

Hydropower Market Poised for Steady Expansion with a 4.30% CAGR Through 2032

The hydropower market is driven by renewable energy demand, technological advances and global sustainability goals.

CALIFORNIA, CA, UNITED STATES, January 30, 2025 /EINPresswire.com/ --According to a comprehensive research report by Market Research Future (MRFR), The <u>Hydropower Market</u> Information by Capacity, Component and Region - Forecast till 2032, The Global Hydropower Market is



estimated to reach a valuation of USD 388.07 Billion at a CAGR of 4.30% during the forecast period from 2024 to 2032.

Hydropower Market Overview

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The hydropower market continues to expand, driven by renewable energy demand and technological advances." Hydropower, also known as hydroelectric power, is one of the oldest and most widely used renewable energy sources. It utilizes the energy of moving water to generate electricity, making it a sustainable and environmentally friendly option for power generation. The global hydropower market has been growing steadily due to increasing demand for clean energy, government incentives, and advancements in turbine technology.

Hydropower plants range from small-scale installations to large dams that generate significant amounts of electricity, contributing to energy security and grid stability.

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Key Players

Siemen AG

Stakraft Sweden

Andritz Hydro GmbH

China Three Gorges Corporation

Voith GmbH

Alfa Laval

ABB Ltd

Engie

Tata Power Corporation

Norsk Hydro SA

Market Dynamics

The hydropower market operates within a dynamic framework shaped by various economic, environmental, technological, and policy factors. As countries worldwide transition towards renewable energy, hydropower plays a crucial role in reducing carbon emissions and providing a reliable energy source. The market dynamics are influenced by developments in infrastructure, government policies, environmental regulations, and the increasing adoption of hybrid renewable energy systems. Additionally, the modernization of existing hydropower plants through digitalization and automation is further enhancing efficiency and sustainability.

Market Drivers

Several key factors are driving the growth of the hydropower market:

Rising Demand for Renewable Energy – With the growing concerns over climate change and greenhouse gas emissions, many countries are prioritizing the adoption of renewable energy sources. Hydropower, being a clean and renewable source, is playing a pivotal role in meeting these targets.

Government Initiatives and Policies – Many governments across the globe have introduced policies and incentives to encourage investment in hydropower projects. Subsidies, feed-in tariffs, and favorable regulatory frameworks have helped stimulate growth in the market.

Advancements in Hydropower Technology – Technological innovations, such as improved turbine efficiency, digital monitoring, and pumped storage solutions, are making hydropower more

viable and efficient. These advancements help optimize energy production and reduce operational costs.

Energy Security and Grid Stability – Hydropower provides a stable and consistent source of electricity, reducing dependency on fossil fuels. It plays a critical role in grid balancing, particularly in regions with fluctuating energy demand.

Growing Investment in Infrastructure – Many emerging economies are investing heavily in hydropower infrastructure to support their growing energy needs. Large-scale hydropower projects are being developed in countries such as China, India, and Brazil, contributing to market expansion.

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Market Restraints

Despite the numerous benefits, the hydropower market faces several challenges that could hinder its growth:

Environmental and Social Concerns – Large hydropower projects can lead to environmental disruptions, including habitat destruction, water quality degradation, and displacement of local communities. These concerns have led to stricter environmental regulations and opposition from activist groups.

High Initial Capital Costs – Developing a hydropower plant requires substantial investment in infrastructure, land acquisition, and equipment. This high capital requirement can act as a barrier, particularly for small and developing nations.

Climate Change and Water Availability – Climate change impacts rainfall patterns and water availability, which can affect hydropower generation. Prolonged droughts or irregular precipitation can reduce the efficiency and reliability of hydropower plants.

Hydropower Market Segmentation

Hydropower Capacity Outlook

Mini Hydropower

Micro & Pico Hydropower

Small Hydropower

Large & Medium Hydropower
Hydropower Component Outlook
Electromechanical Equipment
Electric & Power Infrastructure
Civil Construction
Others
Hydropower End User Outlook
Industrial
Utility
Others
Hydropower Regional Outlook
North America
US
Canada

Europe

Germany

Russia

Italy

France

Spain

UK

Swden

Fimland

Norway

Denmark

Rest of Europe

Asia-Pacific

China

Japan

India

South Korea

Australia & New Zealand

Rest of Asia-Pacific

Middle East & Africa

GCC Countries

South Africa

Rest of Middle East & Africa

Latin America

Brazil

Argentina

Mexico

Rest of Latin America

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Regional Analysis

The global hydropower market is spread across various regions, each contributing differently to the industry's growth based on energy policies, infrastructure, and natural water resources.

North America, particularly the United States and Canada, has a well-established hydropower infrastructure. Canada is one of the leading producers of hydroelectricity, with significant contributions from provinces like Quebec and British Columbia. In the U.S., efforts are being made to modernize aging hydropower plants and integrate them with other renewable energy sources to enhance grid resilience.

Europe has been actively promoting renewable energy, and hydropower remains a vital component of its energy mix. Countries like Norway, Sweden, and Austria generate a significant portion of their electricity from hydropower. The European Union's Green Deal and climate policies are further encouraging investments in small-scale and pumped-storage hydropower projects.

The Asia-Pacific region is the largest market for hydropower, led by China, India, and Japan. China is the global leader in hydropower capacity, with massive projects like the Three Gorges Dam contributing to its energy supply. India is also expanding its hydropower sector to meet growing energy demands and reduce reliance on coal. Additionally, Southeast Asian nations such as Vietnam and Indonesia are leveraging their abundant water resources for hydropower development.

Latin America has substantial hydropower potential, with countries like Brazil, Colombia, and Peru heavily relying on hydroelectricity. Brazil, in particular, has a strong hydropower sector, with large dams such as the Itaipu and Belo Monte contributing significantly to its power generation. The region is also witnessing investments in small and medium hydropower plants to improve energy access in remote areas.

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