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Building Automation Energy Harvesting Market Opportunity, Growth Drivers, Industry Trend Analysis, and Forecast 2025 - 2034

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Abstracts

The Global Building Automation Energy Harvesting Market was valued at USD 258.1 million in 2024 and is estimated to grow at a CAGR of 9.1% to reach USD 593.3 million by 2034. This remarkable growth trajectory reflects a widespread shift toward intelligent energy systems across both residential and commercial environments. As sustainability takes center stage across industries, building operators, facility managers, and developers are increasingly adopting automation technologies that drive energy efficiency while lowering operational costs. From HVAC systems to lighting and advanced security networks, automation is becoming integral to modern building design. This transformation is further fueled by the global push for zero-emission structures, stringent government mandates on energy usage, and the rising costs of conventional energy sources. Consumers and businesses alike are prioritizing eco-friendly living and working environments, creating robust demand for energy harvesting solutions that minimize reliance on external energy grids. In addition, the growing penetration of the Internet of Things (IoT) and AI-enabled platforms has unlocked new opportunities for seamless integration of automation technologies, paving the way for smarter, more responsive infrastructure.

As energy efficiency becomes a critical global concern, automated systems for lighting, HVAC, kitchen appliances, and security units continue to gain ground. Buildings are equipped with advanced control systems that reduce dependence on traditional energy sources and improve overall operational management. Regulatory frameworks focused on reducing emissions and increasing building efficiency are prompting builders and property owners to embrace smart technologies. Energy harvesting is emerging as a key component in ensuring compliance with these regulations while delivering significant long-term energy savings.

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Solar energy remains a dominant force in the transition toward intelligent buildings, with its segment projected to grow at a CAGR of 9.9% through 2034. Growing climate concerns and the rising demand for self-sufficient power systems are accelerating solar adoption in the building sector. Solar technologies integrate easily with building automation platforms, providing clean energy to power critical functions such as heating, cooling, and lighting. This not only reduces electricity bills but also enhances energy independence and environmental responsibility for property owners and developers.

In terms of components, energy-harvesting transducers accounted for 44% of the market share in 2024. These devices support wireless and self-powered sensor networks, eliminating the need for battery changes or complex wiring. Their application in lighting, temperature control, occupancy sensing, and security systems ensures streamlined energy management and sustainable operations. As a foundational element of smart building infrastructure, transducers offer scalable energy control with minimal maintenance, supporting efficient building upgrades.

The Asia Pacific Building Automation Energy Harvesting Market held a 24% share in 2024, driven by rapid urbanization and increasing construction activity. Nations across the region are adopting green building practices supported by energy-harvesting automation to align with evolving sustainability goals. Government-led initiatives and rising demand for smart real estate solutions are further accelerating regional market expansion.

Key players include ZF Friedrichshafen AG, Perpetua Power, Advanced Linear Devices, Inc., EnOcean GmbH, Texas Instruments Incorporated, Renesas Electronics Corporation, Cedrat Technologies, STMicroelectronics, Mide Technology Corp., Laird Connectivity, ABB, Honeywell, Kinergizer, Fujitsu, Mouser Electronics, and Powercast Corporation. Leading companies are investing heavily in R&D to enhance transducer and PMIC performance and integration. Strategic alliances with automation developers, infrastructure projects, and public programs are helping broaden their global presence. Additionally, custom IoT-based solutions tailored for retrofitting and new builds are gaining traction, enhancing automation capabilities and driving long-term market growth.

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Contents

CHAPTER 1 METHODOLOGY & SCOPE

1.1 Market scope & definitions
1.2 Market estimates & forecast parameters
1.3 Forecast calculation
1.4 Data sources
  1.4.1 Primary
  1.4.2 Secondary
    1.4.2.1 Paid
    1.4.2.2 Public

CHAPTER 2 EXECUTIVE SUMMARY

2.1 Industry synopsis, 2021 - 2034

CHAPTER 3 INDUSTRY INSIGHTS

3.1 Industry ecosystem analysis
3.2 Regulatory landscape
3.3 Industry impact forces
  3.3.1 Growth drivers
  3.3.2 Industry pitfalls & challenges
3.4 Impact of Trump administration tariffs on trade & overall industry
3.5 Growth potential analysis
3.6 Porter's analysis
  3.6.1 Bargaining power of suppliers
  3.6.2 Bargaining power of buyers
  3.6.3 Threat of new entrants
  3.6.4 Threat of substitutes
3.7 PESTEL analysis

CHAPTER 4 COMPETITIVE LANDSCAPE, 2024

4.1 Introduction
4.2 Strategic outlook
4.3 Innovation & sustainability landscape

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CHAPTER 5 MARKET SIZE AND FORECAST, BY SOURCE, 2021 - 2034 (USD MILLION)

5.1 Key trends
5.2 Solar energy
5.3 Vibration & kinetic energy
5.4 Thermal energy
5.5 Radio Frequency (RF)
5.6 Others

CHAPTER 6 MARKET SIZE AND FORECAST, BY COMPONENT, 2021 - 2034 (USD MILLION)

6.1 Key trends
6.2 Energy harvesting transducer
6.3 Power Management Integrated Circuits (PMIC)
6.4 Others

CHAPTER 7 MARKET SIZE AND FORECAST, BY REGION, 2021 - 2034 (USD MILLION)

7.1 Key trends
7.2 North America
  7.2.1 U.S.
  7.2.2 Canada
7.3 Europe
  7.3.1 Germany
  7.3.2 France
  7.3.3 UK
  7.3.4 Spain
  7.3.5 Italy
7.4 Asia Pacific
  7.4.1 China
  7.4.2 India
  7.4.3 Japan
  7.4.4 Australia
  7.4.5 South Korea
7.5 Middle East & Africa
  7.5.1 Saudi Arabia

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7.5.2 South Africa
7.5.3 UAE
7.6 Latin America
7.6.1 Brazil
7.6.2 Argentina

CHAPTER 8 COMPANY PROFILES

8.1 ABB
8.2 Advanced Linear Devices, Inc.
8.3 Cedrat technologies
8.4 EnOcean GmbH
8.5 Fujitsu
8.6 Honeywell
8.7 Kinergizer
8.8 Laird Connectivity
8.9 Mide Technology Corp.
8.10 Mouser Electronics
8.11 Perpetua Power
8.12 Powercast Corporation
8.13 Renesas Electronics Corporation
8.14 STMicroelectronics
8.15 Texas Instruments Incorporated
8.16 ZF Friedrichshafen AG

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