

Advancements in IoT and Smart Devices Fuel Energy Harvesting System Market Growth to \$1.06 Billion by 2030

□ *Global Energy Harvesting System Industry Set to Hit \$1.06 Billion by 2030 Amid Rising Demand for Sustainable Power*

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The global [energy harvesting system market](#) is gaining strong momentum and is projected to reach \$1.06 billion by 2030, growing at a CAGR of 7.5% from 2021 to 2030, according to Allied Market Research. Valued at \$511.6 million in 2020, this market is rapidly evolving due to the rising need for sustainable energy solutions amid growing environmental concerns.



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□ Energy Harvesting System Market to Reach \$1.06 Billion by 2030, Growing at a CAGR of 7.5%”

Allied Market Research

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What is Energy Harvesting System Technology?

Energy harvesting, also known as energy scavenging, is the process of converting ambient energy present in the

environment into usable electrical energy. Energy harvesting systems capture wasted energy from surroundings such as kinetic motion, solar radiation, vibration, heat, and radio frequency signals, and convert it into electricity to power low-energy electronic devices.

Why Energy Harvesting Systems Are Critical Today

Global energy demand has surged, leading to a significant dependency on fossil fuels, which

causes massive CO₂ emissions and environmental degradation. Energy harvesting offers a cleaner alternative, utilizing [renewable sources](#) such as solar, vibration, and thermoelectric energy, especially in infrastructure like roads and buildings where energy is often wasted. For example, a moving truck in one lane can generate up to 150 kWh energy per kilometer from vibrations and heat, making it an ideal source for energy harvesting.

Market Drivers

Solar and Light Energy Harvesting Dominance: Light energy harvesting leads the market due to high adoption in building automation, electronics, and security applications.

Electromechanical Energy Transducers: Key for converting vibrations into usable energy, transducers dominate the component segment.

Building & Home Automation Applications: Self-powered sensors for lights, HVAC systems, and security devices enable maintenance-free, eco-friendly setups.

Rising Global Energy Consumption: Asia-Pacific holds the largest market share, driven by industrialization, population growth, and green energy adoption in China and India.

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Market Segmentation Insights

Technology:

Light energy harvesting holds the largest share, thanks to [solar energy](#) products designed for automation and electronics.

Vibration, radio frequency, and thermal energy harvesting systems are emerging segments with growing applications.

Component:

Energy harvesting transducers lead the market, accounting for over two-fifths of the total share in 2020.

Power Management IC (PMIC) and storage systems also contribute to market growth.

Application:

Building & home automation emerged as the largest segment, with self-powered sensors widely

used in energy-efficient residential solutions.

Transportation, industrial applications, and consumer electronics remain important segments with promising growth rates.

Region:

Asia-Pacific is set to grow the fastest, owing to rapid industrialization and energy demand.

Europe holds the largest market share, contributing 37.3% in revenue as of 2020, growing at a CAGR of 7.3%.

Impact of COVID-19

The pandemic negatively affected the energy harvesting system market in the short term. Key industries such as building & construction, transportation, and consumer electronics saw reduced demand due to project delays and lockdowns. For instance:

The construction sector faced labor shortages and halted projects, causing work deficits and delayed deadlines.

The automotive industry experienced a 30% decline in sales during March 2020 compared to the prior year, due to plant shutdowns and travel restrictions.

Despite these challenges, demand has rebounded post-pandemic, driven by renewed focus on sustainable energy solutions and government investments in green energy infrastructure.

Competitive Landscape

Leading companies in the global energy harvesting system industry include:

Cymbet Corporation

Cedrat Technologies SA

Tekceleo

ZF Friedrichshafen AG

Physik Instrumente (PI) GmbH & Co. KG

Advanced Linear Devices Inc.

Mide Technology Corporation

Powercast

Analog Devices

These market leaders are focusing on innovation, expanding production capacities, forging partnerships, and investing in R&D to capture new growth opportunities.

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Future Outlook & Market Opportunities

The energy harvesting system market is expected to thrive as sustainability becomes a top global priority. The light energy harvesting segment is forecasted to show the highest revenue growth, registering a CAGR of 7.9% from 2021 to 2030. Furthermore, the building & home automation sector is projected to grow at a CAGR of 8.1%, reflecting increasing consumer interest in energy-efficient solutions.

With governments and industries investing in renewable technologies, the market is set to unlock significant opportunities, reducing global carbon emissions and enhancing energy efficiency in multiple sectors.

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