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	
Strategies under consideration	• 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	• 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	• 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	• Legal: possible federal preemption/supremacy issues; • Technical & commercial feasibility (for some buildings): demand and production; workforce constraints; • Political: implementation and execution.
Issues to explore	• 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	• 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	
Strategies under consideration	• 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	• Decarbonizing single, multifamily & commercial/institutional buildings requires large-scale behavioral changes and capital investments using financing/incentives/innovative programs within CLCPA timeframe.
Equity considerations	• Direct public resources with goal that disadvantaged communities receive >= 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	• 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	• Incentives producing greatest impact (incentives, direct cash models etc.); most impacted stakeholders.
Additional thoughts	• 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)	
Strategies under consideration	• 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	• 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	• Direct public resources with goal that disadvantaged communities receive >= 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	• Cost and funding sources • Aligning/scaling the workforce training with job opportunities
Issues to explore	• Funding for education/training & re-training; Strategies priority populations & consumers at decision point.
Additional thoughts	• 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	
Strategies under consideration	• 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	• Technological advances needed for cost effective solutions for some building types; • End-user will need information/data to make informed decisions.
Equity considerations	• 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	• Cost/source of funding; may require public investment beyond NYS • Public-private partnerships will be needed to be effective.
Issues to explore	• 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	• 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	
Strategies under consideration	• 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	• 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/lows and extreme weather events.
Equity considerations	• Direct public resources with goal that disadvantaged communities receive >= 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	• Identifying funding to support resiliency measures; • Coordinating levels of govt & funding sources; balancing recovery needs w/longer-term resiliency & decarbonization strategies.
Issues to explore	• Emergency power generation in times of distress.
Additional thoughts	• 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).