

Internet of Things (IoT) in Energy Management Market Forecasts to 2034 – Global Analysis By Device (Actuators, Connected Appliances, Sensors and Other Devices), By Deployment Mode (On-premise, Cloud-based and Hybrid), Connectivity, Technology, Application, End User and By Geography

<https://marketpublishers.com/r/I9D7BFBAD672EN.html>

Date: May 2026

Pages: 200

Price: US\$ 4,150.00 (Single User License)

ID: I9D7BFBAD672EN

Abstracts

According to Statistics MRC, the Global Internet of Things (IoT) in Energy Management Market is accounted for \$125.67 billion in 2026 and is expected to reach \$527.18 billion by 2034 growing at a CAGR of 19.8% during the forecast period. The Internet of Things (IoT) in energy management represents the integration of connected devices, sensors and technologies to optimize the monitoring, control and efficiency of energy systems. Utilizing real-time data and communication, IoT applications in this context aim to enhance resource utilization, reduce energy consumption and facilitate informed decision-making for sustainable and cost-effective energy management.

According to Gartner, there are over 820 million smart meters installed globally by 2023, with projections reaching 2.67 billion by 2028. According to IEA, At the COP28 climate change conference in Dubai, more than 130 national governments including the European Union agreed to work together to triple the world's installed renewable energy capacity to at least 11 000 GW by 2030.

Market Dynamics:

Driver:

Increasing focus on energy efficiency and sustainability

With growing environmental awareness and stringent regulations, businesses and organizations prioritize optimizing energy consumption. The adoption of advanced technologies, including IoT, smart meters and energy analytics, enables real-time monitoring and data-driven decision-making, fostering more sustainable practices. This focus not only aligns with global environmental goals but also contributes to cost savings, making it a compelling driver for advancing energy management solutions.

Restraint:

Interoperability and standardization issues

The lack of standardized protocols and interoperability among diverse energy management systems hinders seamless communication and integration of devices. This fragmentation complicates the deployment of comprehensive solutions, leading to inefficiencies and increased costs. Interconnected devices must adhere to common standards for data exchange and communication to enable a cohesive energy ecosystem. The absence of such standards results in compatibility challenges, limiting the scalability and interoperability of energy management solutions.

Opportunity:

Growing need for real-time data and analytics

Businesses and utilities recognize the importance of timely insights into energy consumption patterns, grid performance and equipment efficiency. Real-time data enables informed decision-making, enhances operational efficiency and supports proactive measures for energy conservation. As technology advances, the integration of analytics provides a strategic advantage, allowing stakeholders to optimize energy usage, reduce costs and meet sustainability goals in a dynamic and data-driven manner.

Threat:

Data security and privacy concerns

Data security and privacy concerns pose significant threats in the energy management market. As Internet of Things (IoT) technologies are increasingly adopted for real-time monitoring and control of energy systems, the collection and transmission of sensitive

data have become more extensive. Breaches in cybersecurity can lead to unauthorized access, manipulation, or theft of critical information, potentially disrupting energy infrastructure and compromising user privacy, which negatively impacts the market.

Covid-19 Impact:

The COVID-19 pandemic has notably affected the IoT in the energy management market, causing disruptions in supply chains, delaying project timelines and influencing investment decisions. Lockdowns and economic uncertainties slowed down the implementation of IoT solutions. However, the crisis also highlighted the importance of resilient and automated energy systems, potentially driving increased interest and investments in IoT for energy management as the industry looks to build more robust and adaptable infrastructure post-pandemic.

The smart meters segment is expected to be the largest during the forecast period

The smart meters segment is poised to be the largest during the forecast period owing to the escalating demand for advanced utility infrastructure. As energy grids undergo modernization globally, smart meters play a pivotal role in enhancing efficiency through real-time data collection and remote management. Their integration within smart grids, coupled with the increasing focus on energy conservation, positions smart meters as a cornerstone technology. Additionally, the imperative for accurate billing, demand response and overall grid optimization contributes to the projected dominance of the smart meters segment.

The commercial is expected to have the highest CAGR during the forecast period

The commercial sector is projected to experience the highest growth rate in the forecast period owing to increasing emphasis on energy efficiency, regulatory requirements and the adoption of smart building technologies, which drive the demand for IoT in commercial energy management. Businesses prioritize cost-effective and sustainable practices, leading to the implementation of IoT solutions for real-time monitoring, automation and data-driven decision-making. This heightened awareness and the imperative for operational efficiency contribute to the anticipated rapid growth in the commercial IoT in the energy management market.

Region with largest share:

North America is positioned to dominate the Internet of Things (IoT) in energy energy

management market, primarily driven by widespread technological adoption, robust infrastructure and a focus on sustainable practices. The region's advanced smart grid initiatives, coupled with substantial investments in IoT technologies, propel its leadership. The demand for real-time monitoring, grid optimization and energy efficiency solutions further boosts the market. With a mature tech landscape and increasing awareness of environmental concerns, North America is poised to grow.

Region with highest CAGR:

The Asia Pacific region anticipates swift expansion in the Internet of Things (IoT) in energy management market, fueled by burgeoning technological adoption and a focus on sustainable energy solutions. Increased industrialization, smart city initiatives and a growing awareness of resource efficiency drive the demand for IoT applications in energy management. As businesses and governments prioritize digital transformation, the region is poised to experience substantial growth in leveraging IoT for optimizing energy consumption, monitoring and enhancing overall efficiency in the energy sector.

Key players in the market

Some of the key players in internet of things (IoT) in energy management market ABB Ltd., Bosch Software Innovations GmbH, C3.ai, Inc., Cisco Systems, Inc., Dell Technologies Inc., Eaton Corporation, Enel X, General Electric Company (GE), Honeywell International Inc., IBM Corporation, Intel Corporation, Johnson Controls International plc, Microsoft Corporation, Oracle Corporation, Osram AG, Rockwell Automation, Inc., SAP SE, Schneider Electric SE, Siemens AG and Zoho Corporation.

Key Developments:

In July 2023, Johnson Controls acquired FM:Systems, a digital workplace management and IoT solutions provider, to enhance its digital transformation offerings. The acquisition aligned with the company's focus on autonomous and digitally enabled buildings, integrating FM:Systems' predictive workplace management platform with existing building automation services and energy management solutions.

In August 2023, Siemens launched an advanced generation of line monitoring relays, the SIRIUS 3UG5, integrating IoT technology for effective energy management. These relays enhanced grid stability and quality, serving critical sectors such as hospitals and industries, offering valuable data insights and ensuring optimal component performance.

In August 2023, Zoho Corporation launched Zoho FSM, a comprehensive field service management platform tailored for business operating in the energy sector. With automation, and operational transparency, the platform would empower businesses to efficiently handle field operations while delivering exceptional service in industries such as utilities, HVAC, and others.

Devices Covered:

Actuators

Connected Appliances

Sensors

Smart Meters

Other Devices

Deployment Modes Covered:

On-premise

Cloud-based

Hybrid

Connectivities Covered:

Bluetooth

Cellular

LoRaWAN

Wi-Fi

Technologies Covered:

Cloud Computing & Edge Computing

Cybersecurity & Privacy Solutions

Data Analytics & Platforms

Sensors & Communication Devices

Applications Covered:

Asset Management

Demand Response Management

Renewable Energy Management

Smart Grids

Other Applications

End Users Covered:

Residential

Commercial

Industrial

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 2023, 2024, 2025, 2026, 2027, 2028, 2030, 2032 and 2034
- 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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