Energy Harvesting System Market Estimated to Experience a Hike in Growth By 2030 | Allied Market Research

Energy Harvesting System Market Expected to Reach $1,057.7 Million by 2030

PORTLAND, OREGON, UNITED STATE, April 18, 2023 /EINPresswire.com/ -- Energy harvesting (energy scavenging) is the method of conversion of ambient energy in the environment into usable electrical energy. Systems that are used for this purpose can be termed energy harvesting systems. The global energy harvesting system market size was valued at $511.6 million in 2020 and is projected to reach $1,057.7 million by 2030, growing at a CAGR of 7.5% from 2021 to 2030.

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The rise in demand for energy has increased dependency on fossil fuels for the production of energy. However, the use of fossil fuel for the production of energy leads to high carbon dioxide emission that further leads to environmental degradation. Hence, to overcome this problem, there is the development of energy harvesting techniques from building and urban infrastructure mainly roads. An annually large amount of energy in form of kinetic energy is wasted on roads. Thus, there are several developments in energy harvesting systems such as the use of solar panels, piezoelectric devices, and thermoelectric & electromagnetic harvesters in order to harvest energy from roads. This factor is predicted to augment the growth of the global market.

However, there are several disadvantages associated with energy harvesting techniques. For instance, solar energy that is to be harvested cannot be further used directly to power sensors and if powered these sensors require overcharge protection. It further increases production costs. In addition, a solar form of energy is unpredictable and is predicted to hamper market growth.

The transportation sector is the largest consumer of energy. For instance, the transportation sector in the UK consumed about 56.5 million tons of oil out of which more than 97% was resourced from the oil industry. Thus, consumption of such a large amount of energy out of which some part of the energy is wasted in the form of vibration and heat. Thus, a moving truck in one lane with an average of 600 V/h of traffic can generate 150 kWh of energy in a one-

kilometer range. This energy can be used to deform, vibrate, and warm up the road surface and can be a good source of energy for harvesting and converting. Thus, the implementation of energy harvesting techniques with the proper use of systems is predicted to offer lucrative growth opportunities in the future.

The energy harvesting system market is segmented on the basis of technology, component, application, and region.

By technology, the market is segregated into light energy harvesting, vibration energy harvesting, radio frequency energy harvesting, and thermal energy harvesting. The light energy harvesting segment dominated the global market, in terms of revenue in 2020, with over one-third of the total market share. There is a growth in demand for light energy harvesting, owing to a large number of companies that are actively engaged in the supply of solar products and solutions based on solar energy for sectors such as building automation, security application, and electronics.

By component, the global energy harvesting system market is classified into energy harvesting transducers, power management integrated circuits (PMIC), and storage systems. The energy-harvesting transducer segment dominated the global market, in terms of revenue in 2020, with over two-fifth of the total share. The rise in the use of electromechanical transducers for harvesting vibration energy is the key factor that propels market growth.

By application, the global market is divided into building & home automation, consumer electronics, industrial, transportation, and others. The building & home automation segment dominated the global market, in terms of revenue in 2020, with over two-seventh of the total share. Self-powered sensors can be used to control lights, HVAC systems, security systems, and other services. These are maintenance-free and can be installed easily into different systems that further support various applications.

Region-wise, the energy harvesting system market is analyzed across North America, Europe, Asia-Pacific, and LAMEA. The Asia-Pacific energy harvesting system market is projected to grow at the highest CAGR during the forecast period and account for 23.4% energy harvesting system market share in 2020. The region accounts for more than half of the global energy consumption, owing to a rise in industrialization and as a good increase in population. Renewable energy has grown considerably in countries such as China and India. Thus, there is a constant rise in the use of energy harvesting systems in this region.

Key players operating 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, Xidas, and Analog Devices.

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Key findings of the study

- The light energy harvesting technology segment is estimated to display the highest growth rate, in terms of revenue, registering a CAGR of 7.9% from 2021 to 2030.
- The energy harvesting transducer component type is anticipated to register the highest CAGR of 7.9% during the forecast period.
- The building & home automation end-use is estimated to display the highest growth rate, in terms of revenue, registering a CAGR of 8.1% from 2021 to 2030.
- Europe garnered the highest share of 37.3% in 2020, in terms of revenue, growing at a CAGR of 7.3%

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