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Climate Action Council  
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Albany, NY 12203  
Email: [scopingplan@nyserda.ny.gov](mailto:scopingplan@nyserda.ny.gov)

**RE: Carrier Global Corporation (Carrier) Input on New York State Climate Action Council Draft Scoping Plan**

Dear Climate Action Council,

Carrier provides fire safety, security, building automation, heating, ventilation, air conditioning, and refrigeration systems and services to promote integrated, high-performance buildings that are safer, smarter, and more sustainable. Carrier is the founder of the modern HVAC industry and operates across the globe. Our range of products includes unitary residential and commercial products, including ducted and ductless, transport refrigeration products, chillers, and HVAC building services.

Our 2030 ESG goals<sup>1</sup> underscore our commitment to providing products that contribute to GHG emission reduction. In addition to reducing the carbon footprint of our sites, we are on a mission to reduce our customer's carbon footprint by 1 gigaton by 2030. We have also committed to invest over \$2 billion to develop healthy, safe, sustainable, and intelligent building and cold chain solutions that incorporate sustainable design principles and reduce product lifecycle impacts. A significant amount of that research and development is performed at our facility in Syracuse, NY.

Carrier commends the Climate Action Council for their thoroughness in the Draft Scoping Plan (the "Plan"). Carrier has long had a footprint in New York and is committed to helping the state meet its goals.

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<sup>1</sup> <https://www.corporate.carrier.com/corporate-responsibility/our-sustainability-goals/>

To successfully reach 85% reduction in GHG emissions by 2050, it will take all stakeholders working together. The Plan provides stakeholders a vision and direction to work towards, and clearly articulates the many challenges that must be solved to successfully meet the state's climate goals. The Plan will enable stakeholders to work together to solve these challenges.

Below, please find Carrier's specific input on the building sector strategies found in Chapter 12. Carrier supports the adoption of codes for highly efficient, all-electric, and resilient new construction. Additionally, Carrier will provide input for consideration regarding the financial, workforce, and consumer challenges discussed in the plan. Finally, we provide information for consideration on the HFC regulatory actions, as increasing heat pumps will result in increased HFC use, which is in direct conflict with regulatory actions to reduce the use of HFC refrigerants. Careful coordination of these two objectives is critical to ensuring consumers have access to heat pumps in New York.

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

Carrier supports the proposal to adopt all-electric State codes that prohibit gas/oil equipment for space conditioning for new construction of single family and low-rise residential buildings (and additions and alterations as applicable) in 2024. In new construction, the building envelopes, electrical service, and equipment can all be planned in the building design to optimize the efficiency and operation of electric equipment. Additionally, Carrier supports the proposal to adopt all-electric State codes that prohibit gas/oil equipment for space conditioning for new construction of multi-family buildings over 4 stories and commercial buildings (and additions and alterations as applicable) in 2027 for the same reasons.

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

#### Single-family and Low-rise Residential

It is stated in the plan (pg. 127), "*single-family homes and other low-rise residential buildings (up to three stories) are relatively straightforward to upgrade and convert to zero emissions heating and hot water systems using residential-sized GSHPs or ASHPs that are suited to heat efficiently in cold climates.*". Carrier generally agrees with this technical assessment. However, we believe there are barriers for consumers transitioning to zero emissions equipment in single-family homes and low-rise residential buildings.

A large percentage of single-family systems are replaced at time of failure. This means the homeowner is without heat or without cooling, making a like-for-like replacement the most expedient option. The typical like-for-like replacement can be completed in one day. Whereas, envelope upgrades and switching to an all-electric heat pump system can take multiple days. The project also requires coordination of multiple contractors, which can complicate the process – something that may not be feasible in an emergency replacement situation.

There are financial barriers as well because a like-for-like replacement is the lowest cost option for the homeowner. Carrier generally agrees with the financial challenges presented in the plan, including that the typical cost for a heat pump system with envelope upgrades is \$21,000 - \$40,000 compared to \$10,000 for fossil fuel heat with an air conditioner. The plan also states that 48% of households in New York are low-to-moderate income (LMI). Another data point is the Federal Reserve's 2019 Survey of Consumer Finances<sup>2</sup>, which determined the median transaction account balance for U.S. homeowners is \$10,000. Additionally, as explained in the Plan, the utility bill savings is not always attractive to a homeowner. The report states the payback if replacing fuel oil is 5-8 years, with currently available incentives. If replacing natural gas, the report states there is no clear economic return. Considering the high upfront cost, uncertain economic return, and the average homeowners limited available cash, there is no financial incentive for a homeowner to transition to whole-home heat pumps.

Carrier suggests that The Climate Action Council engage with contractors to better understand the support they need so they can confidently present homeowners with zero emission equipment solutions. Carrier believes a significant barrier is that contractors are not incentivized to include options other than a like-for-like system when bidding the job. One reason is consumers typically do not ask for something different. The typical consumer only cares that their home is heated and cooled and do not care about the details of how this utility is performed. They do not want the system to increase their monthly utility bills, and they want it to be reliable. For this reason, contractors typically offer tiered like-for-like systems based on increasing efficiency. Second, the contractor may be competing for the job against other contractors. They could risk losing the job if their bid is more expensive, will take multiple days to complete, or if they are unable to explain to the homeowner any change in comfort or health. Finally, it is disruptive and expensive for the contractor to develop the workforce to size, sell, install, and service all-electric systems when they have optimized their business for the current fossil fuel market.

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<sup>2</sup> <https://www.federalreserve.gov/econres/scfindex.htm>

Considering these barriers, Carrier is concerned with the feasibility of the proposal to adopt zero emission standards that prohibit gas/oil replacements of heating equipment for single-family homes and low-rise residential buildings beginning in 2030. To be successful, financial incentives must be in place to motivate homeowners to proactively replace their system before failure and for contractors to promote these solutions. Included with proactive replacement of the equipment, building envelop improvements should be required to reduce the load of the building. The installation of onsite energy storage may also be critical to offset the potential load on the electric grid to ensure resiliency.

However, even with these actions, Carrier believes there may be homes and emergency situations that will need an alternative compliance path, which can be accomplished by use of dual fuel systems. Dual fuel systems can be installed in one day, do not require significant infrastructure improvements, and significantly reduce the replacement costs. If a heat pump is installed with a high efficiency gas furnace, the furnace will have limited run time and the system emissions are significantly reduced. Carrier is committed to helping the state solve these challenges and can share more information on dual fuel systems as a limited alternative compliance path.

#### Commercial Buildings and Multi-family

The Plan proposes to adopt zero emission standards that prohibit gas/oil replacements (at end of useful life) of heating and cooling for larger multi-family buildings and commercial buildings starting in 2035. The Plan states that commercial buildings are large with several different building types, which necessitates flexibility in both timing and technological solutions. Carrier agrees with this assessment. We also agree that multi-family buildings have unique challenges because the renter pays the monthly utility bills and often the building owner is purchasing the equipment. For these reasons, it is Carrier's opinion that 2035 is a reasonable transition timeline as long as there are alternative compliance paths and financial mechanisms to protect tenants and help building owners with the necessary investments.

#### **B4. Scale Up Public Financial Incentives and B5. Expand Access to Public and Private Low-Cost Financing**

The Plan recognizes the need to dramatically scale up financial incentives and expand access to low-cost financing. Carrier agrees with the Plan regarding the need to scale up financial incentives and expand low-cost financing and supports the components of the strategy in the Plan. It has been Carrier's experience that utility, state, and original equipment manufacturer (OEM) financial incentive programs can be effective in influencing purchasing decisions. Additionally, based on our estimates, roughly 50% of HVAC systems sold in the U.S. are financed, through personal credit cards, third-party financing through OEM/contractor, local bank financing, and rent-to-own.

Carrier suggests the state should convene a working group with the various stakeholders involved in incentive programs and credit tools to ensure effective programs are adopted. We have found that complex, short-term programs, with difficult application processes and long payment cycles can significantly reduce the effectiveness. Ideally, financial programs are for multiple years, easy to explain to consumers, and have simple administration so contractors can be confident in structuring their product offering to align with the program. This maximizes the effect of a program.

Carrier also respectfully requests that the State consider financial incentives that are directed to the contractor. They experience extra costs and financial risk in this transition. They may need to acquire additional labor and retrain their existing workforce and update their product offering and market strategy. These costs are a barrier for contractors and could cause them business inefficiencies. Contractors heavily influence the homeowner's purchase decisions and play an extremely important role in the success of this Plan.

#### **B7. Investment in Workforce Development**

Carrier agrees that investment in workforce development is a critical component to New York meeting its emission goals. The Plan rightly identifies the need for expanded training to size, sell, install, and maintain heat pumps. Carrier also believes the HVAC technicians need to expand beyond the HVAC system itself. They need to understand the interaction of onsite renewable energy generation, energy storage, and grid connectivity. For instance, a contractor may receive a call from a homeowner that they do not have heat or cooling. With the current systems, the technician is focused on the HVAC system alone. In the future, it could be unrelated to the HVAC system and may be the connection between one of these other systems and the HVAC equipment. While this is a post-sale example, it also

applies to the pre-sale selection and installation of the system. Expanding the skills of HVAC technicians beyond the HVAC system will be important for a successful transition. Carrier encourages the State to engage with manufacturers, distributors, and contractors on effective methods to solve this challenge. Carrier has both recruiting and online learning platforms and can share details on our experience in this space.

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

Carrier agrees consumer education is a key element in the successful execution of the Plan. We believe that consumer education on the incentive programs and financing options is equally, if not more, important than explaining whole home heat pumps. We encourage the State to engage with manufacturers and contractors on the effective methods and materials to educate consumers.

### **B11. Advance a Managed and Just Transition from Reliance on Hydrofluorocarbon (HFC) Refrigerant Use**

The managed phasedown of HFC refrigerants is a critical aspect to the success of the Plan. Shifting from products that use fossil fuels to products that use refrigerant will increase the amount of refrigerant needed in the state. This can create unique challenges when manufacturers are expected to phase down the use of HFC refrigerants.

Carrier agrees that contractor education and training on proper handling is critical, and should be handled through regulations, codes, and standards on proper refrigerant end-of-life handling. The American Innovation and Manufacturing (AIM) Act of 2020 gives EPA the authority to promulgate rules to address HFC handling at end-of-life. Carrier suggests New York should align with federal regulations on refrigerant handling as much as possible.

Regarding the Plan's proposal to phase out high-GWP HFCs, Carrier is concerned that if not done properly, it could create significant issues for homeowners, contractors, and manufacturers. The Plan proposes DEC align New York policy with federal EPA policy measures. Carrier supports this and agrees that it will mitigate the risk of these issues. Leveraging the resources and analysis of the EPA will help New York transition to low-GWP refrigerants at a pace that is technically feasible, safe, and approved by EPA.

Additionally, Carrier is concerned departments in New York could promulgate competing regulations. For example, this Plan proposes adoption of all-electric new construction building code in 2024 for residential. The HVAC equipment to meet this

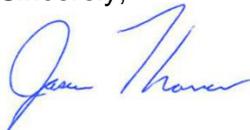
code will be heat pumps using HFC refrigerants. At the same time, DEC recently released a request for feedback on proposed amendments to 6 NYCRR Part 494 that would ban the use of HFC refrigerants in residential heat pumps in 2027. Currently, there are not technically feasible, EPA-approved alternatives for HFC refrigerants. They are either highly flammable, toxic, or much less efficient. If *Part 494* proceeds as proposed, there would not be product available in 2027 to meet the all-electric code. Carrier will be providing direct feedback on the *Part 494* pre-proposal and expects the actual regulation will align with the federal EPA petition to transition to a lower-GWP HFC refrigerant in 2025. This example does highlight the need for coordination across departments within the state.

### **Closing**

Carrier appreciates the opportunity to provide these comments. As a longtime business resident in New York, we want to help the state achieve an 85% GHG emissions reduction by 2050. It is our hope these comments serve as a starting point for further engagement with the state to help establish effective financing and incentive programs, increase the amount of skilled workforce in New York, and make sure the regulatory policies lead to success.

Thank you for consideration of this input. If you have further questions, please contact me.

Sincerely,



Jason Thomas  
Director, Regulatory Affairs  
Carrier

CC: Office of Governor Kathy Hochul

CC: New York State Department of Environmental Conservation (NYSDEC)

CC: New York State Energy Research and Development Authority (NYSERDA)