

# Decarbonization Solutions for Heating & Cooling Applications

Innovative Approaches for a More Sustainable Future



## Growing Demand Meets Increasing Urgency

As the world recognizes the increasing urgency of climate events, and secular trends continue to increase the demand for HVAC and refrigeration products, Carrier is committed to actions that minimize our environmental impact and help address these energy challenges.



2 International Energy Agency. 3 World Health Organization. 4 International Institute of Refrigeration. 5 UNEP Global Status Report for Buildings and Construction. 6 UNEP Food Waste Index Report 2024.

### Our Commitment

At Carrier, we're committed to leadership in sustainability and climate and energy management — and we're in a unique position to do exactly that. You can trust in Carrier's unwavering commitment to deliver solutions that minimize our environmental impact and help address energy challenges faced by our planet.

## Introducing Carrier's Decarbonization Solutions

Carrier's products, services, and digital capabilities help you meet your building's energy and carbon reduction goals. This includes energy-efficient chillers, heat pumps, all-electric refrigeration and building solutions, lower GWP refrigerants, and connected technologies.



SPACE/PROCESS COOLING Our high-efficiency systems and heat recovery technologies can help reduce power consumption and CO<sub>2</sub> emissions.



#### LOWER GWP REFRIGERANT

Implement Carrier's lower GWP refrigerant chillers and chiller refrigerant conversion upgrades for your chiller plant.



#### SPACE/PROCESS HEATING Electrification of heating systems with electric heat pumps and boilers reduces emissions while enabling renewable energy use.



#### DOMESTIC HOT WATER

Electric heat pumps and Carrier's heat recovery chillers can help reduce carbon emissions of boilers supplied by fossil fuels.

#### Lower your building's emissions with Carrier's suite of energy management solutions.

Our team of experts optimizes the design and the operation of your installation for each application, operating condition, and specific customer needs. With our digital solutions including Abound Energy Reporting,\* you can now stay in touch with your chiller plant performance as we drive sustainable energy management together.

# Our Approach

Establishing your chiller plant's existing performance baseline against its design performance is crucial. We conduct an onsite health check and present energy conservations measures that incorporate controls and system operations optimization to improve overall plant efficiency.





Carrier's innovative approach has set a new benchmark for sustainable retrofits, and the results speak for themselves.

Carrier Commercial's modernization team has successfully completed the first phase of a high-efficiency decarbonization project at a building in London, which when fully complete, is projected to deliver an estimated 62% reduction in annual energy consumption. The project, commissioned by CBRE, sought to upgrade the multi-tenant commercial office building's heating and cooling systems. Phase one began in January 2024 with Carrier replacing the end-of-life air-cooled chillers with two AquaForce® 30XW-VZE variable-speed water-cooled screw chillers, using HFO R-1234ze refrigerant, two AquaSnap® 30RQP air-to-water scroll reversible heat pumps for heating and cooling, and two Carrier 09VE dry coolers. In the second phase, Carrier will replace the building's natural gas boilers with two high temperature water-sourced heat pumps to achieve 82°C hot water without requiring costly fan coil or air handling unit upgrades.

# This project is estimated to save overall 800,000€ annually and reduce the building's carbon emissions by 445 tonnes CO2e per year.

Carrier's control strategy with 395 points, nearly five times the typical system, offers five modes of operation and enables refinements to meet the client's expectations and enhance operational efficiency. Performance insights, enabled by Carrier's Abound HVAC Performance platform, will help to inform and refine the second phase, which is on track to be completed in June 2025, a year ahead of the original project timeline.

# Performance in any condition — and any building.

At Carrier, we have decades of knowledge and expertise across all types of buildings and applications. Our team will work with you to select and implement the right solution to meet the unique needs of your project.



Healthcare



Commercial Office



Hospitality



Manufacturing



Higher Education



Data Centers

At Carrier, we are committed to leading the way in driving sustainable energy solutions.. By implementing innovative solutions and sustainable practices, we aim to reduce our carbon footprint and help create a cleaner, greener future for all.

Reach out and speak to your local Carrier expert today.

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