

North America HVAC Market By Product Type (Direct Expansion Systems, Central Air Conditioning Systems), By End User (Residential, Commercial, Institutional, Marine & Offshore, Oil & Gas, Power, Others), By Country, Competition, Forecast & Opportunities, 2020-2030F

<https://marketpublishers.com/r/NFA2AB78C2DEN.html>

Date: February 2025

Pages: 120

Price: US\$ 4,000.00 (Single User License)

ID: NFA2AB78C2DEN

Abstracts

North America HVAC Market was valued at USD 48.89 Billion in 2024 and is expected to reach USD 65.36 Billion by 2030 with a CAGR of 5.02% during the forecast period. The Heating, Ventilation, and Air Conditioning (HVAC) system circulates air between indoor and outdoor spaces, filtering indoor air to ensure a healthy environment and optimal humidity levels for comfort. In North America, the market's growth is primarily fueled by the demand for systems that deliver high performance while minimizing energy consumption, leading to a dominant market share. Furthermore, the production of HVAC systems is anticipated to rise during the forecast period due to the growing demand in the automotive sector. Additionally, the American government's stringent filter standards further support the expansion of the market. Various government policies and investments in green building initiatives are expected to drive the demand for energy-efficient systems. For example, the U.S. Department of Energy has allocated approximately USD 6 billion for 33 projects aimed at decarbonizing energy-intensive industries.

End users are increasingly opting for energy-efficient HVAC equipment due to evolving industry standards and regulations. As a result, several OEMs are offering HVAC systems that provide greater energy savings, compact designs, low-GWP refrigerant compatibility, and quieter operation. For example, in August 2023, Carrier, a leading manufacturer, launched the WeatherExpert packaged rooftop ventilation units optimized

for outdoor air applications. This highly efficient rooftop unit is equipped with electronically commutated (ECM) motors, enhancing overall performance.

Market Drivers

Energy Efficiency Demand

A major driver for the growth of the HVAC market in North America is the increasing demand for energy-efficient systems. As concerns over climate change and energy consumption continue to rise, both residential and commercial consumers are seeking HVAC systems that reduce energy costs while promoting environmental sustainability. Government incentives and regulations are also pushing the industry towards higher efficiency standards, particularly in response to energy conservation goals. Innovations such as variable refrigerant flow (VRF) systems, smart thermostats, and energy recovery ventilators (ERVs) are gaining traction as they significantly reduce energy waste and provide more efficient temperature control. The growing emphasis on reducing carbon footprints, combined with rising energy prices, has spurred greater adoption of these technologies, making energy efficiency a key driver in HVAC market growth.

Technological Advancements

Technological innovations are playing a pivotal role in the evolution of the HVAC industry. The integration of smart technologies such as Internet of Things (IoT) devices, sensors, and AI-driven algorithms is revolutionizing how HVAC systems are monitored and operated. Smart thermostats, for example, allow users to control temperature settings remotely through smartphones, optimizing energy usage and enhancing comfort. Furthermore, predictive maintenance tools enable HVAC systems to monitor their own performance and alert users to potential issues before they escalate, reducing downtime and repair costs. Other advancements, such as the development of air quality enhancement technologies like UV filters and high-efficiency particulate air (HEPA) filters, also help address growing concerns about indoor air quality, making HVAC systems not just about climate control but also improving health and well-being. These technological strides not only improve system performance but also offer a seamless, integrated user experience, driving market growth.

Urbanization and Construction Boom

The ongoing construction boom and rapid urbanization in North America are significant

contributors to the growing HVAC market. As more people migrate to urban areas, the demand for both residential and commercial spaces has surged, requiring advanced heating, cooling, and ventilation systems to maintain comfortable and healthy living conditions. New residential buildings, office complexes, retail spaces, and schools all require customized HVAC solutions to meet specific needs based on building size, location, and purpose. Additionally, many older buildings are being retrofitted with modern, energy-efficient HVAC systems, which further fuels market demand. Urbanization also brings the challenge of managing the urban heat island effect, increasing the need for energy-efficient and effective HVAC systems that can regulate indoor climates despite external temperature fluctuations. With construction trends favoring sustainable, eco-friendly designs, HVAC systems that incorporate energy-saving technologies are crucial for meeting modern building standards, propelling the demand for advanced HVAC solutions in the region.

Key Market Challenges

High Installation and Maintenance Costs

One of the major challenges facing the North America HVAC market is the high initial cost of installation and ongoing maintenance of HVAC systems. Whether for residential, commercial, or industrial purposes, HVAC systems often require significant upfront investment, particularly when incorporating advanced technologies such as smart systems, energy-efficient units, or customized installations. For businesses and homeowners, this high cost can be a deterrent, especially during periods of economic uncertainty. Additionally, HVAC systems require regular maintenance to function optimally, which adds to the operational costs. The combination of high upfront costs and maintenance expenses can make it difficult for many consumers to adopt advanced HVAC solutions, limiting market growth in certain segments.

Regulatory Compliance and Standards

Another challenge for the North America HVAC market is the constantly evolving regulatory landscape surrounding energy efficiency, environmental standards, and safety. Government regulations on energy consumption and emissions are becoming stricter, which means HVAC manufacturers need to continually innovate to meet these requirements. This can involve substantial research and development investments, which may increase production costs. Additionally, the compliance process can be complex, with different states and municipalities imposing varying codes and standards, leading to potential confusion and additional administrative burdens. Manufacturers and

service providers need to stay ahead of changing regulations to avoid fines and maintain market access, and this may present an additional challenge for smaller businesses that lack the resources to meet these demanding standards.

Skilled Labor Shortage

The HVAC industry in North America faces a shortage of skilled labor, which is one of its most pressing challenges. As HVAC systems become more complex, there is a growing need for qualified technicians who can install, maintain, and repair these advanced systems. The lack of skilled workers, particularly in specialized areas like smart home integration or high-efficiency systems, makes it difficult for businesses to meet rising demand. The gap in skilled labor also leads to higher wages, longer service times, and the potential for service delays, all of which can negatively affect customer satisfaction and business operations. Additionally, the HVAC industry has an aging workforce, with many experienced professionals nearing retirement, and a lack of younger individuals entering the trade. This shortage could slow the industry's growth if not addressed through targeted education, training programs, and initiatives to attract younger workers into the field.

Key Market Trends

Integration of Smart HVAC Systems

The North America HVAC market is witnessing a significant shift toward smart HVAC systems, driven by increasing consumer demand for energy efficiency, convenience, and automation. Smart HVAC technology uses advanced sensors, IoT (Internet of Things) capabilities, and artificial intelligence to monitor and adjust indoor temperature, humidity, air quality, and energy consumption in real time. These systems can be controlled remotely via smartphones or voice assistants like Amazon Alexa and Google Assistant, offering users a more personalized and flexible experience. One of the primary advantages of smart HVAC systems is their ability to optimize energy usage, which is not only cost-effective but also environmentally friendly. Energy savings are achieved through features like adaptive temperature controls, energy usage tracking, and predictive maintenance, where the system alerts users of potential issues before they become major problems. Additionally, the rise of connected homes has amplified the demand for smart HVAC systems, with consumers preferring systems that integrate seamlessly with other smart devices in their homes. As awareness of climate change and the need for sustainable energy practices grows, energy-efficient HVAC solutions that reduce carbon footprints have become more attractive. This trend is supported by

the increasing availability of government incentives and rebates for eco-friendly HVAC systems, propelling the adoption of smart technologies in both residential and commercial applications.

Rising Demand for Energy-Efficient HVAC Solutions

Energy efficiency is a crucial trend driving the North America HVAC market, as both businesses and homeowners seek to reduce energy consumption and lower operational costs. Government regulations, energy standards, and consumer awareness are key factors encouraging the adoption of energy-efficient HVAC systems. These systems incorporate features such as variable-speed compressors, high-efficiency filters, and advanced insulation materials, which minimize energy waste and improve performance. Energy-efficient HVAC systems not only help businesses and homeowners reduce electricity bills, but they also contribute to environmental sustainability by lowering carbon emissions. In response to tightening environmental regulations, HVAC manufacturers are increasingly developing systems with higher SEER (Seasonal Energy Efficiency Ratio) and EER (Energy Efficiency Ratio) ratings, as well as eco-friendly refrigerants that have a lower global warming potential (GWP). Moreover, energy-efficient systems, such as heat pumps and variable refrigerant flow (VRF) systems, are being adopted for both residential and commercial purposes. The rising concern over climate change has also encouraged North American governments to implement stricter building codes and incentivize the use of energy-efficient HVAC systems through rebates, tax credits, and other incentives. This trend is expected to accelerate in the coming years as both commercial and residential markets increasingly focus on reducing their carbon footprints and energy expenditures.

Adoption of Health-Conscious HVAC Solutions

The ongoing COVID-19 pandemic has significantly impacted consumer and business priorities, especially regarding indoor air quality (IAQ) and overall health safety. In response to the growing awareness of airborne pathogens and allergens, there has been a rising demand for HVAC systems that improve air quality, providing a healthier indoor environment. As a result, the North America HVAC market has seen a surge in the adoption of advanced filtration systems, UV light purification technologies, and air purifiers that help reduce the spread of viruses and bacteria. HEPA (High-Efficiency Particulate Air) filters and UV-C lights are being integrated into HVAC systems to trap and kill harmful pathogens, ensuring that the air circulating in homes and commercial spaces remains clean and safe. Furthermore, the emphasis on improving IAQ is not limited to health concerns. With the growing number of people spending more time

indoors, consumers are also looking for HVAC solutions that reduce allergens, dust, and pollutants, improving overall well-being. For commercial spaces such as offices, schools, and healthcare facilities, there is a greater emphasis on ventilation and air exchange to ensure optimal IAQ. This has led to an increased demand for HVAC systems with advanced ventilation controls, including energy recovery ventilators (ERVs) and heat recovery ventilators (HRVs). These systems ensure a continuous supply of fresh air while maintaining energy efficiency. In the long term, health-conscious HVAC solutions are expected to become a standard requirement, reshaping the HVAC landscape in North America.

Segmental Insights

Product Type Insights

Central air conditioning systems dominated the North America HVAC market due to their efficiency, effectiveness, and widespread adoption in both residential and commercial applications. These systems are designed to cool large spaces uniformly, offering an advantage over window units or portable air conditioners, which are typically limited in coverage and less efficient. In residential settings, central air conditioning systems are favored for their ability to maintain consistent comfort across multiple rooms or the entire home, making them ideal for larger homes or buildings with multiple levels. The convenience of central air conditioning, combined with improved energy efficiency standards, has made these systems a go-to choice for homeowners seeking reliable and effective cooling solutions. In commercial and industrial sectors, central air conditioning systems are essential for maintaining optimal working conditions, particularly in large office buildings, malls, and manufacturing facilities. Their ability to handle large-scale cooling demands while integrating with heating systems in HVAC units contributes to their continued preference. Moreover, the increasing focus on energy efficiency, improved SEER ratings, and eco-friendly refrigerants in modern central air systems has strengthened their market dominance. As a result, central air conditioning remains the leading segment, meeting both consumer needs for comfort and environmental sustainability goals.

Country Insights

The United States stand as the dominant player in the North America HVAC market, driven by a combination of factors including a large population, rapid urbanization, diverse climate conditions, and a strong demand for both residential and commercial HVAC solutions. As the largest economy in the region, the U.S. accounts for a

significant share of the market due to the extensive use of HVAC systems in homes, businesses, and industrial applications. The demand for HVAC systems in the U.S. is supported by varying weather conditions across the country, ranging from hot summers in southern states to cold winters in the north. This creates a consistent need for both heating and cooling systems, making HVAC essential in both new constructions and the retrofit market. Moreover, the increasing focus on energy efficiency, government incentives, and stricter environmental regulations are driving the adoption of advanced HVAC technologies, including smart thermostats, energy-efficient units, and eco-friendly refrigerants. In addition, the growth of the commercial sector, including office buildings, healthcare facilities, and manufacturing plants, further bolsters the HVAC market. As the U.S. continues to prioritize sustainability and innovation, its leadership in the North America HVAC market remains unchallenged, influencing trends and setting industry standards across the region.

Key Market Players

Johnson Controls International PLC

Daikin Industries Ltd

Lennox International Inc.

Electrolux AB

Emerson Electric Co.

Carrier Corporation

Rheem Manufacturing Company Inc.

Uponor Corp.

Ingersoll Rand Inc. (Trane Inc.)

Nortek Global HVAC, LLC

Report Scope:

In this report, the North America HVAC Market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:

North America HVAC Market, By Product Type:

Direct Expansion Systems

Central Air Conditioning Systems

North America HVAC Market, By End User:

Residential

Commercial

Institutional

Marine & Offshore

Oil & Gas

Power

Others

North America HVAC Market, By Country:

United States

Mexico

Canada

Competitive Landscape

Company Profiles: Detailed analysis of the major companies presents in the North America HVAC Market.

Available Customizations:

North America HVAC Market report with the given market data, TechSci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

Company Information

Detailed analysis and profiling of additional market players (up to five).

Contents

1. INTRODUCTION

- 1.1. Product Overview
- 1.2. Key Highlights of the Report
- 1.3. Market Coverage
- 1.4. Market Segments Covered
- 1.5. Research Tenure Considered

2. RESEARCH METHODOLOGY

- 2.1. Objective of the Study
- 2.2. Baseline Methodology
- 2.3. Key Industry Partners
- 2.4. Major Association and Secondary Sources
- 2.5. Forecasting Methodology
- 2.6. Data Triangulation & Validation
- 2.7. Assumptions and Limitations

3. EXECUTIVE SUMMARY

- 3.1. Market Overview
- 3.2. Market Forecast
- 3.3. Key Country
- 3.4. Key Segments

4. VOICE OF CUSTOMER

- 4.1. Factors Influencing Purchase Decision
- 4.2. Sources of Information

5. NORTH AMERICA HVAC MARKET OUTLOOK

- 5.1. Market Size & Forecast
 - 5.1.1. By Value
- 5.2. Market Share & Forecast
 - 5.2.1. By Product Type Market Share Analysis (Direct Expansion Systems, Central Air Conditioning Systems)

5.2.2. By End User Market Share Analysis (Residential, Commercial, Institutional, Marine & Offshore, Oil & Gas, Power, Others)

5.2.3. By Country Market Share Analysis

5.2.3.1. United States Market Share Analysis

5.2.3.2. Mexico Market Share Analysis

5.2.3.3. Canada Market Share Analysis

5.2.4. By Top 5 Companies Market Share Analysis, Others (2024)

5.3. North America HVAC Market Mapping & Opportunity Assessment

5.3.1. By Product Type Market Mapping & Opportunity Assessment

5.3.2. By End User Market Mapping & Opportunity Assessment

5.3.3. By Country Market Mapping & Opportunity Assessment

6. UNITED STATES HVAC MARKET OUTLOOK

6.1. Market Size & Forecast

6.1.1. By Value

6.2. Market Share & Forecast

6.2.1. By Product Type Market Share Analysis

6.2.2. By End User Market Share Analysis

7. MEXICO HVAC MARKET OUTLOOK

7.1. Market Size & Forecast

7.1.1. By Value

7.2. Market Share & Forecast

7.2.1. By Product Type Market Share Analysis

7.2.2. By End User Market Share Analysis

8. CANADA HVAC MARKET OUTLOOK

8.1. Market Size & Forecast

8.1.1. By Value

8.2. Market Share & Forecast

8.2.1. By Product Type Market Share Analysis

8.2.2. By End User Market Share Analysis

9. MARKET DYNAMICS

9.1. Drivers

9.2. Challenges

10. IMPACT OF COVID-19 ON NORTH AMERICA HVAC MARKET

11. MARKET TRENDS & DEVELOPMENTS

12. COMPETITIVE LANDSCAPE

12.1. Company Profiles

12.1.1. Johnson Controls International PLC

12.1.1.1. Company Details

12.1.1.2. Products

12.1.1.3. Financials (As Per Availability)

12.1.1.4. Key Market Focus & Geographical Presence

12.1.1.5. Recent Developments

12.1.1.6. Key Management Personnel

12.1.2. Daikin Industries Ltd

12.1.2.1. Company Details

12.1.2.2. Products

12.1.2.3. Financials (As Per Availability)

12.1.2.4. Key Market Focus & Geographical Presence

12.1.2.5. Recent Developments

12.1.2.6. Key Management Personnel

12.1.3. Lennox International Inc.

12.1.3.1. Company Details

12.1.3.2. Products

12.1.3.3. Financials (As Per Availability)

12.1.3.4. Key Market Focus & Geographical Presence

12.1.3.5. Recent Developments

12.1.3.6. Key Management Personnel

12.1.4. Electrolux AB

12.1.4.1. Company Details

12.1.4.2. Products

12.1.4.3. Financials (As Per Availability)

12.1.4.4. Key Market Focus & Geographical Presence

12.1.4.5. Recent Developments

12.1.4.6. Key Management Personnel

12.1.5. Emerson Electric Co.

12.1.5.1. Company Details

- 12.1.5.2. Products
- 12.1.5.3. Financials (As Per Availability)
- 12.1.5.4. Key Market Focus & Geographical Presence
- 12.1.5.5. Recent Developments
- 12.1.5.6. Key Management Personnel
- 12.1.6. Carrier Corporation
 - 12.1.6.1. Company Details
 - 12.1.6.2. Products
 - 12.1.6.3. Financials (As Per Availability)
 - 12.1.6.4. Key Market Focus & Geographical Presence
 - 12.1.6.5. Recent Developments
 - 12.1.6.6. Key Management Personnel
- 12.1.7. Rheem Manufacturing Company Inc.
 - 12.1.7.1. Company Details
 - 12.1.7.2. Products
 - 12.1.7.3. Financials (As Per Availability)
 - 12.1.7.4. Key Market Focus & Geographical Presence
 - 12.1.7.5. Recent Developments
 - 12.1.7.6. Key Management Personnel
- 12.1.8. Uponor Corp.
 - 12.1.8.1. Company Details
 - 12.1.8.2. Products
 - 12.1.8.3. Financials (As Per Availability)
 - 12.1.8.4. Key Market Focus & Geographical Presence
 - 12.1.8.5. Recent Developments
 - 12.1.8.6. Key Management Personnel
- 12.1.9. Ingersoll Rand Inc. (Trane Inc.)
 - 12.1.9.1. Company Details
 - 12.1.9.2. Products
 - 12.1.9.3. Financials (As Per Availability)
 - 12.1.9.4. Key Market Focus & Geographical Presence
 - 12.1.9.5. Recent Developments
 - 12.1.9.6. Key Management Personnel
- 12.1.10. Nortek Global HVAC, LLC
 - 12.1.10.1. Company Details
 - 12.1.10.2. Products
 - 12.1.10.3. Financials (As Per Availability)
 - 12.1.10.4. Key Market Focus & Geographical Presence
 - 12.1.10.5. Recent Developments

12.1.10.6. Key Management Personnel

13. STRATEGIC RECOMMENDATIONS/ACTION PLAN

13.1. Key Focus Areas

13.2. Target Product Type

13.3. Target End User

14. ABOUT US & DISCLAIMER

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