



Turn to the experts



**UNLOCKING THE POTENTIAL:  
MAXIMIZING INCENTIVES FOR EFFICIENCY  
UPGRADES UNDER THE INFLATION REDUCTION ACT**




# CARRIER, INNOVATION IN COMFORT

For more than 120 years, Carrier has been leading the industry with innovative ideas, pursuing excellence in heating and cooling solutions for homeowners all over the world. Our products have changed lives, and our commitment to technological advancements and lifecycle solutions has set the standard for the industry. As the inventors of modern air conditioning, we know firsthand the importance of identifying opportunities, meeting homeowners where they're at, and leaning into what matters most – sustainable, accessible, home comfort solutions.

## So, what exactly is decarbonization and how does it contribute to the environment?

Decarbonization is the effort to reduce carbon emissions through several methods. Electrification, utilizing lower GWP refrigerants, increasing energy efficiency standards, reducing reliance on fossil fuels and natural gas, and increasing reliance on “clean” sources of energy are all parts of the equation.

We keep the environment in mind every time we design a new product or improve an existing one. We set rigorous environmental performance targets and apply the newest innovations to create the most sustainable solutions, so we can help protect the planet while creating industry-leading, energy-efficient comfort for our customers. 

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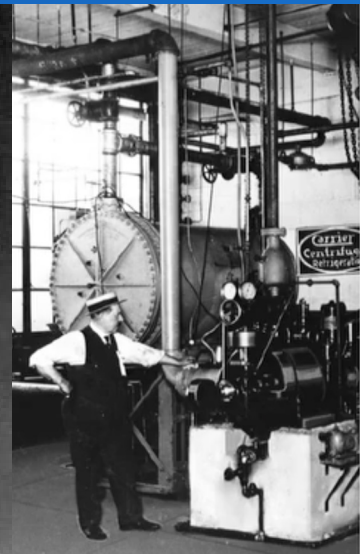
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## WILLIS CARRIER *The Father of Air Conditioning*

Left: Willis Carrier official portrait.  
Right: Willis Carrier stands with his single most  
influential innovation, the centrifugal refrigeration machine.



# EMBRACING DECARBONIZATION: THE FUTURE OF BUILDING AND HOME EFFICIENCY

The world is moving towards a more sustainable future, and one of the critical aspects of this transformation is decarbonization. As building professionals and homeowners, it is essential to understand the concept of decarbonization, why it matters, and how it affects the building industry. This article aims to provide a comprehensive overview of decarbonization, highlighting the importance of anticipating regulatory changes and staying ahead of the curve with innovative technologies.

## Decarbonization Explained

Decarbonization refers to the process of reducing carbon emissions by transitioning from fossil fuel-based energy sources to cleaner, more sustainable alternatives. This shift is crucial for mitigating climate change, protecting the environment, and securing a healthy future for generations to come. As a result, governments worldwide are implementing new regulations and policies to encourage this transition, directly impacting the building and construction industry.

## The Importance of Decarbonization

The building sector is one of the largest contributors to greenhouse gas emissions, accounting for

approximately 39% of global energy-related carbon dioxide emissions. Therefore, decarbonizing the building industry plays a vital role in achieving the global goal of limiting the rise in average temperatures to well below 2°C, as outlined in the Paris Agreement.

As regulations continue to evolve, building professionals and homeowners must stay informed and adapt their practices to comply with these changes. This not only helps to reduce the overall environmental impact but also increases the energy efficiency and long-term value of homes and buildings. Decarbonization can lead to lower operating costs, improved occupant comfort, and increased property value.

## Carrier: A Pioneer in Decarbonization

Carrier, a global leader in HVAC technology, has a long-standing commitment to anticipating regulatory changes and fostering innovation. By staying ahead of the curve, Carrier is well-positioned to guide building professionals and homeowners in their decarbonization efforts. This proactive approach has allowed Carrier to consistently update their product lines and make advancements in HVAC technology, contributing to a more sustainable future.



## Preparing for Success

To lead the way in decarbonization and ensure long-term success, building professionals should consider the following steps:

**Stay informed:** Keep up to date with the latest regulations, policies, and industry trends related to decarbonization. This will enable you to make informed decisions and adapt your business strategies accordingly.

**Invest in education and training:** Provide your team with the necessary training and resources to understand and implement decarbonization strategies. This will help improve the quality of your services and demonstrate your commitment to sustainability.

**Collaborate with experts:** Partner with industry leaders like Carrier to gain access to the latest HVAC technologies and solutions. This collaboration will help you stay ahead of the competition and deliver innovative, sustainable solutions to your clients.

**Prioritize energy efficiency:** Focus on incorporating energy-efficient technologies and materials into your projects. This will not only contribute to decarbonization efforts but also result in long-term cost savings for homeowners.

**Communicate the benefits:** Educate homeowners about the advantages of decarbonization, including increased energy efficiency, lower utility bills, improved comfort, and a reduced environmental impact. This will help generate demand for sustainable building solutions and drive market growth.

## The Journey Towards a Sustainable Future

Decarbonization is not just a trend; it is a vital aspect of securing a sustainable future for our planet. As building professionals and homeowners, we have a responsibility to contribute to these efforts by staying informed, adapting our practices, and prioritizing energy-efficient solutions.



# HEAT PUMPS 101

Heat pumps are an increasingly popular way to heat and cool buildings, and for good reason. These innovative systems use the principles of thermodynamics to extract heat from the air or ground outside, and transfer it into your home or office. This not only provides a more efficient way of heating and cooling, but it can also save you money on your energy bills.

At the heart of a heat pump is a refrigerant, a substance that can absorb and release heat as it changes state from a liquid to a gas and back again. When you switch your heat pump on, it starts to circulate this refrigerant through a closed loop of pipes or coils. As it passes over the outdoor unit, it absorbs thermal energy from the surrounding air or ground, which causes the refrigerant to evaporate into a gas.

The gas is then compressed and pumped inside to the indoor unit, where it passes through a condenser. This releases the heat back into your home or office, as the gas condenses back into a liquid. The heat is then distributed around your building via a network of ducts or pipes.

One of the key advantages of a heat pump is its high efficiency. Because it is simply moving heat from one place to another, rather than generating it from scratch, it can provide several units of heat for every unit of electricity it consumes. This is expressed as the Coefficient of Performance (COP), which measures the ratio of heat output to electrical input. For example, a COP of three means that for every unit of electricity consumed, the heat pump produces three units of heat.

In addition to reducing carbon emissions, the high efficiency of heat pumps means that less energy is required to provide the same level of heating or cooling as traditional systems. This reduces the demand for energy and further contributes to decarbonization efforts.

Heat pumps can be used for both heating and cooling, eliminating the need for separate heating and cooling systems. This reduces the amount of energy required to maintain a comfortable indoor environment, further contributing to their sustainability.

Heat pumps contribute significantly to decarbonization efforts by reducing the use of fossil fuels for heating and cooling buildings. The combustion of fossil fuels, such as natural gas and oil, releases carbon dioxide and other greenhouse gases into the atmosphere, which contributes to climate change.

By using renewable sources of energy, such as thermal energy in the air or ground outside, heat pumps can reduce the reliance on fossil fuels and reduce carbon emissions. This is especially important in the building sector, which accounts for a significant portion of global carbon emissions.

By using heat pumps in buildings, we can significantly reduce our reliance on fossil fuels and move towards a more sustainable and decarbonized energy system. This will be essential to meeting global climate goals and reducing the impacts of climate change. ○

Carrier is dedicated to assisting you on this journey, providing guidance, expertise, and innovative HVAC solutions. Together, we can lead the way for decarbonization in our industry and create a healthier, more sustainable future for all.

### **The Link Between Decarbonization and the HVAC Industry**

The Heating, Ventilation, and Air Conditioning (HVAC) industry is at the heart of the decarbonization movement, as it plays a critical role in shaping the energy efficiency and environmental impact of buildings. HVAC systems are responsible for a significant portion of energy consumption in residential, commercial, and industrial buildings. Consequently, there is a strong link between decarbonization efforts and advancements in HVAC technology.

“  
*By using heat pumps in buildings,  
we can significantly reduce our  
reliance on fossil fuels*”

### **Energy Efficiency and HVAC Systems**

One of the primary goals of decarbonization is to improve energy efficiency, which reduces the demand for energy derived from fossil fuels, thus lowering greenhouse gas emissions. HVAC systems can account for as much as 40-60% of a building's energy consumption, making them a prime target for efficiency improvements. By enhancing the design, installation, and operation of these systems, the HVAC industry can significantly contribute to decarbonization efforts.

### **Innovative HVAC Technologies**

In recent years, there has been a surge in the development and adoption of innovative HVAC technologies aimed at reducing energy consumption and carbon emissions. Some of these technologies include: Variable Refrigerant Flow (VRF) systems: VRF technology allows for precise control of refrigerant flow to match the cooling or heating requirements of a building. This results in higher efficiency and lower energy consumption compared to traditional HVAC systems.


**Heat Pumps:** Heat pumps are a highly efficient alternative to traditional heating and cooling systems, as they transfer heat from one environment to another, rather than generating it. They can also be powered by renewable energy sources, further reducing their carbon footprint.

**Smart HVAC Controls:** The integration of smart controls and sensors in HVAC systems enables more precise monitoring and control of temperature, humidity, and air quality. This can lead to significant energy savings and improved occupant comfort.

**Geothermal Heating and Cooling:** Geothermal systems use the constant temperature of the earth to heat or cool buildings, providing a highly efficient and renewable source of energy.

### **Regulatory Changes and the HVAC Industry**

As governments around the world implement policies and regulations to support decarbonization, the HVAC industry is increasingly required to comply with more stringent energy efficiency and emissions standards. This has led to the development of new technologies, the adoption of best practices, and an increased focus on system performance and maintenance. Companies that stay informed and adapt to these regulatory changes are better positioned to lead the industry and contribute to global decarbonization efforts.

In conclusion, the HVAC industry plays a pivotal role in the decarbonization movement. By embracing innovative technologies, improving energy efficiency, and adhering to changing regulations, HVAC professionals can significantly contribute to reducing greenhouse gas emissions and creating a more sustainable future for all. 



## CROSSOVER SOLUTIONS FOR THE BEST OF BOTH WORLDS

While ductless and traditional HVAC heat pump systems have their own set of advantages, why not get the best of both worlds? Carrier Crossover Solutions allow you to combine the versatility and flexibility of ductless heat pump technology with your existing traditional indoor HVAC equipment.

The Carrier Crossover Solution provides a system that maintains the traditional ducted heating and cooling characteristics while leveraging elements of ductless technology. Our systems are compatible with residential fan coils and furnaces, ensuring seamless integration with your existing HVAC setup.

“ *This program can help eligible buyers increase system savings on certain high-efficiency heat pump systems through a combination of Inflation Reduction Act incentives and Carrier’s Cool Cash offerings.* ”

This crossover solution is ideal when upgrading your home’s current HVAC system, constructing a new home, or adding on to an existing one. With Carrier Crossover Solutions, you can get the quiet operation, small footprint, and enhanced efficiency of ductless, as well as the high performance of traditional units, all in a single crossover system.

Reduced energy requirements mean more efficient, cost-effective heating and cooling. A dual-fuel heating system combines the installation of an electric heat pump with your furnace, giving you two sources to heat your home. This allows you to heat your home in cold weather with the most energy-efficient option.

Inverter technology ensures precise temperature control with fewer temperature swings, while a minimalistic, modern design enables a small outdoor unit footprint. Minimum noise and disruption mean maximum peace and comfort for your home or office.

Carrier Crossover Solutions are compatible with a range of thermostats, plus the ability to control an entire system from one interface. This increases flexibility and connectivity, making it easier to maintain a comfortable indoor environment. ●

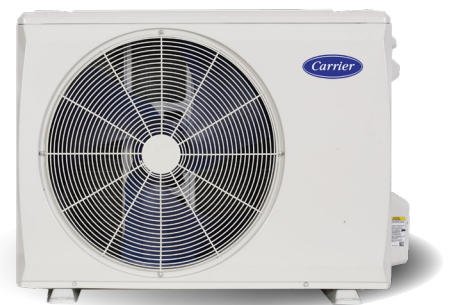




# *THE INFLATION REDUCTION ACT: A COMPREHENSIVE GUIDE FOR BUILDERS AND HOMEOWNERS*

The Inflation Reduction Act (IRA) is a significant piece of legislation aimed at reducing inflation, decreasing carbon emissions, and promoting energy-efficient home heating and cooling products. This article serves as a comprehensive guide for builders and homeowners, focusing on the tax credits and rebates associated with ENERGY STAR® certified HVAC products.

The IRA, passed by the U.S. Government, is designed to encourage the installation of ENERGY STAR® certified home heating and cooling products. It consists of two primary components: rebates and tax credits for HVAC systems.



## TAX CREDITS INCLUDED IN THE IRA

### Tax Section 25C

Nonbusiness Energy Property Credit: This credit provides homeowners with a tax credit equal to 30% of installation costs for the highest efficiency tier products, up to a maximum of \$600 for qualified air conditioners and furnaces, and a maximum of \$2,000 for qualified heat pumps.

### Tax Section 25D

Residential Energy Efficient Property: This credit provides homeowners with a tax credit equal to 30% of installation costs for ENERGY STAR® geothermal heat pumps until 2032. The percentage drops to 26% in 2033 and 22% in 2034.

### Tax Section 45L

New Energy Efficient Home Credit: This credit provides tax credits to builders for meeting specific energy-saving criteria. The tax credits for ENERGY STAR 3.1 certified housing are \$2,500 for single-family homes and \$500 for multi-family units. For meeting the Department of Energy's Zero Energy Ready requirements, the tax credit increases to \$5,000 for single-family and \$1,000 for multi-family residences. If prevailing wage requirements are met on multi-family construction, those credits increase to \$2,500 and \$5,000.

### Tax Section 179D

Commercial Buildings Energy-Efficiency Tax Deduction: This credit provides a tax deduction for building owners to claim for installing qualifying systems in buildings, with a maximum deduction of up to \$14,000.

### Rebates vs. Tax Credits

Rebates are administered at the state level and typically favor lower-income households. Federally funded rebates cannot be combined with each other and are intended for immediate, point-of-sale benefit.

Tax credits, on the other hand, are federal income tax credits available to any person with taxable income. These credits can be combined with each other and with rebates and can be filed for the following calendar/tax year.

### Carrier Products and the IRA

Carrier is actively working to ensure their products meet the IRA requirements, with a primary focus on Tax Section 25C. They are releasing product bulletins outlining which product families have combinations that meet the highest tier (excluding the advanced tier) from the Consortium of Energy Efficiency (CEE) equipment specification. For more information on eligible Carrier products, refer to their 2022 and 2023 product bulletins.

### Homeowner Impact

With the new Carrier EcoHome™ Program, homeowners can access low-rate financing options to amplify the cost savings available from federal programs and Carrier Cool Cash promotions. For qualified buyers in 2023, the program will offer low-rate financing on eligible high-efficiency products. This program can help eligible buyers increase system savings on certain high-efficiency heat pump systems through a combination of Inflation Reduction Act incentives and Carrier's Cool Cash offerings. Moreover, homeowners can take advantage of the tax credits offered by the legislation.

Tax credits can provide homeowners with significant savings, making it more affordable to upgrade to high-efficiency systems. By upgrading to an ENERGY STAR® certified heating and cooling system, homeowners can reduce their carbon footprint and contribute to a more sustainable environment. Furthermore, the program offers rebates for energy efficiency upgrades that improve the overall energy performance of a single-family home or multi-family building. Overall, the Inflation Reduction Act offers homeowners an excellent opportunity to upgrade their home comfort systems while reducing their energy bills and helping the environment.

### What Can You Do Right Now?

As a builder or a homeowner this legislation can have a great impact on your life. You may be asking: well, what do I do now that I know about this?

**“ With Carrier Crossover Solutions, you can get the quiet operation, small footprint, and enhanced efficiency of ductless, as well as the high performance of traditional units, all in a single crossover system. ”**



## REBATES INCLUDED IN THE IRA (THERE ARE TWO MAIN REBATE PROGRAMS UNDER THE IRA)

### High-Efficiency Electric Home Rebate Program


This program provides income-dependent rebates to low-to-moderate-income (LMI) homeowners, including up to \$8,000 for all-electric heat pumps, up to \$4,000 for electrical load service centers, and up to \$2,500 for electric wiring.

### HOMES Rebate

This program provides rebates for energy efficiency upgrades that improve the overall energy performance of a single-family home or multi-family building.

Here are some tips for better handling this evolving piece of legislation:

Because this legislation is so new, there are many details to be worked out. This is a 10-year program with ongoing implications of high-efficiency systems. For now, it's best to:

- Continue to learn all you can about the details of this legislation.
- Pay close attention to rebates in your area – those programs will vary from state-to-state and will take time to develop.
- Be prepared to be patient – some homeowners may choose to wait on installing a new system until the higher tax credits kick in. 



#### Disclaimers:

\* **NOTE:** Be sure to remind your customers that they must consult with a qualified tax professional to determine how these credits may apply in their circumstance.

\* **NOTE:** This information is up to date as of April 2023, but since it is constantly evolving, it's important to check back in often for the latest updates

# CURRENT 2023 PRODUCTS ELIGIBLE FOR 25C, 25D AND 45L TAX CREDITS

Carrier offers a comprehensive family of high-efficiency products that can help homeowners enjoy exceptional comfort, savings on their energy bills, and even receive some money back on their investments through tax credits and rebates. Here's a look at products that meet the current efficiency requirements:

Equipment	2023 Tax Credit	Minimum Efficiency	Carrier Product Families that meet requirements*
Split Central Air Conditioner	\$300	13.0 EER2 16.0 SEER2	24AAA5, 2ABB3, 24ABC6, A4ACA4, 24ABC7, A4ACC4, A4ACC6, 24AHA4, 24ANB1, 24ANB6, 24APB6, 24SCA4, 24SCA5, 24SPA5, 24SPA6, 24TPA7, 24VNA9, 34SCA5, CA13, CA14, CA15, CA16, CA17, GA4S, GA5S, GA7T
Split Air Source Heat Pump	\$300	8.5 HSPF 12.5 EER2 15.0 SEER2	<b>Unitary:</b> 25HBC5, 25HCB6, 25HCC5, 25HCE4, 25HHA4, 25HNB6, 25HPB6, 25TPA7, 25VNA4, 25VNA8, 38MURA, CH14, CH16, CH17, GH7T <b>Ductless:</b> 38MPRB, 38MARB, 38MG*B, 38MHRCQ, RAVAT2, MCY-MAP
Package Air Conditioner	\$300	12.0 EER2 14.0 SEER2	48GC, 50GC, 48VG, 50VG, 50ZP, 48VT
Package Heat Pump	\$300	8.0 HSPF 12.0 EER2 14.0 SEER2	48VR, 50VR, 50ZH, 50VT
Natural Gas, Propane or Oil Furnace	\$300	95% AFUE	59MN7, 59TN6, 59CU5, 59TP6, 59SP6, 59SC5, 59SU5
Geothermal	30% of total system cost	**	GC, GZ, GP, GW, GB

The Inflation Reduction Act (IRA) is a federal government initiative that aims to promote energy efficiency and reduce inflation in homes and buildings.

\* Qualification depends on the specific model and system combination installed, consult the AHRI directory and/or [www.cbpeqp.com/carrierratings.aspx](http://www.cbpeqp.com/carrierratings.aspx) to search for a list of applicable combinations

\*\* [https://www.energystar.gov/about/federal\\_tax\\_credits/geothermal\\_heat\\_pumps](https://www.energystar.gov/about/federal_tax_credits/geothermal_heat_pumps)



# CLEARING THE AIR WITH INDUSTRY-LEADING SOLUTIONS

To help accelerate decarbonization, Carrier offers a comprehensive collection of electric product offerings, including our award-winning heat pumps, ductless systems, VRF systems, and geothermal comfort systems. Our all-electric solutions can replace natural gas or propane in virtually any installation or climate. Low GWP refrigerants are part of the equation as well.

## Heat Pumps

Air-source heat pump technology has evolved over the last 20 years leading to improved indoor comfort, all year long, in all regions. Our best heat pumps can provide warm, energy-efficient heating, even when it's below freezing outside. And depending upon the model, Carrier heat pumps offer ENERGY STAR® certified efficiencies and several leading-edge comfort technologies.

## Ductless Split Systems

Our all-electric ductless split systems offer high-efficiency operation while reducing the energy loss associated with forced-air systems. Ductless systems also save electricity by providing heating or cooling to designated areas, not the entire home.

## VRF Comfort Systems

VRF systems connect multiple indoor evaporator units with a single outdoor condensing unit. These all-electric, high-efficiency systems provide a truly zoned comfort experience while also reducing energy waste associated with forced air systems. They differ from ductless mini-split systems with their ability to vary the refrigerant flow to each evaporator unit and can provide design flexibility.

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# PRODUCT OVERVIEW



## INFINITY® 24 HEAT PUMP WITH GREENSPEED® INTELLIGENCE

The Infinity 24 heat pump with Greenspeed intelligence takes Carrier's most advanced technology to the next level. If it looks like next-gen technology, that's because it is.

Greenspeed intelligence is created by pairing adaptable-speed technology with the Infinity® System Control. The unique, variable-speed compressor of this unit allows it to literally adapt its output to the needs of the home. With tiny adjustments between 25 and 100% capacity, it gives the home only the amount of cooling or heating necessary.

This allows the system to operate longer at steadier, lower capacities, which ensures incredible energy efficiency and quiet operation with tighter temperature control than standard systems.

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## INFINITY® HEAT PUMP WITH BASEPAN HEATER

The ultra-efficient 38MPRB outdoor unit with built-in basepan heater is ENERGY STAR(R) certified and offers year-round comfort. Its impressive cooling operating range maintains consistent capacity from -22° F to 122° F. On the other end of the spectrum, the system's high heating capability is exceptional, running 100% to -22° F to 86° F temperature range. No matter the temperature outside, this system can handle the extremes.

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## VRF HEAT PUMP

The Carrier 38VMH single-phase VRF heat pump system is a combination of an outdoor unit with multiple style indoor units connected by refrigerant piping and wiring. The outdoor units have stacked dual condenser fan with side blow arrangement.

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