

Hydro Turbine Market - Global Industry Size, Share, Trends, Opportunity, and Forecast, Segmented By Turbine (Impulse Turbine, Reaction Turbine), By Head (Low Head Turbine, Medium Head Turbine, High Head Turbine), By Installation Site (Small Hydro Power Plant, Medium Hydro Power Plant, Large Hydro Power Plants), By Region & Competition, 2021-2031F

<https://marketpublishers.com/r/H402FBF96B66EN.html>

Date: January 2026

Pages: 185

Price: US\$ 4,500.00 (Single User License)

ID: H402FBF96B66EN

Abstracts

The Global Hydro Turbine Market will grow from USD 2.82 Billion in 2025 to USD 3.81 Billion by 2031 at a 5.14% CAGR. A hydro turbine is a rotary mechanical device that converts the kinetic and potential energy of flowing water into mechanical work, serving as the essential prime mover for electricity generation in hydropower facilities.

Key Market Drivers

The modernization and refurbishment of aging hydropower infrastructure operates as a primary catalyst for market demand, necessitating the replacement of electromechanical equipment to extend facility lifespans and enhance performance. As effective operational decades pass, operators are compelled to retrofit existing plants with advanced turbine technologies that offer improved hydraulic efficiency and reduced environmental impact.

Key Market Challenges

The Global Hydro Turbine Market faces considerable constraints driven by substantial upfront capital expenditures and protracted regulatory approval processes. Large-scale hydropower projects necessitate significant initial funding for civil works, environmental

mitigation, and equipment procurement long before electricity generation begins. This capital intensity renders projects highly sensitive to financing terms and economic volatility, often deterring private investment. Additionally, navigating complex permitting requirements across multiple jurisdictions leads to extended development timelines. These delays frequently result in project postponements or cancellations, which directly restricts the volume of new turbine orders and hampers manufacturing momentum.

Key Market Trends

The adoption of small-scale and modular hydropower systems is accelerating as nations prioritize decentralized energy generation and rural electrification with minimal environmental disruption. Unlike large dams, these systems require limited civil works and can be rapidly deployed in remote locations, making them a preferred solution for off-grid communities and industrial clusters seeking reliable baseload power. This shift is further enabled by standardized turbine designs that reduce manufacturing lead times and installation costs, allowing for quicker project realization compared to traditional large-scale infrastructure.

Key Market Players

Voith Group

GE Renewable Energy

Andritz AG

Siemens Energy AG

Harbin Electric International Company Limited

Dongfang Electric Corporation. Ltd

Hitachi Ltd

Mitsubishi Heavy Industries Ltd

Toshiba Corporation

Alstom Holdings

Report Scope:

In this report, the Global Hydro Turbine Market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:

Hydro Turbine Market, By Turbine:

Impulse Turbine

Reaction Turbine

Hydro Turbine Market, By Head:

Low Head Turbine

Medium Head Turbine

High Head Turbine

Hydro Turbine Market, By Installation Site:

Small Hydro Power Plant

Medium Hydro Power Plant

Large Hydro Power Plants

Hydro Turbine Market, By Region:

North America

United States

Canada

Mexico

Europe

France

United Kingdom

Italy

Germany

Spain

Asia Pacific

China

India

Japan

Australia

South Korea

South America

Brazil

Argentina

Colombia

Middle East & Africa

South Africa

Saudi Arabia

UAE

Competitive Landscape

Company Profiles: Detailed analysis of the major companies present in the Global Hydro Turbine Market.

Available Customizations:

Global Hydro Turbine Market report with the given market data, TechSci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

Company Information

Detailed analysis and profiling of additional market players (up to five).

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