestry - Adding trees into areas of agricultural production to reliably increase carbon sequestration and other environmental benefits.	Low (2030) - Medium (2050)
Ag & Forestry	AGF-S06	AEM Planning for Climate Mitigation/Adaptation, aka “Carbon Farm Planning”	Enabling	AEM Planning for Climate Mitigation/Adaptation, aka “Carbon Farm Planning”	
Ag & Forestry	AGF-S07	Benchmarking and Monitoring	Enabling	A new program for long-term, annual monitoring and benchmarking of GHG mitigation, carbon sequestration, and adaptation performance across applicable areas of management on farms in NYS. Information products provide useful, farm-level data for confidential benchmarking by farmers as well as publicly available data through farm case studies (with farmer agreement) and aggregated datasets to support future policy, research, and implementation.	
Ag & Forestry	AGF-S08	Avoided Forest Conversion	Mitigation	Keep Forests as Forests: Maintain and enhance the state’s carbon sequestration potential through avoided forest conversion	High (2030) - High (2050)
Ag & Forestry	AGF-S09	Avoided Agricultural Land Conversion	Enabling	Maintain and protect the states’ potential for carbon sequestration on agricultural lands through avoided farmland conversion; enhance farm viability, increase food security, and implement smart growth to reduce future GHG emissions from Vehicle Miles Traveled.	
Ag & Forestry	AGF-S10	Bolstering Local Agricultural Economies	Enabling	Support emission reductions by enhancing existing programs, and promoting the expansion of those programs, that encourage farm viability and resilient communities through the production and consumption of local food	
Ag & Forestry	AGF-S11	Enhance local government planning for land conservation	Enabling	Encourage and provide guidance for the inclusion of farmland and forestland protection in municipal comprehensive plans. Require inclusion of farmland and forestland protection in state funded municipal comprehensive plans. Encourage and fund development of Natural Resource Inventories.	
Ag & Forestry	AGF-S12	Improved, Sustainable Forest Management	Mitigation	Maintain and increase carbon sequestration in NYS forests by securing forest regeneration, improving forest health and productivity, and restoring degraded forests through the widespread adoption of improved, sustainable forest management.	High. 3.3-11.0 million metric tons of CO2 e per year
Ag & Forestry	AGF-S13	Afforestation/Reforestation	Mitigation	Increase forested acres through afforestation and reforestation efforts to establish climate adapted and resilient forests. There are potentially 1.7 million acres of marginal lands available for establishing forests.	High. 5-12 million metric tons CO2 e per year

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Ag & Forestry	AGF-S14	Urban Forestry	Mitigation	Increase and maintain tree cover in urban and developed areas to reduce energy use and corresponding GHG emissions through the shading and cooling effect of trees. Increase carbon sequestration through tree establishment and extending the life of urban trees through improved maintenance.	Medium
Ag & Forestry	AGF-S15	Climate and Forest Carbon Research	Enabling	Expand funding for peer reviewed climate, forest carbon, and applied forest management research	
Ag & Forestry	AGF-S16	Workforce Development	Enabling	Develop and support workforce development and training programs for forest sector workers to enable an increase demand in forestry services to be met. Incorporate forest carbon and forest carbon management into training programs and forestry curriculums at the high school (e.g., BOCES) and college level.	
Ag & Forestry	AGF-S17	Outreach and Education	Enabling	Facilitate the development of a forest-based culture and economy through state-of-the-art outreach, education and marketing techniques to inform the public and policy makers about forest and forest carbon issues	
Ag & Forestry	AGF-S18	Expand Markets for Sustainably Harvested Durable Wood Products	Enabling	Advance the use of high value timber for long lasting products while advancing forest health and forest carbon sequestration. Displace GHG-intensive building materials (steel, concrete) with durable wood products (carbon sequestered in cross-laminate timber, hard wood floors) that reduces the net building and infrastructure GHG and provide long duration carbon storage	
Ag & Forestry	AGF-S19	Sustainable biomass feedstock action plan for 2050 hard-to-decarbonize products	Enabling	This plan will identify feedstock volumes and production methods that utilize NYS biomass resources in a sustainable, sequestration maximizing manner to create replacements for hard to decarbonize fuels while considering other uses for these feedstocks (see recommendation on low-carbon product development). Fuel derived from biomass will likely have a limited but strategic role in New York's 2030 and 2050 needs	
Ag & Forestry	AGF-S20	Increasing market access for NY low-carbon products	Enabling	Enhancing carbon sequestration, greenhouse gas mitigation, and economic development opportunities by reducing barriers and creating competitive advantage for NY produced low carbon products	
Ag & Forestry	AGF-S21	Financial and Technical Assistance for Low-Carbon Product Development	Enabling	Provide financial and technical assistance to grow a bioprocessing industry in New York that utilizes low-grade wood and other biomass residuals to create bio-based substitutes for fossil fuel based products	
Ag & Forestry	AGF-S22	Bio-based Products Research Development & Demonstration Overview	Enabling	Develop a demonstration and pilot project portfolio to drive investment in the areas of biobased low-carbon fuels, products, and related sequestration that considers intersection of industrial/manufacturing, agriculture, transportation, and power generation sectors. Fund Innovation challenges and select projects that can scale beyond business as usual	
Ag & Forestry	AGF-S23	Net Negative Carbon Dioxide Removal (CDR)	Enabling	Advance deployment of natural CDR pathways that serve to create a negative emissions profile for bioeconomy products and other economic sectors. (long duration carbon storage beyond net zero)	
EITE	EITE-S01	Financial and Technical Assistance	Mitigation	Provide technical assistance to help identify economically viable decarbonization projects and provide comprehensive energy management planning. Provide financial assistance for decarbonization projects and leverage low-cost hydropower to support industry.	Low (2030) - High (2050)
EITE	EITE-S02	Low-Carbon Procurement Policies	Mitigation	Develop preferential procurement standards for low-carbon building materials and remove impediments to the State's purchase of low-carbon materials. Low-carbon materials will be required to reduce emissions in the built environment. Providing a value proposition for manufacturers to produce low-carbon products will help reduce process related emissions.	Low (2030) - Medium (2050)

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EITE	EITE-S03	Research Development & Demonstration (RD&D)	Enabling	Develop a comprehensive Innovation Roadmap to determine priorities for deep decarbonization RD&D investment. Meeting the CLCPA goals for industry is not technically and/or economically feasible with currently available technologies alone. This research effort should analyze the social, financial, and technological characteristics of solutions that will enable industry to meet CLCPA goals. The research should consider the intersection of the industrial/manufacturing, agriculture, transportation, and power generation sectors when determining investment priorities.	
EITE	EITE-S04	Workforce Development	Enabling	Provide workforce development training on existing and new innovative emission reduction technologies	
EITE	EITE-S05	GHG Reporting	Enabling	Expand the universe of facilities that are required to report on their GHG emissions.	
EITE	EITE-S06	Economic Incentives	Enabling	Leverage the State's climate policies to develop an in-state supply chain of green economy companies by engaging in business development discussions and offering loans, grants, tax credits, and other economic incentives.	
Waste	WST-S01	Organic Waste Reduction and Recycling	Mitigation	Reduce methane and carbon dioxide emissions by reducing the combustion and landfilling of organics and other methane/GHG producing wastes.	High (2030) - High (2050)
Waste	WST-S02	Extended Producer Responsibility / Product Stewardship	Mitigation	Reduce methane and carbon dioxide emissions from waste disposal facilities by enacting broad Extended Producer Responsibility (EPR)/Product Stewardship requirements to cover the recycling of packaging and printed paper, carpet, tires, textiles, solar panels, wind turbines, all batteries, appliances (especially those containing refrigerants), mattresses, and other methane generating wastes.	High (2030) - High (2050)
Waste	WST-S03	Reduce fugitive emissions	Mitigation	Identify and reduce fugitive emissions of methane from landfills and anaerobic digesters through baseline measurement, increased monitoring, and engineering and regulatory programs to reduce leaks.	High (2030) - High (2050)
Waste	WST-S04	Recycling Markets	Mitigation	Reduce methane and carbon dioxide emissions from landfills and combustors by supporting domestic recycling facilities and markets for recovered resources, including compost, digestate, and recycled aggregate/building deconstruction materials.	Medium (2030) - Medium (2050)
Waste	WST-S05	Biogas Use	Mitigation	Recognizing that some waste generation is unavoidable, determine limited and strategic best uses for energy produced from biogas/RNG derived from organic waste. Assess use in the waste transportation sector, electric co-location or cogeneration opportunities for energy/heat intensive industries and hard to electrify users. Utilize market value of the energy to support organics diversion and waste reduction initiatives. Align energy price analysis with funding needs for build-out of organics recycling infrastructure.	Medium (2030) - High (2050)
Waste	WST-S06	Waste reduction, reuse, and recycling	Mitigation	Reduce methane and carbon dioxide emissions from waste disposal facilities by supporting robust waste reduction, reuse, and recycling initiatives.	Medium (2030) - Medium (2050)
Waste	WST-S07	WRRF Conversion	Mitigation	Transform Wastewater Treatment Plants from waste disposal priority to Water Resource Recovery Facilities (WRRFs) that emphasize capture of beneficial products.	High (2030) - High (2050)
Waste	WST-S08	Fugitive emissions from WRRFs	Mitigation	Measure and reduce fugitive emissions from WRRFs, septic and sewer systems. Where density and local conditions allow, eliminate septic tanks and convert to municipal sewer system collections or advanced onsite treatments.	High (2030) - High (2050)
Waste	WST-S09	Refrigerant Diversion	Mitigation	Reduce GHG emissions associated with end-of-life management of appliances that contain High-Global Warming Potential refrigerants. Benefits are highest in the near-term while these refrigerants are still in widespread usage.	High (2030) - Medium (2050)
Waste	WST-S10	Research	Enabling	Continue to research and obtain more accurate data on climate impacts from solid waste	

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Waste	WST-S11	Green Jobs	Enabling	Green, equitable jobs and workforce development. Institute coordination around workforce recruitment and employment frameworks. Develop strategies that result in a living wage green-collar labor system for residents and communities that are economically disadvantaged. Sustainable funding for environmental justice, resident-led initiatives with proven, shovel-ready (local and regional) solutions that reduce and divert recyclables and organics with a focus on multi-family buildings, disadvantaged, BIPOC, and underperforming communities.	
EEH	EEH-S01	Codes and Standards	Mitigation	Enact enabling legislation and adopt codes, standards, and regulations to improve energy efficiency, reduce emissions, and enhance building resilience. Adopt regulations that phase out fossil fuel use in buildings, requiring energy-efficient electric heating and cooling, electric hot water heating, and electric appliances.	High
EEH	EEH-S02	Benchmarking and Disclosure	Mitigation	Require measuring building energy usage, benchmarking energy performance, and making that information accessible via disclosure or labeling.	Low (but enables other mitigation)
EEH	EEH-S03	Gas System Transition	Mitigation	Advance a managed, phased, and just transition from reliance on fossil gas and the gas distribution system to a clean energy system, including elimination of embedded subsidies for fossil gas.	High (overlap with #1)
EEH	EEH-S04	Transition from HFCs	Mitigation	Advance a managed and just transition from reliance on HFC use as refrigerants and in all products used in building construction.	High
EEH	EEH-S05	Public Financial Incentives	Enabling	Provide incentives for single family, multifamily, and commercial and institutional building owners that speed uptake and help to transform the market for building efficiency, electrification, and decarbonization, with a focus on enabling uptake that benefits LMI households, affordable housing and public housing, and DACs.	
EEH	EEH-S06	Public and Private Low-cost Financing	Enabling	Low-cost financing for energy efficiency, electrification, electrification readiness, solar PV, and related improvements in buildings to provide single family, multifamily, and commercial and institutional building owners with access to low-cost capital at the scale needed to pay for the building upgrades necessary for decarbonization.	
EEH	EEH-S07	Workforce	Enabling	Support workforce education, training, job placement and development that equip the state's current and future workforce to design, install, inspect, maintain and operate healthy, comfortable, low-carbon buildings while increasing clean energy job placement for DACs and advancing industry diversity.	
EEH	EEH-S08	Public Awareness and Consumer Education	Enabling	Support broad public awareness and consumer education, create strategic partnerships including with trusted community leaders, and scale-up targeted outreach and decision-making support to increase market demand and accelerate the transition to low-carbon, energy-efficient, all-electric buildings.	
EEH	EEH-S09	Innovation	Enabling	Support research and development (R&D), demonstration projects, and more companies and manufacturers operating in NYS to bring innovative solutions to the marketplace for: highly efficient, all-electric, and resilient buildings; grid-interactive buildings, with revenue opportunities; and reducing embodied carbon in buildings.	
EEH	EEH-S10	Embodied Carbon	Enabling	Establish procurement requirements and design specifications for State-funded projects and support education, building reuse, R&D, and in-state manufacturing of alternative products in order to lower the embodied carbon of products and materials used in the buildings sector and to create broad carbon literacy regarding the impact of materials, while increasing attention to carbon-sequestering products (e.g., cross-laminated timber, hempcrete).	

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EEH	EEH-S11	Federal Agenda	Cross-cutting panel recs	The Panel recommends the CAC advocate for Federal resources and policy support in the scoping plan. Climate change is a national and global problem. New York State is a leader but will need significant assistance and partnership from the Federal government to bring these recommendations to fruition.	
EEH	EEH-S12	Revenue Sources	Cross-cutting panel recs	The Panel recommends the CAC conduct an economy-wide analysis to identify resources and funding mechanisms to support the final scoping plan. While the Panel identified and recommended some potential funding/financing mechanisms, these do not address the full need outlined in the recommendations. Further analysis and expert/stakeholder input is needed to identify resources for this scale of transformation.	
EEH	EEH-S13	Energy Costs and Price Signals	Cross-cutting panel recs	The Panel recommends ongoing PSC attention to rate design and retail rate price signals for both electricity and gas, to ensure affordability as buildings electrify and to promote demand flexibility.	
EEH	EEH-S14	Adaptation and Resilience	Cross-cutting panel recs	Adaptation and Resilience recommendations are of material importance as buildings electrify heating systems, and as the frequency of extreme weather events increases the probability and scale of grid outages. At the building level, the Panel recommends several changes in the State codes that support more resilient buildings and efficient, flexible technologies that can enhance grid reliability and resilience, including high-performance walls/roofs/windows to improve passive survivability, solar PV along with energy storage readiness, grid-interactive appliances, and EV readiness to position for vehicle-to-grid/vehicle-to-building applications. The Panel also supports multiple specific recommendations advanced by the cross-panel Adaptation and Resilience group, notably: (i) to develop policies and programs to reduce human risks associated with new patterns of thermal extremes (e.g., community-based cooling and warming centers, weatherization from thermal extremes, cool roofs); (ii) to ensure the reliability, resilience and safety of a decarbonized energy system (e.g., modernize the energy system, energy efficiency upgrades and capital improvements to buildings to endure grid failures and to accept power when the system is re-energized); and (iii) to strengthen meaningful community engagement and public education and build adaptive capacity (e.g., train building operations staff in disaster preparedness, provide home and small business resilience audits/refinancing). The Panel underscores the need for additional research, analysis, and policy development on this critical topic.	
EEH	EEH-S15	Energy Efficiency Upgrades for Existing Homes	Cross-cutting panel recs	Although the Panel's recommendations do not include a regulatory requirement to perform energy efficiency upgrades to existing residential buildings, the Panel underscores the importance of insulation/weatherization and energy efficiency measures to make homes comfortable and to reduce emissions, heating costs, and seasonal demand peaks. Either regulations and/or substantial subsidies likely will be needed in the future to effectuate this at scale. Given market challenges and costs, the Panel recommends that the first step is to require energy benchmarking and disclosure as described in Mitigation Strategy #2, which can then inform future policy deliberations and programs to assist low-income New Yorkers. In the meantime, funding for LMI weatherization/energy efficiency efforts will need to be substantially increased.	

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LULG	LULG-S01	Land Use - Future Growth	Enabling	Guide future growth, redevelopment, and conservation at the regional scale through regional planning. Facilitate and support collaborative smart growth comprehensive planning at the county and regional scales to inform and guide land use decisions, including designation of priority development areas and priority conservation areas	
LULG	LULG-S02	Land Use - Empower Local Government to Achieve Smart Growth	Enabling	Empower Local Government to Achieve Smart Growth Planning and Development. Provide direct planning and zoning assistance to local communities. Promote municipal implementation of mitigation strategies through enhanced technical assistance, increased support for local adoption of zoning and land use regulation consistent with smart growth principles and local policies that support sustainable, equitable development and the accelerated expansion of local clean energy through a streamlined “Plan-to-Zone” initiative	
LULG	LULG-S03	Land Use - Enable Equitable Smart Growth Projects	Enabling	Enhance Resources to Enable Equitable Smart Growth Projects. Provide local government with the necessary tools and resources to guide, enable and inform the process of achieving equitable smart growth projects such as TOD, mixed-income/affordable housing, downtown, village and hamlet centers, and infill development.	
LULG	LULG-S04	Land Use - State Priorities	Enabling	Align State Funding Priorities. Prioritize smart growth, equity, and sustainability in all relevant state funding, including new infrastructure spending	
LULG	LULG-S05	Land Use - TOD	Enabling	Facilitate and Accelerate Equitable Transit Oriented Development (TOD). Accelerate mixed-use, mixed-income transit-oriented development around key transit hubs served by rail and bus.	
LULG	LULG-S06	Clean Energy - Community Dashboard	Enabling	Develop a statewide dashboard of community greenhouse gas emissions inventories to promote local climate action planning, monitor equity considerations, measure progress, and ensure data consistency at the county/municipality level.	
LULG	LULG-S07	Clean Energy - Local Policies	Enabling	Encourage local governments to demonstrate leadership in energy efficiency by developing model above-minimum energy conservation construction policies or adopting the NY Stretch Energy Code and promoting its adoption, enhanced code enforcement including streamlined permitting, third party inspections, and shared enforcement, and Property Assessed Clean Energy (PACE) financing.	
LULG	LULG-S08	Clean Energy - Statewide Policies	Enabling	Establish statewide policies that require consistent advancement on building decarbonization by adopting a highly efficient State Energy Code aligned with CLCPA goals as soon as possible, establishing energy benchmarking and performance standards for buildings, and creating innovative public benefit financing mechanisms.	
LULG	LULG-S09	Clean Energy - Planning Support	Enabling	Facilitate clean energy siting through planning support and the development and promotion of model local laws, streamlined permitting, and local development regulations that clearly identify appropriate as-of-right installation opportunities for different clean energy technology types, and clear requirements and reasonable processes for installations that are not as-of-right.	
LULG	LULG-S10	Clean Energy - Community Initiatives	Enabling	Connect homes, businesses, and community institutions with clean energy products, services, and job opportunities through Community Choice Aggregation programs, microgrids, district systems, workforce development initiatives, and community-scale campaigns to encourage adoption of new, innovative technologies to generate value and savings for consumers in an equitable manner.	

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LULG	LULG-S11	Clean Energy - Local Assets	Enabling	Continue and expand state program opportunities, incentives, technical assistance, and centralized procurement services to motivate local governments and related public entities to improve assets they control with high-impact actions such as LED lighting, energy efficiency upgrades, heat pump projects, methane recovery for energy production from wastewater treatment and landfills, solar on municipal premises, and municipal and school district fleet electrification.	
LULG	LULG-S12	Carbon Sequestration - Freshwater Wetlands	Mitigation	Maintain and enhance the carbon sequestration potential of freshwater, non-tidal wetlands in New York State through protection, restoration, and monitoring.	Low (2030) - Low (2050)
LULG	LULG-S13	Carbon Sequestration - Blue Carbon	Mitigation	Maintain and enhance the carbon sequestration potential of “blue carbon” in New York State, including coastal and estuarine tidal wetlands, submerged aquatic vegetation, and other coastal habitats, through protection, restoration, and monitoring.	Low (2030) - Low (2050)
LULG	LULG-S14	Carbon Sequestration - Mapping, Research, Planning, and Assistance	Enabling	Maintain and enhance the carbon sequestration potential of natural areas in New York State, including wetlands, coastal habitats, forests, and grasslands through improved mapping (both regulatory and non-regulatory), research, conservation planning guidance, stewardship, and assistance for local governments and landowners.	
Power Gen	PWR-S01	Growth of Large-Scale Renewable Energy Generation	Enabling	Accelerate deployment of renewable energy systems including solar, land-based wind, and offshore wind in alignment with the Clean Energy Standard.	
Power Gen	PWR-S02	Clean Energy Siting & Community Acceptance	Enabling	Support the development and use of information and resources for local communities to make beneficial decisions about renewable energy projects in their community.	
Power Gen	PWR-S03	Distributed Generation / Distributed Energy Resources	Enabling	By generating smaller amounts of clean electricity closer to end-users, we can increase energy efficiency, reduce carbon pollution, improve grid resiliency, and potentially curtail the need for costly transmission investments.	
Power Gen	PWR-S04	Existing Storage Technology	Enabling	The State developed a 3GW goal for energy storage in the 2018 energy storage roadmap based on a 50% renewable target for 2030. 70% renewables and the transition to a carbon-free grid requires higher levels of energy storage as exemplified in the recent Power Grid Study identifying a need for >15GW.	
Power Gen	PWR-S05	Demand Side	Enabling	Analyze and appropriately model responsive demand as part of future generation and energy supply. Consider those modeled impacts on costs and timelines of power generation by decade and incorporate into system planning. It is imperative that flexible, responsive loads are analyzed and modeled appropriately to optimize for the lowest system cost and the most expeditious deployment of both clean supply and demand solutions.	
Power Gen	PWR-S06	Reliability for the future grid	Enabling	Generation resources combined with the transmission and distribution systems, control centers, and wholesale markets provide a continuously operating, reliable system to service New York’s electric needs. All of these elements will need to transition and come together effectively to manage the transitioning grid to provide continuity of a reliable power system, while implementing the CLCPA. The recommendations to implement and achieve the CLCPA must support the high reliability standards in place in NY by implementing improvements and enhancements where needed and sustaining the practices that provide high quality electric service. If properly integrated the additional clean distributed generation, storage and large-scale renewables which the CLCPA will provide will help to build a more flexible and resilient grid to address and mitigate the impacts of climate change.	

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Power Gen	PWR-S07	Access and Affordability for All	Enabling	Prioritize helping low-income utility customers and disadvantaged communities, while also assuring that these communities will be able to afford and fully benefit from the State's transition to electrification	
Power Gen	PWR-S08	Workforce Development	Enabling	Make it a priority to provide education and career opportunities for individuals with a focus on disadvantaged communities to enter the clean energy industry. Ensure a just transition for people currently employed in fossil industries so their needs are met.	
Power Gen	PWR-S09	Market Solutions	Enabling	Markets that incentivize resources with the desired attributes, provide optimal reliable grid management, and are sufficiently flexible to allow for technology innovation will help achieve the CLCPA objectives, while ensuring benefits for, and reducing impacts on, disadvantaged communities.	
Power Gen	PWR-S10	Technology Solutions	Enabling	Increase research, development, and appropriately-scaled demonstration and deployment of emissions-free technology needed to reach our goals.	
Power Gen	PWR-S11	Long Duration Storage Technology	Enabling	Achieving the CLCPA's high renewable energy, zero emission electricity system will require substantial amount of energy storage operating over various timescales—spanning from minutes to hours, days, weeks and even longer—to maintain grid flexibility, reliability, and resiliency.	
Power Gen	PWR-S12	Energy Delivery & Hosting Capacity	Enabling	Pursue planning and implementation processes to facilitate necessary energy delivery options for the renewable energy buildout.	
Power Gen	PWR-S13	Gas Infrastructure, Transmission & Methane Leakage	Mitigation	This recommendation intends to address methane leakage and the infrastructure related to fossil natural gas, though it also applies to any potential future gas technologies. This recommendation aligns with what was proposed by the Energy Efficiency & Housing Panel, but includes a broader scope beyond that of the end-use gas distribution sector. Transition away from gas with a managed, phased, and just transition from natural gas and decommission natural gas infrastructure to the maximum extent possible and as quickly as possible.	Medium (2030) - High (2050)
Power Gen	PWR-S14	Retirement of Fossil Fuel-Fired Facilities	Enabling	Develop a plan and implement regulations to phase out fossil fuel-fired baseload and peaking generation resources as quickly as practicable while retaining system reliability by prioritizing efforts to lower emissions of co-pollutants in disadvantaged and environmental justice communities. Leverage existing technology, innovative zero-emissions technology where feasible, transmission and distribution investment, targeted energy efficiency and demand response, market design, and policy or regulatory mechanisms.	
Transportation	TRNS-S01	Electrification - 100% Zero Emission Passenger Vehicles	Mitigation	Transition to 100% zero-emission light duty vehicle sales	High
Transportation	TRNS-S02	Electrification - Zero emission trucks, buses and heavy equipment	Mitigation	Transition to zero emission Medium/Heavy Duty Vehicles & Non-Road Vehicles	High
Transportation	TRNS-S03	Public Transportation - Enhanced Public Transportation / Mobility	Mitigation	Identify implementable strategies to significantly enhance the availability; accessibility; reliability; and affordability of public transportation services with an emphasis on unserved/underserved communities. This includes: -Doubling the service availability/accessibility of municipally sponsored upstate and downstate suburban public transportation services statewide; and -Implementing policies and programs that support system reliability/network expansion projects identified by the Metropolitan Transportation Authority (MTA) in their current five-year capital pan/twenty-year needs study.	Low/Medium
Transportation	TRNS-S04	Public Transportation - TOD	Mitigation	Transit Oriented Development	Low/Medium (2030) - Medium (2050)

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Transportation	TRNS-S05	Public Transportation - Convenience / Connectivity	Mitigation	Convenience / Connectivity	Low/Medium (2030) - Medium (2050)
Transportation	TRNS-S06	Public Transportation - Fleet Modernization	Mitigation	Fleet Modernization	Medium (2030) - Medium (2050)
Transportation	TRNS-S07	Smart Growth - TOD	Mitigation	Support Transportation-Oriented Development (TOD) that enables greater use of public transportation and other low-carbon modes	Low (2030) - Medium (2050)
Transportation	TRNS-S08	Smart Growth - Low-Carbon Modes	Mitigation	Expand the availability of low carbon transportation modes (biking, walking, carpooling, ride-sharing, micro-transit) statewide	Low (2030) - Medium (2050)
Transportation	TRNS-S09	Smart Growth - Smart Mobility & Connected / Automated Vehicles	Mitigation	Improve transportation system efficiency through policies, technologies, and investments that reduce congestion and increase safety using connectivity, automation, and other innovative approaches	Low (2030) - Medium (2050)
Transportation	TRNS-S10	Smart Growth - Planning and Collaboration	Enabling	Encourage the business and economic development community to work more closely with local planners, public transportation officials, and other transportation providers in business location and expansion projects. Launch an Expansive, Multi-Dimensional, Grass-Roots Public Education Campaign on the Links Among Land Use (Smart Growth), Public Transportation and Housing and their roles in reversing climate change.	
Transportation	TRNS-S11	Market-Based Policies and Financing - Clean Fuel Standard	Mitigation	Implement a Clean Fuel Standard to support electrification of transportation, achieve near-term emission reductions while the transition to electrification is underway and provide cleaner fuels for hard-to-electrify subsectors such as aviation; freight and passenger rail; and long-haul trucking. A clean fuel standard generally considers total fuel cycle emissions.	Medium (and enables electrification) (2030) - Low (enabling for electrification) (2050)
Transportation	TRNS-S12	Market-Based Policies and Financing - Electrification Financing	Enabling	Public & private approaches to electrification financing	
Transportation	TRNS-S13	Market-Based Policies and Financing - Cap & Invest / Carbon Pricing	Mitigation	Policies reduce emissions directly and support further emission reductions and the transition to a cleaner, more efficient transportation system. Transportation Panel recommends potential participation in the Transportation and Climate Initiative program (TCI-P) unless the Climate Action Council opts for a multi-sector carbon pricing approach that provides at least the same level of support for reducing transportation sector emissions.	Medium (and enables other strategies)
Transportation	TRNS-S14	Market-Based Policies and Financing - Various market-based/financing policies	Mitigation	Various market-based policies will support electrification, public transportation, smart growth and other transportation goals. These policies complement the other more specified strategies, including recommendations for TCI-P participation, clean fuel standard, private financing strategies and feebates	Low (2030) - Low (2050)