

# **Net Zero Energy Buildings Market Forecasts to 2030 – Global Analysis By Component (Equipment and Solution & Services), Energy Source (Solar Energy, Biogas and Other Energy Sources), Construction Phase, Technology Integration, Application and By Geography**

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## **Abstracts**

According to Statistics MRC, the Global Net Zero Energy Buildings Market is accounted for \$56.63 billion in 2024 and is expected to reach \$164.93 billion by 2030 growing at a CAGR of 19.5% during the forecast period. Net Zero Energy Buildings (NZEBS) are structures designed to generate as much energy as they consume on an annual basis, often through a combination of energy-efficient technologies and renewable energy sources like solar panels or wind turbines. By using more energy-efficient HVAC systems, better insulation, and energy-efficient lighting, these buildings seek to lessen their negative effects on the environment. In order to attain net-zero energy consumption over the course of a year, the amount of energy used by the building must be equal to or less than the amount of energy produced.

According to the National Renewable Energy Laboratory (NREL), buildings do account for approximately 40% of total energy consumption in the United States, including 75% of all electricity use and 35% of the nation's carbon emissions.

Market Dynamics:

Driver:

Governmental rules and rewards

Stricter building codes, rules, and energy standards are being enforced by governments worldwide in an effort to lower carbon emissions. Many nations have laws requiring new construction to achieve Net Zero Energy, or drastically cut energy use, by a certain date. The Energy Performance of Buildings Directive (EPBD), for instance, was introduced by the European Union with the goal of making all new buildings 'nearly zero-energy' by 2021. Additionally, governments are offering a range of incentives, including tax credits, grants, and rebates, to encourage the building of NZEBs and the adoption of energy-efficient technologies.

#### Restraint:

Absence of knowledge and experienced staff

Some areas may not have the specialized knowledge and skills needed to develop and implement Net Zero Energy Buildings. Energy-efficient building methods, renewable energy systems, smart building technologies, and energy management are all necessary for the design, construction, and upkeep of NZEBs. There is a shortage of qualified personnel who can manage the unique needs of NZEBs since the demand for professionals with these kinds of training frequently outpaces the supply. Poor training for engineers, architects, and construction workers can lead to less-than-ideal building performance, longer project completion times, and increased expenses.

#### Opportunity:

Innovation in technology for construction materials and systems

There are numerous opportunities to improve the performance of Net Zero Energy Buildings owing to developments in energy systems and building materials. Buildings can use less energy owing to constantly evolving energy-efficient windows, smart HVAC systems, high-performance insulation materials, and innovative lighting options. Moreover, buildings will be able to store extra energy generated during the day to be used at night or during times of low production owing to advancements in energy storage technologies, such as more reasonably priced and durable batteries. Automation, sensors, and energy management systems are examples of smart home and building technologies that can be integrated to optimize energy consumption and improve the usability and efficiency of NZEBs.

#### Threat:

## Geographic restrictions and climate change

A building's capacity to achieve Net Zero Energy status frequently depends on regional environmental elements like climate, topography, and the accessibility of renewable energy sources. Buildings in locations with little access to sunlight or wind, for instance, might find it difficult to use solar panels or wind turbines to produce enough energy to meet their needs. In some climates, this can make meeting NZEB standards more challenging, particularly in areas with severe winters or protracted cloud cover. Furthermore, overcrowding or dense building designs may limit the amount of space available for renewable energy installations, like rooftop solar panels, in highly urbanized areas.

## Covid-19 Impact:

The COVID-19 pandemic affected the market for Net Zero Energy Buildings (NZEB) in a variety of ways. On the one hand, the disruption of international supply chains and construction activities hindered the advancement of NZEB projects and postponed the implementation of renewable energy systems and energy-efficient building technologies. However, the pandemic brought to light the significance of resilient, sustainable, and energy-efficient structures as people's awareness of environmental problems and the need for healthier indoor environments grew. As a result, green building initiatives gained more attention, and the need for self-sustaining and energy-efficient spaces increased.

The Solar Energy segment is expected to be the largest during the forecast period

The Solar Energy segment is expected to account for the largest market share during the forecast period. This is a result of solar energy's broad use, affordability, and demonstrated effectiveness in lowering energy usage. NZEBs heavily rely on solar photovoltaic (PV) systems to produce renewable electricity, thereby reducing their reliance on conventional energy sources. Since solar energy makes sure that buildings generate as much energy as they use, it also fits in nicely with the objective of reaching net zero energy. Additionally, the increasing demand for sustainability, together with developments in solar technology and encouraging government regulations, has sped up its incorporation into net-zero energy buildings and made it the market leader.

The New Construction segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the New Construction segment is predicted to witness the highest growth rate. Government incentives for energy-efficient construction, strict building codes, and growing global awareness of sustainability are all contributing to this segment's notable growth. The need for NZEBs in this industry is growing quickly as new construction projects strive for zero-energy performance by incorporating cutting-edge technologies like solar panels, effective insulation, and energy-efficient HVAC systems. Furthermore, urbanization and the need for climate change-fighting sustainable infrastructure are also major factors in this growth, which makes new construction a crucial area for energy efficiency innovation.

Region with largest share:

During the forecast period, the North America region is expected to hold the largest market share. This is mostly because governments, especially those in the US and Canada, have robust policies, incentives, and regulatory frameworks that support sustainability. The region has witnessed an increase in NZEB projects, both residential and commercial, due to growing emphasis on lowering carbon footprints, long-term cost savings, and energy efficiency. Moreover, the quick uptake of NZEBs in the area has strengthened its leading market position owing to developments in clean energy technologies like solar and energy storage systems.

Region with highest CAGR:

Over the forecast period, the Asia Pacific region is anticipated to exhibit the highest CAGR. The adoption of energy-efficient building practices is being propelled by the region's fast urbanization, population growth, and increasing energy demand. Governments in nations like China, India, and Japan are enforcing more stringent energy regulations and providing financial incentives for environmentally friendly building practices. Additionally, the move toward NZEBs is being accelerated by growing awareness of energy efficiency and climate change as well as technological advancements. The market is growing due to the region's expanding middle class and the need for energy-efficient, modern infrastructure, which makes Asia-Pacific a crucial region for NZEB expansion.

Key players in the market

Some of the key players in Net Zero Energy Buildings market include ABB Ltd., Daikin Industries Ltd., Schneider Electric, General Electric Company, Honeywell International

Inc., Johnson Controls International plc, Siemens AG, Legrand SA, Altura Associates, Inc., Integrated Environmental Solutions Ltd, Sage Electrochromics Inc., Eaton Corporation plc, Kingspan Group Plc, Mitsubishi Electric Corporation and SunPower Corporation.

#### Key Developments:

In December 2024, Honeywell announced the signing of a strategic agreement with Bombardier, a global leader in aviation and manufacturer of world-class business jets, to provide advanced technology for current and future Bombardier aircraft in avionics, propulsion and satellite communications technologies.

In November 2024, Daikin and Copeland have announced a joint venture for Copeland to bring Daikin's inverter swing rotary compressor technology to the U.S. residential segment. Daikin's innovative inverter swing rotary technology complements Copeland's portfolio and delivers substantial benefits including reduced energy usage, cost savings and enhanced reliability.

In September 2024, Schneider Electric announced having facilitated several new TCT deals by Kimberly-Clark Corporation, one of the world's leading manufacturers of personal care and hygiene products and owner of household brands such as Huggies, Kleenex, Scott, Kotex, Cottonelle, Poise, Depend, and WypAll.

#### Components Covered:

Equipment

Solution & Services

#### Energy Sources Covered:

Solar Energy

Biogas

Other Energy Sources

#### Construction Phases Covered:

New Construction

Renovation or Retrofit

Hybrid Approach

#### Technology Integrations Covered:

Passive Design Strategies

Energy-Efficient Systems

Renewable Energy Sources

#### Applications Covered:

Commercial

Residential

#### Regions Covered:

North America

US

Canada

Mexico

Europe

Germany

UK

Italy

France

Spain

Rest of Europe

Asia Pacific

Japan

China

India

Australia

New Zealand

South Korea

Rest of Asia Pacific

South America

Argentina

Brazil

Chile

Rest of South America

Middle East & Africa

Saudi Arabia

UAE

Qatar

South Africa

Rest of Middle East & Africa

What our report offers:

- Market share assessments for the regional and country-level segments
- Strategic recommendations for the new entrants
- Covers Market data for the years 2022, 2023, 2024, 2026, and 2030
- Market Trends (Drivers, Constraints, Opportunities, Threats, Challenges, Investment Opportunities, and recommendations)
- Strategic recommendations in key business segments based on the market estimations
- Competitive landscaping mapping the key common trends
- Company profiling with detailed strategies, financials, and recent developments
- Supply chain trends mapping the latest technological advancements

Free Customization Offerings:

All the customers of this report will be entitled to receive one of the following free customization options:

#### Company Profiling

Comprehensive profiling of additional market players (up to 3)

SWOT Analysis of key players (up to 3)

#### Regional Segmentation

Market estimations, Forecasts and CAGR of any prominent country as per the client's interest (Note: Depends on feasibility check)

#### Competitive Benchmarking

Benchmarking of key players based on product portfolio, geographical presence, and strategic alliances

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