**CAC DRAFT SCOPING PLAN CHAP 12 BUILDINGS 2022 July 1**

**Comments** by Mark Schaeffer PO Box 2056, Albany NY 12220 markalban1@earthlink.net

*New York should guarantee everyone good housing as a human right, through a* ***Green New Deal for Housing****. That would mean building enough fossil-free social housing units to provide all New Yorkers affordable, safe, sustainable housing.*

*The fastest feasible state-led transition to a sustainable economy* ***would create an economic bonanza*** *for New Yorkers - large numbers of good new jobs, more than paid for by avoiding the costs ( ~$39B/y) of fossil energy mainly from out of state per Federal EIA, and avoiding far greater foreseeable costs of impending climate catastrophe, eg multiple Sandy-level superstorms by midcentury. Sweet et al 2014:* https://www.researchgate.net/publication/262186934\_Hurricane\_Sandy\_Innundation\_Probabilities\_Today\_and\_Tomorrow

*Efficiency is important in all sectors, including transportation, electricity generation, storage, & transission, manufacturing and agriculture. But the building sector accounts for the largest share of emissions in NY. Getting to zero net emissions statewide is a heavy lift but the potential benefit is* ***ENORMOUS****. See* Amory Lovins, Rocky Mountain Institute Solutions Journal, Spring 2019 https://medium.com/solutions-journal-spring-2019/the-invisible-energy-bonanza-1e06301c83a5

*Standards should apply to all building sectors: housing (single and multi-unit),  government buildings, and the business sector. New York can and should lead the nation and the world to a just transition.*

**Buildings Sector Key Strategies by Theme (Table 9)**

**Adopt Zero Emissions Codes and Standards and Require Energy Benchmarking for Buildings**

**B1. Adopt Advanced Codes for Highly Efficient, All-Electric, and Resilient New Construction**

Facing the climate emergency demands changing **mandatory statewide building codes to require net zero GHG emissions for new buildings at the earliest feasible date, eg 2025.
District heating combined with geothermal (aka Thermal Energy Networks)**can be optimal especially for multiple buildings that can be built as a unit, for example campuses, office complexes, neighborhoods and subdivisions.

**B2. Adopt Standards for Zero Emissions Equipment and the Energy Performance of Existing Buildings**

Because existing buildings will dominate through the next decade and beyond, they should receive a proportional share of policy attention and public investments. Programs for existing buildings should include state of the art **efficiency and energy storage retrofits** **first,** then renewable energy supply including geothermal, heat pumps, and district heating. Again, district geothermal energy networks can also serve existing campuses, office complexes, neighborhoods and subdivisions. Municipal ownership may be best for existing neighborhoods.

State of the art efficiency, optimizing integrated system design rather than ad hoc patchwork retrofits, should be the first priority - minimizing heating and cooling loads will mean major cost saving over the life cycle of buildings in the scale of required clean energy supplies, as well as lower operating costs. See Lovins 2019, cited above. But efficiency should not come at the expense of ventilation.

***Transition of government buildings should be accelerated*** *and approvals streamlined to expand the market and help drive suppliers to innovate and scale up production*

**Milions of New Yorkers are tenants,** especially low and middle income urban residents. Policy must take account of landlord/tenant issues to ensure timely full transition of this major sector (as long as this relic of feudalsim continues as is likely through this decade). Tenants would get the benefits of strong retrofits in avoided utility costs, but could have their homes temporarily disrupted by the work. They should be compensated and provided training and technical support.

Landlords, whose property would be modified, must both be required to fully cooperate with retrofits and given reasonable incentives to participate willingly. Those should include full financing, outreach, training and technical support. But landlords must be prevented from using efficiency iinvestments as an excuse to raise rents as major capital improvements; because the benefits of reduced greenhouse emissions would go to the public, the state should cover the full cost of installation.

**B3. Require Energy Benchmarking and Disclosure**

**Scale Up Public Financial Incentives and Expand Access to Public and Private Low-Cost Financing for Building Decarbonization**

Because replacing fossil fueled buildings, both by new construction and retrofits, will concentrate costs at the front end but will save money over the life of buildings by avoided fuel costs, we will need **an effective program to fully finance investments** in efficiency, energy storage, heat pumps, solar thermal systems, etc. Customers can pay off the investments in installments as they save avoided fuel costs, through their utility bills. Reforming LIHEAP could finance clean energy improvements for all low income New Yorkers.

**B4. Scale Up Public Financial Incentives**

**B5. Expand Access to Public and Private Low-Cost Financing**

**B6. Align Energy Price Signals with Policy Goals**

**Expand New York’s Commitment to Market Development, Innovation, and Leading-by- Example in State Projects**

Yes, state projects can encourage innovation and economies of scale, and provide highly visible proof that clean energy is practical.

**B7. Invest in Workforce Development**

Preferentally hire and train workers from disadvantaged communities and workers displaced from fossil dependent jobs. Require prevailing wages and non interference with union organizing in all state funded projects.

**B8. Scale Up Public Awareness and Consumer Education**

In addition to the front end costs, lack of knowledge about new technology can be a barrier for many if not most customers. Outreach and training should be easily accessible and widely publicized and should be implemented in a way that reaches all New Yorkers, with clear step by step explanations easily accessible through all media, and ongoing technical support on how to choose, arrange installation of, and maintain all clean energy systems that may be appropriate to diverse customers in different local situations .

**B9. Support Innovation**

**B10. Reduce Embodied Carbon from Building Construction**

**Transition from HFCs**

**B11. Advance a Managed and Just Transition from Reliance on HFC Use**

If **refrigerant gases such as HFCs** **with very high global warming potential** are used in heat pumps, strong measures to prevent their release to the atmosphere must be enforced very strictly, with financial incentives to recyle such as large refundable deposits, repurchase programs for old units analogous to "cash for clunkers", and large penalties for emission. The state should provide training and user friendly technical support to minimize inadvertently release of refrigerants.