

New York State Climate Action Council

November 24, 2020
Meeting 5



**Climate Action
Council**

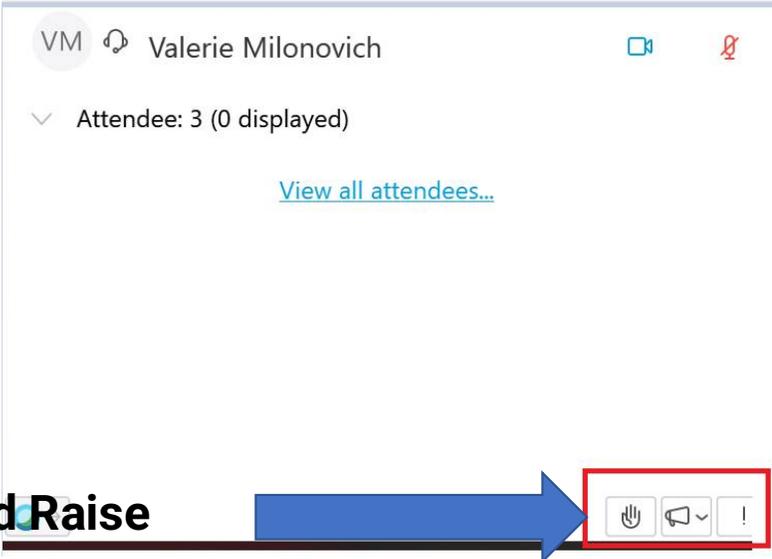
Meeting Procedures

Before beginning, a few reminders to ensure a smooth discussion:

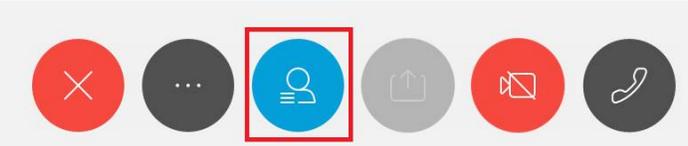
- > CAC Members should be on mute if not speaking.
 - > If using phone for audio, please tap the phone mute button.
 - > If using computer for audio, please click the mute button on the computer screen (1st visual).
- > Video is encouraged for CAC members, in particular when speaking.
- > In the event of a question or comment, please use the hand raise function (2nd visual). You can get to the hand raise button by clicking the participant panel button (3rd visual). The co-chairs will call on members individually, at which time please unmute.
- > If technical problems arise, please contact Karen Fusco at karen.fusco@nyserda.ny.gov



You'll see  when your microphone is muted



Hand Raise



Agenda

- > Welcome
- > Consideration of October 8, 2020 Minutes
- > Co-Chair Remarks and Reflections
- > Advisory Panel and Working Group Chairs Progress Reports
- > Discussion: Waste Advisory Panel
- > Discussion: Bioenergy
- > Agency Updates
- > Next Steps

Consideration of October 8, 2020 Minutes

Co-Chair Remarks and Reflections

Remembering Cecil Corbin-Mark



Election 2020: What a Biden-Harris administration will mean for climate

Opportunity for reclaimed international leadership

- > Rejoining the Paris Agreement, fresh on the heels of mounting ambition from China, Japan, U.K., other nations

\$2T in climate spending over four years

- > Despite congressional uncertainty, climate platform includes major focus on spending for infrastructure, auto industry, transit, power, buildings, housing, innovation, agriculture, conservation, and environmental justice

Platform targets 100% clean electricity by 2035, net zero by 2050

- > Decarbonizing electricity in 15 years would accelerate even the most ambitious state plans to transform our grid

Regulatory rollback reversal

- > Swift measures expected to undo Trump-era environmental Executive Orders and other actions (e.g., weakened auto fuel efficiency standards)

Greater state-federal collaboration and partnership

- > What opportunities will a more active/aligned DOE, ARPA-E (and new ARPA-C), DOI/BOEM, FERC, EPA, DOT, HUD bring?



Building Resiliency – Sandy Anniversary

Highlights of recent resiliency efforts

- **Gov. Cuomo Announces Construction Start for Rockaways - Atlantic Shorefront Resiliency Project**
\$336M Coastal Resiliency Project from Far Rockaway to Neponsit; Army Corps-Led Effort to Reduce Coastal Flood Risk on Atlantic Coast and along Jamaica Bay
- **Gov. Announces Selection of Design-Build Contractor to Expedite Bay Park Conveyance Project**
State-Nassau County Partnership in \$439M Project to Improve Water Quality and Storm Resiliency in L.I.'s Western Bays
- **Agencies Announce Completed REDI Projects**
Infrastructure improvements in Lake Ontario coastline communities to mitigate impacts of future flooding in Town of Greece, Port of Oswego, Town of Irondequoit, more
- **DEC Awards \$1.4M Grants to Protect Mohawk and Hudson River Basins**
Grants to improve water quality, increase flood resiliency, and conserve natural resources
- **DEC Releases CRRA Flood-Risk Management Guidance and DOS Model Local Laws**
Supports New York's Nation-Leading Efforts to Bolster Community and Infrastructure Resilience through incorporating Smart Growth and Natural Features in Project Designs to Reduce Risk of Flooding and Erosion

PSC Expansion of the Clean Energy Standard (CES)

NYS Public Service Commission approved expanded CES to facilitate State decarbonization

- Implements key CLCPA provisions toward reaching 70 percent renewable energy by 2030
- Establishes annual large-scale procurement targets
- Sets offshore wind targets to meet 2035 goal
- Establishes new methodology for extending Tier 1 eligibility
- Creates competitive five-year Tier 2 program
- Establishes new Tier 4 program
- Articulates approaches ensuring benefits for the State's disadvantaged communities

NYPA and PEAK Coalition Agreement

Agreement to explore options for transitioning NYPA's natural gas 'peaker' plants to clean energy technologies

- NYPA and PEAK to jointly study the replacement of six natural gas 'peaker' plants with battery storage and other innovative and renewable technology solutions
- NYPA to conduct independent analysis with contractor and consultant
- Four- or eight-hour battery technologies under consideration
- MOU signed by both parties

PEAK Coalition Members:

New York City Environmental Justice Alliance

Clean Energy Group

New York Lawyers for the Public Interest

The Point CDC

UPROSE

Other Recent Announcements

\$11 million in Volkswagen Settlement funds to expand EV charging

- Builds upon Governor Cuomo's landmark "Make Ready" announcement in July
- Direct Current Fast Charger program will provide up to 80% of the cost to build publicly available charging stations for electric vehicles
- Program requires that at least 25% of the stations be located within half a mile of a disadvantaged community

\$2.5 million to winners of 76West Clean Energy Business Competition

- Four winners to advance innovation to lower carbon emissions and spur economic growth; top \$1 million prize to ThermoAI
- Winners paired with companies in region for mentorship
- Complement to ESD's Southern Tier Soaring Initiative

\$10 million New York Climate Process Program to support startups in climate technology

- Open to early-stage startup firms focusing on climate technology
- Up to \$500,000 in funding available per project
- Funding will stimulate local economies, create jobs and advance clean energy products and climate technologies as part of New York's growing green economy

Advisory Panel Chairs Progress Report

- Land Use and Local Government
- Energy Efficiency and Housing
- Agriculture and Forestry

Land Use and Local Government

Land Use Strategy 1 of 5

Subgroup: Land Use

Strategy under consideration

Promote and facilitate county and inter-municipal smart growth planning efforts, including focusing development in priority growth centers

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| Rationale | Supporting the development of priority growth center plans and open space conservation areas is the first step toward communicating and implementing smart growth at the local level. |
| Equity considerations | Ensure that disadvantaged communities are the priority for future growth and investment, including brownfield areas, and ensure that policies do not lead to displacement. |
| Potential implementation challenges | If planning is conducted on the county level, municipalities would need to buy-in and cater their zoning and other policies to comport with the growth areas. Aligning State/local policies and incentives to achieved desired outcomes. Stable and reliable funding sources for local and regional planning. |
| Issues to explore | Feasibility and/or capacity to develop priority growth plans on the local and county levels, particularly in rural areas; determining the appropriate entity to conduct the analyses. |
| Additional thoughts | Some have suggested that this type of analysis can/should be conducted statewide and incorporated into municipal comp plans. |

Land Use Strategy 2 of 5

| Subgroup: Land Use | |
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| Strategy under consideration | Build capacity at the regional level and provide support to municipalities to promote smart growth, facilitate clean energy siting, and reduce VMT |
| Rationale | Several counties and regions are providing this technical assistance in different ways with measurable results. |
| Equity considerations | Countywide/regional approach can strategically target EJ/distressed communities with less land use staff and capacity. |
| Potential implementation challenges | Home Rule; adequate funding to expand such support to an adequate level; long-term nature of changing land use patterns. |
| Issues to explore | Counties/entities/programs that are willing and able to play this broader role; municipalities willing to work with counties/regional entities; regional differences. |
| Additional thoughts | Existing regional entities/plans—e.g., REDC and Regional Sustainability Consortiums. |

Land Use Strategy 3 of 5

Subgroup: Land Use

Strategy under consideration

Promote coordinated regional approaches to meet climate goals while integrating transportation, housing, and land conservation needs

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| Rationale | Current planning approaches and land use policies are unlikely to result in development patterns that reduce VMT, ensure equitable housing, and conserve natural and working lands to the extent needed to meet our ambitious climate targets. A new approach is needed for promoting compact, mixed use development, while conserving open space and investing in disadvantaged communities. |
| Equity considerations | Approach must ensure equitable access to affordable housing, mass transit and economic opportunities. Planning support for low-capacity communities necessary. |
| Potential implementation challenges | Potential limitations may be related to home rule and local government capacity. Incentive programs may be insufficient to drive necessary change; could require mandates and the development or enhancement of a regional support structure. |
| Issues to explore | Explore and analyze State level actions to support acceleration of land use impacts that would assist with meeting climate targets. |
| Additional thoughts | Increase coordination on this topic with Transportation, Energy Efficiency and Housing, and Agriculture and Forestry advisory panels, and Climate Justice Working Group. |

Land Use Strategy 4 of 5

Subgroup: Land Use

Strategy under consideration

Streamline and incentivize Smart Growth project review

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| Rationale | Smart Growth projects are often subject to expensive and lengthy review, even when affordable housing is included. |
| Equity considerations | Streamlining should not quell opportunities for community input and engagement, especially in EJ/distressed communities whose voices have been quelled or ignored on land use issues in the past. |
| Potential implementation challenges | Ensuring that streamlining does not negatively impact community input or soften environmental/social protections. |
| Issues to explore | Community input and participation; incentives as an alternative to streamlining; methods to streamline development that exceeds standards or goals. |
| Additional thoughts | Expertise of LULG Panel and overall Climate Action Council members may serve to assist with finding a solution that streamlines appropriate projects in appropriate locations while not limiting community input. |

Land Use Strategy 5 of 5

Subgroup: Land Use

Strategy under consideration

Coordinate State planning funds/activities/entities to ensure that transportation, housing, and conservation actions are not in conflict and achieve VMT, clean energy, and equity goals

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| Rationale | Several agencies support planning and zoning related to smart growth, clean energy, housing, and transportation. Collective and coordinated action at the State level can maximize impact, avoid duplication of services, and help localities, developers and CBOs more effectively access and navigate state programs and assistance. |
| Equity considerations | Coordination can help implement a uniform and consistent approach to supporting/funding projects and planning in EJ/distressed communities. |
| Potential implementation challenges | Aligning resources with different primary missions and stakeholders. |
| Issues to explore | Analyze and discuss the different funding and eligibility requirements across planning programs/activities/entities to identify points of conflict and repetition. Improving communication and assistance tools for communities on appropriate funding streams. |
| Additional thoughts | |

Clean Energy Strategy 1 of 3

Subgroup: Clean Energy

Strategy under consideration

Establish statewide higher energy codes, benchmarking, building performance mandates, and PACE Financing to avoid a patchwork of policies.

Rationale

Local governments are generally leery of taking on initiatives that may place them at what they perceive to be a competitive disadvantage to other communities in their region. Rather than a patchwork of different rules and opportunities in different communities, consider statewide approaches.

Equity considerations

Uniform and consistent policies across communities can ensure that all New Yorkers have access to the benefits of clean energy policies. Avoid placing costs and administrative burden on resource-constrained municipalities.

Potential implementation challenges

Likely to require state legislation.

Issues to explore

Different funding and eligibility requirements across programs to find possible points of conflict and repetition.

Additional thoughts

Clean Energy Strategy 2 of 3

Subgroup: Clean Energy

Strategy under consideration

Encourage local governments to initiate CCA programs and community campaigns to increase local access to clean energy products and services.

Rationale

Local initiatives like CCA and community campaigns can make significant contributions to CLCPA goals and help spur the widespread deployment of Distributed Energy Resources. Local governments need a clear path forward to implement actions that have the greatest potential for impact. Increased access can be achieved with state programs that provide grants, free technical assistance, and recognition for local leadership.

Equity considerations

Local policies can be tailored to maximize benefits to disadvantaged communities.

Potential implementation challenges

Likely to require funding for state program to support local government climate action.

Issues to explore

Different funding and eligibility requirements across programs; need to find possible points of conflict and repetition and opportunities for alignment.

Additional thoughts

Clean Energy Strategy 3 of 3

Subgroup: Clean Energy

Strategy under consideration

Overcome legal, financial, regulatory, and technical barriers to greening municipal building, facilities, and fleets

Rationale

Local governments control significant energy consuming assets like street-light systems, wastewater treatment plants, landfills, and public transit systems and are well positioned to advance district systems and microgrids. Strategies can help lower operating costs and generate financial benefits over time.

Equity considerations

Investments in local infrastructure can be targeted to maximize benefits to disadvantaged communities.

Potential implementation challenges

Resources and staff capacity at the local level is limited. Likely to require funding and alignment for state program to support local government climate action.

Issues to explore

Leadership by example is important, but we must implement better strategies that affect energy use for the community as a whole, like walkable communities, above-minimum energy codes, community clean energy campaigns, and Community Choice Aggregation.

Additional thoughts

Adaptation and Resilience Strategy 1 of 2

Scope topic/Subgroup: Adaptation and Resilience

| Strategy under consideration | Develop policies, programs and resources to reduce risks associated with acute climate hazards |
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| Rationale | NYS can take numerous steps in the near term to support regional and local adaptation, and reduce risks associated with sea-level rise, flooding, extreme weather, thermal extremes, drought and ecosystem disruption. |
| Equity considerations | Program development must identify and prioritize support for most vulnerable communities. |
| Potential implementation challenges | Regions and municipalities lack the technical, staff and financial resources necessary to implement effective Adaptation/Resilience (A/R) programs and projects. Local governments needed stronger state support. |
| Issues to explore | Greater use of implementation contractors to assist with RFP development and contract management. |
| Additional thoughts | Failure to invest in A/R will result in fewer resources to support mitigation. Panel members pointed to the valuable role of climate coordinators and planners provided by State programs. |

Adaptation and Resilience Strategy 2 of 2

Scope topic/Subgroup: Adaptation and Resilience

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| Strategy under consideration | Seek to ensure State and local investments assess climate change and resiliency impacts of projects |
| Rationale | Effective stewardship of public funds and resources requires consideration of climate change in decisions regarding public investments and environmental reviews. |
| Equity considerations | Must ensure EJ/distressed communities benefit from protections and strategies of neighboring communities do not increase their risk. |
| Potential implementation challenges | Increased costs for development or implementation, increased timeframes to explore new, more resilient methods over traditional implementation, perceived conflict between development and near-term economic benefits over long-term sustainability practices. Expertise to assess project proposals and alternatives that will meet the same goals of the project. |
| Issues to explore | Some action may require additional authority under SEQRA; development of review guidance, decision-support tools, public investment guidelines, etc. |
| Additional thoughts | |

Energy Efficiency and Housing

Mitigation strategies, slide 1 of 5

SCOPE 1: MANDATES THAT REQUIRE ENERGY EFFICIENCY IMPROVEMENTS & ON-SITE EMISSIONS REDUCTIONS IN BUILDINGS & APPLIANCES W/ DATES AS MARKET SIGNAL

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| Strategies under consideration | <ul style="list-style-type: none"> Expand State energy & building codes (w/date signals) -> transition to electrification & building efficiency; Modify State Appliance Standards (e.g. ban fossil fuel appliances sale/install.). Consider building performance standards for large buildings to meet 2050 & interim targets – focus on onsite emissions. |
| Rationale | <ul style="list-style-type: none"> Stock is old. Sector can change practices at scale w/ statutory & regulatory deadlines (using “date” signals to induce behavioral change). Proceeding at scale w/ certainty is potential path to cost reduction. |
| Equity considerations | <ul style="list-style-type: none"> Availability of appropriate resources for disadvantaged communities to implement recommendations, including for EJ communities and LMI housing (investment scale large – needs to be estimated ASAP); Analyze impacts on disadvantaged communities/neighborhoods in transition & structure policy to mitigate negative impacts (e.g., disinvestment in older buildings; displacement in gentrifying areas). |
| Potential Implementation Challenges | <ul style="list-style-type: none"> Legal: possible federal preemption/supremacy issues; Technical & commercial feasibility (for some buildings): demand and production; workforce constraints; Political: implementation and execution. |
| Issues to explore | <ul style="list-style-type: none"> Mandate date requirement by major building typology; typologies that merit alternate compliance paths/exemptions, estimated cost, public investment & GHG impact (esp. disadvantaged communities); Role of information type mandates (e.g., Benchmarking Requirements, Disclosure at P.o.S. (see Scope #3). |
| Additional thoughts | <ul style="list-style-type: none"> Coordination between State and local governments needs to occur (e.g. NYC local laws); Cross-sectoral collaboration (power gen./land use & local government/JTWG/CJWG etc). |

Mitigation strategies, slide 2 of 5

SCOPE 2: FINANCING AND INCENTIVES FOR BUILDING EFFICIENCY AND ELECTRIFICATION AT SCALE

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| Strategies under consideration | <ul style="list-style-type: none"> • Inducing market/behavioral change (e.g. taxes, registration fees, carbon levies) that incentivize market providers (owners, developers, lenders etc.) & residents to reduce emissions & transition to electrification; • Shift lenders to quantify energy efficiency in single/multifamily/commercial (e.g. underwriting to savings); • Financial incentives for owners, developers and residents (e.g. cash incentives, pay as you save, low-interest financing, more agile of existing programs to get to 2050 and interim targets, etc), with emphasis on LMI. |
| Rationale | <ul style="list-style-type: none"> • Decarbonizing single, multifamily & commercial/institutional buildings requires large-scale behavioral changes and capital investments using financing/incentives/innovative programs within CLCPA timeframe. |
| Equity considerations | <ul style="list-style-type: none"> • Direct public resources with goal that disadvantaged communities receive \geq 40% of benefits, per CLCPA; • Carbon & other fees/revenues mitigating LMI community/individual costs; identify other potential “losers”; • Balance use of LMI portfolios as pilots vs. ensuring LMI communities have access to tools to decarbonize. |
| Potential Implementation Challenges | <ul style="list-style-type: none"> • Identification of behavior change-inducing funding sources complex; difficulties with layering on with existing sources of funding. Creation of carbon levies & other fees also politically complex; • Scale may require federal assistance. |
| Issues to explore | <ul style="list-style-type: none"> • Incentives producing greatest impact (incentives, direct cash models etc.); most impacted stakeholders. |
| Additional thoughts | <ul style="list-style-type: none"> • These strategies have the most stakeholder appeal, but is potentially the most politically fraught; • Need to resolve who pays for these incentives/programs; • Cross-sectoral collaboration (power gen./land use & local government/JTWG/CJWG etc). |

Mitigation strategies, slide 3 of 5

SCOPE 3: TRAINING & EDUCATION OF BUILDING DECARBONIZATION TO IMPROVE BEHAVIOR & OPERATIONS FOR HEALTH & COMFORT & BUILD WORKFORCE (ENABLING STRATEGY)

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| Strategies under consideration | <ul style="list-style-type: none"> • Workforce develop. to provide skilled pros to design, build, operate, & enforce decarbonized building stock; • Education - owners, developers, design professionals and other stakeholders: resources on capital planning, all-electric buildings, electrification-ready, etc. Mandatory energy performance disclosures & building consumption data (public facing); certified product declarations for materials/equipment; etc. • Education - residents/businesses: performance, econ., environmental quality, O&M for low-carbon tech. |
| Rationale | <ul style="list-style-type: none"> • Inducing upstream and downstream behavioral change and increased awareness & education will support growing acceptance of changes & will support the State's growing need for a skilled workforce. • Supports cost reduction by lowering customer acquisition costs & improving installation quality/perform. |
| Equity considerations | <ul style="list-style-type: none"> • Direct public resources with goal that disadvantaged communities receive $\geq 40\%$ of benefits, per CLCPA; • Prioritize disadvantaged individuals/communities, MWBE contractors, & veterans for direct investments; • In residential sector, upfront energy cost disclosure can prevent energy insecurity for LMI households. |
| Potential Implementation Challenges | <ul style="list-style-type: none"> • Cost and funding sources • Aligning/scaling the workforce training with job opportunities |
| Issues to explore | <ul style="list-style-type: none"> • Funding for education/training & re-training; Strategies priority populations & consumers at decision point. |
| Additional thoughts | <ul style="list-style-type: none"> • Varies from wide-spread public opinion to more nuanced trade-based training. • Cross-sectoral collaboration (power gen./land use & local government/JTWG/CJWG etc). |

Mitigation strategies, slide 4 of 5

SCOPE 4: TECHNOLOGY INNOVATION AND DEMONSTRATION TO DRIVE BETTER PERFORMANCE, REDUCE COSTS, AND INCREASE CUSTOMER CONFIDENCE

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| Strategies under consideration | <ul style="list-style-type: none"> • R&D to improve cost/performance of solutions for all-electric buildings (e.g., cold climate heat pumps, geothermal, etc.) • R&D & demon. for hard-to-electrify buildings (e.g., on district steam, steam-heated, hydronic distribution) & advance scalable solutions & potential cost reductions (e.g., community geothermal, industrialized fabric/modular, virtual tools); • De-risking demos to help critical customer groups who make lack access to resources/info (e.g., coops/condos); • Approaches to reducing embodied carbon (e.g. new tech to reduce GHG emissions from materials/construction/transp.) |
| Rationale | <ul style="list-style-type: none"> • Technological advances needed for cost effective solutions for some building types; • End-user will need information/data to make informed decisions. |
| Equity considerations | <ul style="list-style-type: none"> • Direct public resources with goal that disadvantaged communities receive >= 40% of benefits, per CLCPA; • Cost reduction will be critical for LMI consumers. |
| Potential Implementation Challenges | <ul style="list-style-type: none"> • Cost/source of funding; may require public investment beyond NYS • Public-private partnerships will be needed to be effective. |
| Issues to explore | <ul style="list-style-type: none"> • Training to operate/maintain any new tech (workforce education); Cost compression; • Effective strategies to advance building-grid interactivity (e.g., communication protocols, rate design). |
| Additional thoughts | <ul style="list-style-type: none"> • Case studies on how to be electrification ready (e.g. sufficient electric service); • Cross-sectoral collaboration (power gen./land use & local government/JTWG/CJWG etc); • Technology innovations should be at the individual building level, neighborhood level, wider load level. |

Mitigation strategies, slide 5 of 5

| SCOPE 5: RESILIENCE AND CLIMATE ADAPTATION STRATEGIES FOR ALL-ELECTRIC BUILDINGS, HAZARD MITIGATION PLANNING, & BUILDING RETROFITS | |
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| Strategies under consideration | <ul style="list-style-type: none"> • Supporting/coordinating improved resiliency solutions for all-electric building & resilient spaces for vulnerable pops.; • Grid and transmission resilience and independence; • Electrification paired with supplemental heating sources; • Improving building stock to withstand the impacts of climate change. |
| Rationale | <ul style="list-style-type: none"> • While working to reduce GHG emissions, NY should also adapt to the intensifying impacts of climate change (and vice versa). Resilient & reliable energy sources & distribution methods to buildings is essential during extreme temperature peaks/lowes and extreme weather events. |
| Equity considerations | <ul style="list-style-type: none"> • Direct public resources with goal that disadvantaged communities receive $\geq 40\%$ of benefits, per CLCPA; • Owners may not support debt for mitigation improvements (renters may carry passed-on burden); • Affordability of higher insurance costs, understanding costs of temporary shelter and emergency repairs; • Over-leveraged owners may not afford to resettle after a buyout & renters may be displaced; • DAC local govts: potential tax revenue losses (e.g. buyouts); disaster recovery w/o additional govt relief. |
| Potential Implementation Challenges | <ul style="list-style-type: none"> • Identifying funding to support resiliency measures; • Coordinating levels of govt & funding sources; balancing recovery needs w/longer-term resiliency & decarbonization strategies. |
| Issues to explore | <ul style="list-style-type: none"> • Emergency power generation in times of distress. |
| Additional thoughts | <ul style="list-style-type: none"> • Coordination needed with existing recovery and resiliency efforts (e.g. FEMA/HUD, NYS GOSR); • Cross-sector collaboration (power gen./land use & local government/JTWG/CJWG etc). |

Agriculture and Forestry

Subgroups and Strategies

Livestock/Dairy Management

- > Alternative Manure Management
- > Precision Feed Management

Soil Health and Nutrient Management

- > Nutrient (Fertilizer) Management
- > Soil Carbon Sequestration

Agroforestry

- > Silvopasture, Alley Cropping, and Riparian Forest Buffers

Land Conversions

- > Agricultural Protection and Access
- > No Net Loss of Forestland

Forestry:

- > Urban Forestry
- > Statewide Afforestation/Reforestation Efforts
- > Improved Forest Management
- > Increase Manufacture and Use of Harvested Wood Products

Bioeconomy

- > Support opportunities to substitute fossil fuels

Mitigation strategies, slide 1 of 12

Scope topic/Subgroup: Livestock/Dairy Management – Manure Management

| Strategy under consideration | Alternative Manure Management |
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| Rationale | Reduce methane emissions by implementing cover and flare systems, anaerobic digesters and other systems that abate, collect, capture and combust methane from manure storages. |
| Equity considerations | Increasing planning, technical services and financial assistance improves access to programs and effective practices for all farmers. These systems can improve community relations by reducing odors from the storage, and increase resilience to extreme precipitation events preventing water quality concerns by reducing the risk of overtopping. |
| Potential Implementation challenges | Upfront cost to farmers. Milk pricing and other economic impacts can affect a farm’s ability to participate in cost-share programs. Further technical assistance and engineering required for retrofitting current storages and planning new projects. Soil and Water Conservation District (SWCD), private planner, and private engineering capacity must be addressed to increase number of systems being implemented. |
| Issues to explore | Increasing funding for methane reduction through the State’s Climate Resilient Farming Program. Using a stepwise approach to implementation that focuses on projects that are ready for implementation while engaging in research on innovative approaches to manure management and supporting implementation of emerging technologies (such as dewatering manure) in the long term. |
| Additional thoughts | Develop a “Carbon” Farm Plan template through the state’s Agricultural Environmental Management (AEM) Program. Explore innovative financing and private sector funding mechanisms for these projects. Work with other panels to determine if policies will be developed that create a market for manure based methane for fossil fuel displacement (heat, electricity, transport fuel). Explore developing and implementing regular, periodic surveys to benchmark and gauge management trends over time. |

Mitigation strategies, slide 2 of 13

Scope topic/Subgroup: Livestock/Dairy Management – Enteric Fermentation

| Strategy under consideration | Precision Feed Management |
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| Rationale | Reduce methane emissions by increasing precision feed management (PFM) planning and implementation, conducting/reviewing research on novel approaches (e.g. feed additives), advancing information, training, outreach and technical assistance to livestock producers at various scales. |
| Equity considerations | Increasing planning and technical services improves access to programs and effective practices for all farmers. Small farms may need additional support with strategies tailored to their operations. Improvements in food production capacity, resiliency and diversity have a positive effect on communities. |
| Potential Implementation challenges | Expanding/advancing precision feed management has upfront costs to farmers. The practice demands sustained implementation for continued benefit. CH ₄ -reducing feed additives require more applied research to gauge efficacy, and some may require FDA review/approval. Advanced digital tools may be hard to access without rural broadband capacity. |
| Issues to explore | PFM has largely been driven by Cornell University research/extension and market forces (feed is largest input cost to dairies) and will likely continue as such. Seek opportunities for incentives to farms with long records of PFM adoption as well as farms in early adoption stages. |
| Additional thoughts | Develop a “Carbon” Farm Plan template through AEM. Continue to implement PFM through private sector, extension and water quality programming. National Milk, DFA, etc. have goals for dairy farms to be net zero by 2050 regardless of state initiatives. The state should coordinate and track progress toward this goal by developing planning, implementation, and evaluation methodology. Explore developing and implementing regular, periodic surveys to benchmark and gauge management trends over time. |

Mitigation strategies, slide 3 of 12

Scope topic/Subgroup: Nutrient Management to reduce nitrous oxide emissions

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| Strategy under consideration | Nitrogen Fertilizer Management |
| Rationale | Reduce N ₂ O emissions through continued and expanded nutrient management planning and implementation. |
| Equity considerations | Increasing planning and technical services improves access to programs and effective practices for all farmers. Improvements in food production capacity, resiliency and diversity have a positive effect on communities. |
| Potential Implementation challenges | This is an active area of applied, on-farm research, which continues to advance nutrient management guidelines and tools for use by planners, the fertilizer industry, and farmers. It hinges on applied research, training, industry technical assistance, management effort, and technology. The practice demands sustained implementation for continued benefit. |
| Issues to explore | Crop insurance to cover risk of innovating or insurance discounts with verified N reduction practices. Explore the feasibility of establishing N efficiency crop contest to promote further adoption of N efficiency practices while maintaining/increasing crop yields. Expand this strategy to include GHG mitigation from advancements in manure application management. Ongoing surveys and research to gain a better understanding of what farms are already doing to manage use of fertilizer. |
| Additional thoughts | Nutrient management is a key factor in crop yield and quality, farm profitability, water quality, and GHG emission reduction, so will continue to advance via private (e.g., the 4R NY Nutrient Stewardship Certification Program) and public sector efforts. Additional focus and support will accelerate the progress. Investments may increasingly lead to 4R as standard practice and market driven. Need to make steps taken by farmers that implement nutrient management visible to consumers. Develop a “Carbon” Farm Plan template through AEM. Explore developing and implementing regular, periodic surveys to benchmark and gauge management trends over time. |

Mitigation strategies, slide 4 of 12

Scope topic/Subgroup: Soil Health and Regenerative Agricultural Practices

| Strategy under consideration | Soil Health to increase sequestration and resiliency |
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| Rationale | Increase carbon sequestration with the adoption of soil health management practices. |
| Equity considerations | Increasing planning, technical services and financial assistance improves access to programs and effective practices for all farmers. Increase adoption of practices on rented land. Improvements in food production capacity, resiliency and diversity have a positive effect on communities. These practices have the potential to elevate local food production, water quality, air quality, storm/flood mitigation, public infrastructure protection, drought resiliency, habitat, scenic vistas/tourism, economic development and jobs. |
| Potential Implementation challenges | Uncertainty in potential mitigation and impermanence of increasing soil carbon. Difficulty in verification. Equipment affordability and access. Planting windows for cover crops – highly dependent on weather and soil conditions throughout the growing season. Practices require sustained adoption to realize benefit. |
| Issues to explore | Explore the possibility of establishing a Payment for Practice mechanism that will provide incentives to farmers for verified outcomes rather than focusing only on cost share for implementation of specific practices. |
| Additional thoughts | Create incentives to keep perennial vegetation from converting to annual cropping or other systems with higher GHGs. Provide additional points through competitive programs and higher incentives for stacking practices (e.g. cover crops with conservation tillage, rolling/crimping cover crop). Develop a “Carbon” Farm Plan template through AEM. Explore developing and implementing regular, periodic surveys to benchmark and gauge management trends over time. |

Mitigation strategies, slide 5 of 12

Scope topic/Subgroup: Agroforestry

| | |
|--|---|
| Strategy under consideration | Silvopasture, Alley Cropping, Riparian Forest Buffers |
| Rationale | Incorporating trees into areas of agricultural production (agroforestry) have the potential to reliably increase carbon sequestration and have numerous other environmental benefits. |
| Equity considerations | Increasing planning, technical services and financial assistance improves access to programs and effective practices for all farmers. Improvements in food production capacity, resiliency and diversity have a positive effect on communities. These practices have the potential to elevate local food production, water quality, air quality, storm/flood mitigation, public infrastructure protection, drought resiliency, habitat, scenic vistas/tourism, economic development and jobs. |
| Potential Implementation challenges | Upfront costs and learning curve due to rarity in adopting certain agroforestry practices in New York State. Potential for loss income with practices such as riparian forest buffers. Cultural shifts and more research needed into combinations of species, effective management, pilot projects, field trials, market analysis needed before a farm is likely to adopt agroforestry practices. |
| Issues to explore | Explore the possibility of establishing a Payment for Practice mechanism. |
| Additional thoughts | Establish more applied research, field trials, and education on agroforestry practices and techniques. Create a funding track for agroforestry through CRF that provides both technical design services and implementation cost-share. Continue to emphasize riparian forest buffers as an important water quality practice. Develop a “Carbon” Farm Plan template through AEM. Explore developing and implementing regular, periodic surveys to benchmark and gauge management trends over time. |

Mitigation strategies, slide 6 of 12

Scope topic/Subgroup: Land Use Conversions

| Strategy under consideration | Agricultural Protection and Access |
|--|---|
| Rationale | Maintain land base for food production, reduce sprawl development, sequester and store carbon, and avoid vehicle travel emissions associated with development. |
| Equity considerations | Farmland access and affordability to beginning farmers, farmers identifying as black, indigenous, and/or as people of color (BIPOC), and otherwise socially disadvantaged farmers. |
| Potential Implementation challenges | Expanding funding for farmland protection programming, assisting municipalities to plan for farmland protection efforts. |
| Issues to explore | Intergenerational transfer and farmland access. Leasing state land to new farmers. Incentives for farmers to lease or sell land to qualified farmers. Comprehensive plans that include conservation of farmland. Farm succession and farmland access planning and programs to address challenges. |
| Additional thoughts | Targeting programs for highest impact. |

Mitigation strategies, slide 7 of 12

Scope topic/Subgroup: Land Use Conversions

| Strategy under consideration | Keep Forests as Forests |
|--|---|
| Rationale | Maintaining the land base of forestland will help ensure that NY's forests continue to sequester and store carbon for the long-term. |
| Equity considerations | Opportunities for increasing diversity in job recruitment and training, Land availability and access, Additional benefits to communities of smaller forested parcels beyond carbon sequestration. |
| Potential Implementation challenges | Funding. State and local legislation. Local government implementation. Expanding reach to a large number of landowners. |
| Issues to explore | Expanding land conservation efforts through conservation easements and fee acquisition by government or non-profit entities. Setting a land conservation goal, that evaluates a no net forest loss policy for NYS. Forest tax law changes. Supporting forest landowners in keeping their forests as forests and managing them to remain healthy. Forestland to be considered in local comprehensive plans. Potential for a Statewide Community Preservation/Conservation Act. |
| Additional thoughts | Targeting programs for highest impact and additional benefits including human health |

Mitigation strategies, slide 8 of 12

Scope topic/Subgroup: Forestry

Strategy under consideration

Urban Forestry

Rationale

Increase percentage of tree canopy in urban and settlement areas to provide substantial carbon benefits. Utilize urban wood created from construction, deconstruction, regular maintenance and events (weather and forest health) to reduce waste and costs while storing carbon.

Equity considerations

Opportunities for increasing diversity in job recruitment and training. Targeting efforts to climate vulnerable communities. Ensuring BIPOC communities receive the environmental and economic benefits of enhancing urban forestry.

Potential Implementation challenges

Funding for planting and maintenance activities. Coordination of effort. Local government implementation.

Issues to explore

Increase planting and maintenance efforts. Planting on public land as well as private lands. Invasive species impacts. Coordination role for local governments. Communication and education. Reuse programs – building supplies, business development opportunities for use of urban wood. Community benefit from greening vacant land. Increase community forest management plan adoption, Community of practice, coordinating efforts on a regional scale.

Additional thoughts

Targeting programs for highest impact, additional benefits including human health

Mitigation strategies, slide 9 of 12

Scope topic/Subgroup: Forestry

| Strategy under consideration | Increase statewide afforestation/reforestation efforts |
|--|--|
| Rationale | Increasing the afforestation and reforestation efforts statewide will increase carbon sequestration and provide numerous co benefits. |
| Equity considerations | Workforce development and training opportunities. Increasing forestry sector workforce to meet demand for services. |
| Potential Implementation challenges | Implementation at the appropriate scale, land availability, and costs. Short and long term maintenance needs. Herbivore (mainly deer) and invasive species pressure. Statewide nursery capacity, and workforce availability. |
| Issues to explore | Potential to create a NY Tree Corp. Increasing statewide nursery capacity and developing financial incentives for landowners. Expanding current programs while exploring creative financing to reach maximum implementation at the scale needed to meet goals. |
| Additional thoughts | Make it easier for landowners to establish and maintain forests, Need to identify available acres while recognizing competing land use objectives. Importance of site specific species selection needs. |

Mitigation strategies, slide 10 of 12

Scope topic/Subgroup: Forestry

| | |
|--|---|
| Strategy under consideration | Improved forest management |
| Rationale | Improved forest management to maintain and increase carbon sequestration will help New York' forest land sequester more carbon than the current baseline. Scaling up and delivering these practices to provide forest landowners is critical. A base level of training, certification or licensing should be established for forestry professionals as well. |
| Equity considerations | Supporting the economy through forest sector job creation |
| Potential Implementation challenges | Potential legislative needs. Scale and delivery of programs for maximum benefit. Workforce availability. Budget impacts for local municipalities and state. Ease of use for landowners, including a lack of professional forestry services. Lack of public knowledge of forestry and forest carbon. |
| Issues to explore | Incentives to increase forest carbon through improved management. Increase forestry technical/stewardship services. Integrating forest carbon management into existing programs. Reforms to the 480a forest tax law and/or development of new incentive programs. Enhancing/protecting regeneration through herbivore and invasive species management. Role of forest product markets and private forestry services. Improve public outreach and knowledge of forestry to public. Ensure professional forest management is enhanced: Requiring certification/licensing for loggers and foresters who work under state programs/contracts, incentives/regulation for using a certified or licensed professional during a harvest, carbon certification, requiring a timber sale contract on harvest. |
| Additional thoughts | More boots on the ground, matching landowner values with program needs. Recognizing that co-benefits can outweigh carbon benefit. Potential NY Green Bank involvement. Fostering a Family Forest Carbon Program. Fully counting and recognizing the role of urban forest management in building carbon sequestration. |

Mitigation strategies, slide 11 of 12

Scope topic/Subgroup: Forestry

| Strategy under consideration | Increase the manufacture and use of NY grown forest products |
|--|--|
| Rationale | Retaining and expanding local forest products markets provide forest landowners with the financial tools to keep and manage their lands and a carbon substitution benefit. |
| Equity considerations | Workforce development and training opportunities. Increasing forestry sector workforce to meet demand for services. |
| Potential Implementation challenges | Legislative needs. Price of wood over other products, developing a business climate in NYS that would incentivize the manufacture and sale of NY grown forest products. Perception of forestry and forest related activities. |
| Issues to explore | Creation of incentives through both public and private investment. Reform Right to Practice Forestry Law and building codes. Outreach to builders, planners and architects. State procurement preferences, using more wood generally and explore various financing options. More robust reporting systems to track efforts, connecting reporting to the harvest of wood products |
| Additional thoughts | Define and prove sustainability for the public. People generally like wood products. Tell the story to the public to better inform choices that will grow the use of NY grown forest products. |

Mitigation strategies, slide 12 of 12

Scope topic/Subgroup: Bioeconomy

| Strategy under consideration | Expanding markets for renewable bio-based feedstocks which create products that replace fossil fuels |
|--|--|
| Rationale | Enhancing the markets for sustainably-harvested, NY-grown products can provide direct benefits in the State, such as through carbon sequestration, as well as indirect benefits through the substitution bio-based products for fossil fuels based products. |
| Equity considerations | Workforce development opportunities, rural economic development potential. |
| Potential Implementation challenges | Existing economic challenges, a lack of commercial viability, feedstock availability/potential in NYS needs study, supply chain needs to be evaluated. |
| Issues to explore | How to maintain current industries while reducing emissions and facilitating growth in new areas, including through State procurement policies, incentives for buildings [discuss with Housing Panel], exploring specific sources of demand (such as RNG production co-located with industrial users) [discuss with Waste Panel and EITE]. |
| Additional thoughts | How to lay the groundwork today to have a viable bioeconomy in the future |

Waste Advisory Panel

Suggested: Waste Advisory Panel

Martin Brand, Chair
Deputy
Commissioner: Dept.
of Environmental
Conservation

EJ Representative

**Jane Atkinson
Gajwani**
Director, Energy &
Resource Recovery
Programs, NYC DEP

Michael Cahill
Partner, Germano &
Cahill, P.C.

John W. Casella
Chairman & CEO.
Casella Waste Systems

Wastewater Expert

Steve Changaris
Vice President,
Northeast Region.
National Waste &
Recycling Association

Resa Dimino
Senior Consultant,
Resource Recycling
Systems

Dan Egan
Executive Director,
Feeding New York
State

Paul Gilman
VP and Chief
Sustainability Officer,
Covanta

Dereth Glance
Executive Director,
Onondaga County
Resource Recovery
Agency

Eric Goldstein
Sr. Attorney & NYC
Environment Director,
Natural Resources
Defense Council

Allen Hershkowitz
Chairman & Founding
Director, Sport &
Sustainability
International

**Labor
Representative**

**Tok Michelle
Oyewole, PhD**
Policy & Comms
Organizer: NYC EJA

Lauren Toretta
President, CH4 Biogas

Bioenergy

Bioenergy Provisions in the CLCPA

Bioenergy can contribute to the achievement of the emission limits and the net zero goal

Bioenergy in the CLCPA:

- > Alternative compliance mechanism
- > Definition of renewable under Public Service Law
- > Emission limits and annual inventories

Presentation: Potential Roles for Bioenergy in New York's Energy System

Agriculture and Forestry Advisory Panel Bioeconomy Subgroup

> Substitution

- Promote wood in buildings and trims
- Reduce plastic use

> Biofuels

- Renewable Natural Gas
- Liquid biofuels

> Biorefinery

- Chemicals and pharmaceuticals derived from biological raw materials

> Cross panel collaboration

- Feedstocks – Waste Panel
- End use – Energy-Intensive and Trade Exposed Industries, Energy Efficiency & Housing, Power Generation, Transportation

Bioeconomy Roadmap

Developing New York's Wood-Based Bioeconomy

Rationale: Turning bio-based feedstocks into value added products creates locally-based jobs and economic development while providing climate change benefits and other environmental services

Objectives: This project will focus on determining the opportunities and challenges associated with developing the bioeconomy in NYS.

- feedstock supply and potential in NYS
- development for new uses for this material (e.g. mass timber buildings, biochemicals, bioenergy, wood-based textiles, nanocellulose, biochar, and other products)
- coordinating R&D to spur the creation of new technologies and companies.

Agency Updates

Value of Carbon Guidance

Value of Carbon Reduction

CLCPA requires DEC, in coordination with NYSERDA, to establish a Value of Carbon as an evaluation tool for agency decision making

- **Describe damages and marginal abatement cost approaches**
- **Consider a range of discount rates, including zero**
- **Consider the social cost of carbon in other jurisdictions**
- **Provide values for non-CO₂ greenhouse gases**

Target timeline of milestones to meet CLCPA deadline

| Milestone | Date |
|------------------------------------|-------------------|
| Stakeholder conference | July 2020 |
| Public comment period ends | November 27, 2020 |
| Final released (CLCPA requirement) | January 1, 2021 |

Draft Value of Carbon Guidance

The proposed guidance:

- > Provides background on different ways to value greenhouse gas emissions reductions
 - Damages approach and marginal abatement cost
- > Recommends the U.S. Interagency Working Group's (IWG) damages-based value of carbon, also referred to as the social cost of carbon, as appropriate for most agency decision making
- > Considers a range of discount rates, including zero
 - Recommends 1%-3% (\$421-\$53 per ton of CO₂ in 2020 dollars)
 - Seeking comment on central value of 2% or 2.5% (\$125 or \$79 per ton of CO₂ in 2020 dollars)
- > Discusses how to value non-CO₂ greenhouse gases
 - Values are provided for CO₂, NO₂ and CH₄, as per IWG
 - Values for other gases will be added as the research evolves
 - CLCPA 20-yr GWP does not change these values
- > Details specific considerations for State agencies on how to use a damages-based approach

This guidance is not a regulation and does not set a carbon price nor impose any fees.

DEC Draft Value of Carbon Guidance

> Purpose

- The CLCPA directs DEC to establish a value of carbon for use by State agencies by January 1, 2021 (Section 75-0113)
- Value of Carbon is tool for state agencies to aid decision-making and assessment of the value of actions to reduce greenhouse gas emissions.
- A guidance is appropriate for providing instructions to State staff and revised to address myriad needs

> Use

- State agencies may utilize the Value of Carbon to aid many forms of decision-making related to permitting, environmental review, rulemakings, funding, procurement, etc.
- Guidance does not create a price, fee, or compliance obligation.
- The guidance assesses the value of avoided emissions for each gas. Gases do not need to be converted to carbon dioxide equivalents.

Interim Approach to Disadvantaged Communities

Disadvantaged Communities

“Disadvantaged communities shall be identified based on geographic, public health, environmental hazard, and socioeconomic criteria, which shall include but are not limited to:

- a) Areas burdened by cumulative environmental pollution and other hazards that can lead to negative public health effects.*
- b) Areas with concentrations of people that are of low income, high unemployment, high rent burden, low levels of home ownership, low levels of educational attainment, or members of groups that have historically experienced discrimination on the basis of race or ethnicity.*
- c) Areas vulnerable to the impacts of climate change such as flooding, storm surges, and urban heat island effects.”*

- > Minimum of 35% of benefits of clean energy investments and goal of 40% of benefits of broader set of investments to Disadvantaged Communities (DACs)
 - clean energy and energy efficiency programs, projects or investments in the areas of housing, workforce development, pollution reduction, low-income energy assistance, energy, transportation and economic development
- > Criteria developed by CJWG based on input from 6 public statement hearings and published for public comment on DEC website
 - Considerations include available data and methodology for defining and applying Disadvantaged Communities criteria
- > Expect criteria and definition to be established in 12 months – summer 2021 – so requires some interim approach for CEF in the near-term to make progress

Disadvantaged Communities Criteria

- > CJWG working to identify priority indicators and criteria now
- > Rubric for screening of indicators under development
- > Draft criteria expected in Q1 of 2021
- > Final criteria expected Q3 of 2021
- > Developing disadvantaged communities criteria will require:
 - Evaluation of indicators for responsiveness to CLCPA objectives, availability and granularity of data, as well as frequency of updates
 - Methodological considerations for developing a composite through the scoring or indexing of indicators
 - Addressing the weighting of downstate/upstate
 - Stakeholder engagement

Interim Approach to Disadvantaged Communities

- > Near term need to direct investments (geo-based eligibility) by NYSERDA and utilities (e.g.: EV Make-Ready, NY-Sun)
- > Need to create consistency across NYS programming and in establishing eligibility for the market
- > Use criteria that is likely to be incorporated into a final definition of a Disadvantaged Community
- > Criteria used creates categorical eligibility for projects; already familiarity among developers, financiers, contractors
- > Traditional program eligibility for LMI and affordable housing remains unchanged
- > Additional considerations for addressing DAC may be necessary depending on the initiative (e.g. workforce development, innovation, etc)
- > In place until definition finalized by CJWG and DEC public comment process

Interim DAC Criteria

| HUD 50% AMI Census Block Groups | Potential Environmental Justice Areas | NYS Opportunity Zones |
|---|---|--|
| <ul style="list-style-type: none"> • Top quartile of census block groups where the majority of population has an annual income at or below 50% of AMI, as defined by HUD. • Top quartile selected to target areas with highest concentrations of poverty. | <ul style="list-style-type: none"> • Established by NYS DEC • U.S. Census block groups of approximately 250 to 500 households each that, had populations that met or exceeded at least one of the following statistical thresholds: <ul style="list-style-type: none"> • At least 52.42% of the population in an urban area are members of minority groups; or • At least 26.8% of the population in a rural area are members of minority groups; or • At least 22.82% of the population in an urban or rural area had household incomes below the federal poverty level. • With updated income and race/ethnicity metrics | <p style="text-align: center;">or</p> <ul style="list-style-type: none"> • Tracts were selected by ESD based on recommendations from the REDCs, local input, prior public investment and the ability to attract private investment • Federal program approved low-income census tract (ind. poverty rate of at least 20%, med. family income no greater than 80% area med.) • NY has 2000+ low-income census tracts • NY was able to designate 25% (514 tracts) of its low-income census tracts as Opportunity Zones |

Interim DAC Population and Geographic Coverage

| | |
|--|--------------------------------|
| Population | 5,447,090/ 19,618,453 27.8% |
| Census Block Groups | 4,145/ 15,463 26.8% |
| Geographic Splits (pop/blocks as % of State Population): | |
| NYC | 19.2%/ 17.1% |
| Downstate (Excluding NYC) | 3.3%/ 2.8% |
| Upstate | 5.3%/ 6.8% |
| Geographic Splits (pop/blocks as % of Interim Criteria): | |
| NYC | 69.1%/ 63.9% |
| Downstate (Excluding NYC) | 11.8%/ 10.6% |
| Upstate | 19.1%/ 25.5% |

| REDC | Total State Population | % of REDC Pop within DAC |
|------------------|------------------------|--------------------------|
| Capital Region | 5.5% | 12.5% |
| Central New York | 4.0% | 17.0% |
| Finger Lakes | 6.2% | 17.4% |
| Long Island | 14.5% | 6.8% |
| Mid-Hudson | 11.8% | 19.5% |
| Mohawk Valley | 2.5% | 18.6% |
| New York City | 43.0% | 44.6% |
| North Country | 2.2% | 13.8% |
| Southern Tier | 3.3% | 19.9% |
| Western New York | 7.1% | 20.6% |

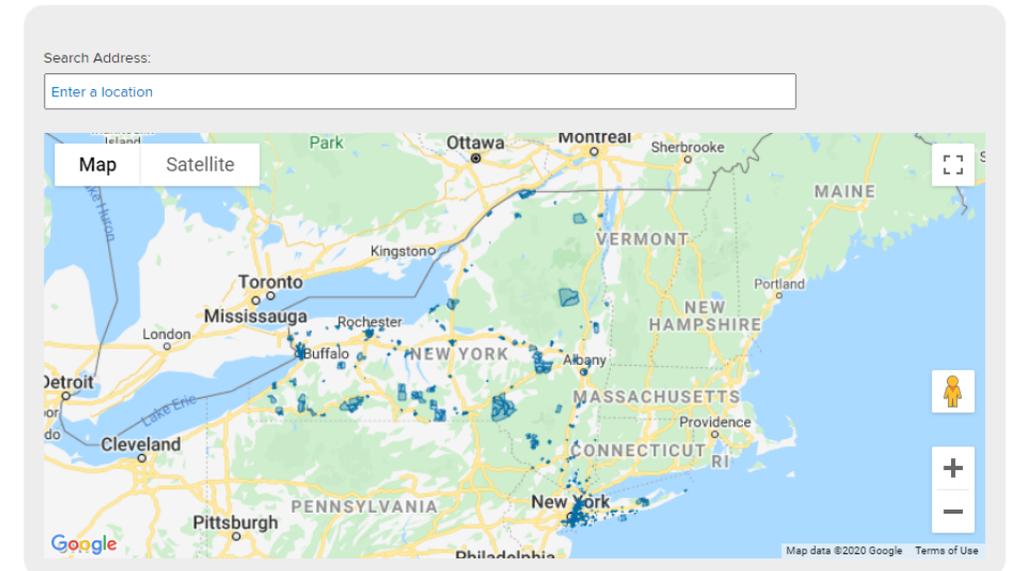
Resources

Available as an interactive map here:

<https://www.nyserda.ny.gov/ny/Disadvantaged-Communities>

The Climate Leadership and Community Protection Act (CLCPA) requires state agencies, authorities, and entities to direct funding in a manner designed to achieve a goal for disadvantaged communities to receive forty percent of overall benefits of spending on clean energy and energy efficiency programs. The CLCPA directs the [CJWG](#) to establish criteria for defining disadvantaged communities, however until the criteria is established, New York State has identified interim criteria for disadvantaged communities, which includes communities:

- Located within census block groups that meet the HUD 50% AMI threshold* (see below), that are also located within the [DEC Potential Environmental Justice Areas](#); and
- Located within [New York State Opportunity Zones](#)



**HUD 50% Threshold: Top quartile of census block groups in New York, ranked by the percentage of LMI Households in each census block. LMI Households are defined as households with annual incomes at or below 50% of the Area Median Income of the County or Metro area where the Census Block Group resides.*

Next Steps